



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



AGRO-INPUT PACKAGES FOR FARMERS IN WEST AFRICA BOOK



USAID
FROM THE AMERICAN PEOPLE



INTRODUCTION

Low agricultural productivity in West African countries and Chad is partly related to the low use of appropriate agricultural inputs, including improved seed varieties and appropriate fertilizers. Indeed, in this regard, it is generally said that in this region the rate of coverage of quality certified seed requirements is still around 25% and that the average amount of nutrients used in ECOWAS region is around per arable land 17 kg/ha in 2017 and 20 kg/ha in 2020 of nutrients, which is below the 50 kg/ha of nutrients advocated by the Abuja Summit of June 2006 set for 2015, below the 24 kg/ha of nutrients on average for Africa, and far below the world average of 123 kg/ha of nutrients as of 2017. Among the many reasons that can be given to justify this statement of facts, access to training, sensitization, knowledge, and adequate information could play an important role.

EnGRAIS¹ and PAIRED are two projects funded by USAID² and implemented respectively by the International Fertilizer Development Center (IFDC) and by the West and Central African Council for Agricultural Research and Development (CORAF). IFDC and CORAF, within the framework of close cooperation between their two projects, have among other objectives to develop and make available to West African producers agricultural input packages (AIPs). These AIPs are packages that contain adapted improved seeds and appropriate fertilizer recommendations accompanied by good agricultural practices (GAP) specific to each agro-ecological zone (AEZ) across West Africa and Chad.

Both IFDC and CORAF, through their EnGRAIS and PAIRED projects, have a common objective that aims to develop and make available to producers in West Africa AIPs and a decision support tool that will enable the actors of the agricultural sector to have information on improved seeds, appropriate fertilizer recommendations, and GAPs for the main crops of the region according to the different AEZs in order to boost agricultural yields and productivity.

To this end, they have developed AIPs and the FeSeRWAM³ platform (<https://feserwam.org/>). The platform is the successor version of FeRWAM⁴, and will be deployed online as well as the associated AIPs, to be available to all stakeholders. The AIPs are embedded in the FeSeRWAM

platform, accessible online via the internet, cell phones, and computers, and several other means of dissemination are planned.

As part of this collaboration, EnGRAIS has produced and disseminated more than 250 AIPs including 80AIPs for the fiscal year 2022, 110 AIP in 2021, 20 AIPs in 2020, and the 40 AIPs in 2019, to increase available options in order to continue contributing to awareness, information, and training to widely disseminate these AIPs. In this book, the AIPs are organized by country and crops. It is a synthesis of the most relevant technical information with some illustrations to guide the technician in his dialogue with the producer so that, depending on his specific locality, the producer can produce efficiently through a judicious choice of crops, appropriate fertilizers, and also have a good technical itinerary that will guide him to obtain optimal production. For this reason, the AIP provides information on the **Crop** (varieties, varietal characteristics, local names, performance, and resistance to various constraints), **Fertilizer** (nutrient recommendations, the right fertilizer, the right rate, the right period, and at the right placement, and organic fertilizer), **Crop Management** (tillage, water management, weed management, crop residue management, management of organic manure, and organo-mineral amendments), and the **Locality** (regional AEZ, country AEZ, localities, and other information).

ACKNOWLEDGEMENTS

Special thanks go to all actors, including national experts, individuals, and organizations for their contribution to data collection and validation. Also, special thanks go to our various national and regional stakeholders from the public and private sectors who attended various meetings and workshops. We wish to thank IFDC and CORAF staff who were involved in the process, as well as supervisors who provided guidance and advice during the process. Finally, our thanks go to USAID/WARM for their support through project funding and technical assistance and guidance provided to EnGRAIS and PAIRED projects. We thank you all for your involvement and contribution in various ways to achieve this result.

¹ *The Partnership for Agricultural Research, Education and Development (PAIRED) and the Feed the Future Enhancing Growth through Regional Agricultural Inputs Systems (EnGRAIS) program are both five-year USAID regional projects (2018–2023).*

² *United States Agency for International Development*

³ *Fertilizer and Seed Recommendations Map for West Africa*

⁴ *Fertilizer Recommendations Map for West Africa*

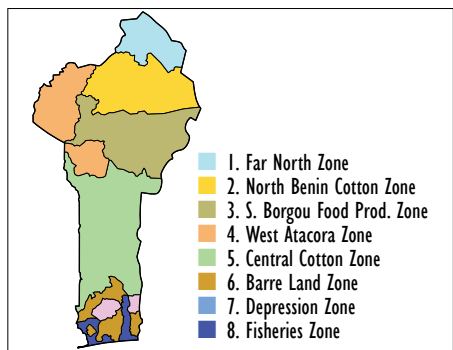
TABLE OF CONTENTS

Benin.....	1
Burkina Faso	15
Côte d'Ivoire.....	45
Ghana.....	83
Guinea	119
Liberia.....	123
Mali	129
Niger.....	155
Nigeria	173
Senegal.....	205
Togo	249

BENIN



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

CENTRAL BENIN COTTON ZONE (BASSILA, PARAKOU, TCHAOUROU, OUESSE, SAVALOU, BANTE, DASSA-ZOUME, GLAZOUE, SAVE, DJIDJA, KETOU, APLAHOUE)

Isohyet range 800-1200 mm/year (monomodal)

COTTON *Gossypium hirsutum* ✓

Variety name:	OKP 768
Local name:	
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) et 45 kg/ha (with fiber)
Spacing:	0.80 m x 0.30 m
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	180 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (42.5%)
Pest resistance:	6-8 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS 🔄

58 N - 45 P₂O₅ - 45 K₂O +15 S +2,5 B

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate:

FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha (NPKSB 14-18-18 +6S +1B)
Application period:	15-20 days after sowing (DAS)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

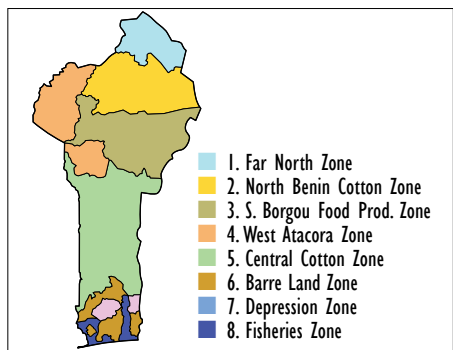
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Mulching, tillage
Method of fertilizer application:	Urea incorporated into the soil (of hill)
Amendments:	
Water management:	
Pest management:	At least 6-8 insecticide treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production)





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
NORTH BENIN COTTON ZONE, EXTREME NORTH BENIN ZONE, WEST ATACORA ZONE
Isohyet range 600-800 mm/year (monomodal)

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	ANG 956
Local name:	
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) et 45 kg/ha (with fiber)
Spacing:	0.80 m x 0.30 m
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	180 (early to late sowing)
Potential yield:	4.5 t/ha: Cottonseed (2.5-3 t/ha) and fiber yield (42.5%)
Pest resistance:	6-8 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength and grade)

NUTRIENT RECOMMENDATIONS ↻	
58 N - 45 P ₂ O ₅ - 45 K ₂ O +15 S +2,5 B	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	

FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha (NPKSB 14-18-18+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

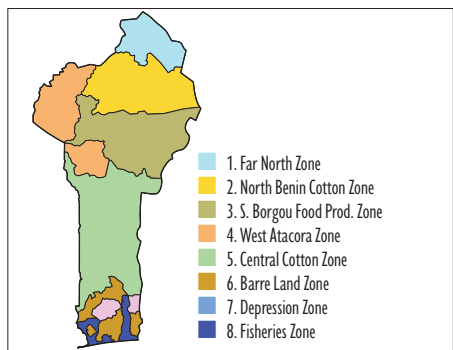
FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, tillage
Method of fertilizer application:	Urea incorporated into the soil (of hill)
Amendments:	
Water management:	
Pest management:	At least 6-8 insecticide treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ZONE 5 : CENTRAL COTTON ZONE (BASSILA, PARAKOU, TCHAOUROU, OUESSÉ, SAVALOU, BANTÈ, DASSA-ZOUMÉ, GLAZOUE, SAVÉ, DJIDJA, KÉTOU, APLAHOUE)
Isohyet range 800-1,200 mm/year, monomodal

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	OKP 768
Local name:	—
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted), 45 kg/ha (with fiber)
Spacing:	80 cm x 30 cm
Grain/flesh color:	Brown (delinted), gray (with fiber)
Planting/sowing time:	20 May–20 July
Production system:	Rainfed
Days from planting to maturity:	180 (early to late sowing)
Potential yield:	Cottonseed 2.5-3 t/ha and fiber yield 42.5%
Pest resistance:	6 insecticide treatments needed
Disease resistance:	Fungicide treatment for seeds
Other stresses:	Drought and flooding
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Livestock feed (cake); fiber quality: length, microns, tenacity and grade

NUTRIENT RECOMMENDATIONS ↻	
58 N - 45 P ₂ O ₅ - 45 K ₂ O +15 S +2.5 B	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha NPKSB 14-18-18 +6 S +1 B
Application period:	15-20 DAS
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea 46%
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

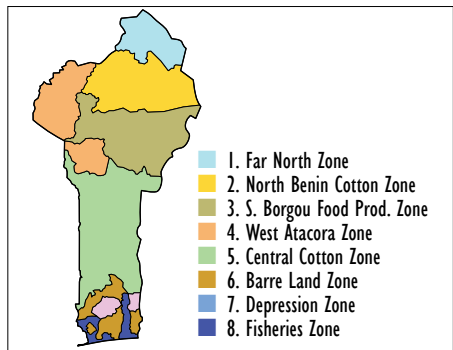
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Mulching, ploughing.
Method of fertilizer application:	Urea (staking) followed by burial.
Amendments:	—
Water management:	—
Pest management:	At least 8 insecticide treatments.
Weed control:	Weeding and herbicide treatments (total, pre-emergence and post-emergence) as needed.
Cropping system:	Cotton-cereal rotations, agriculture-livestock integration. Integration of agriculture and livestock is an essential requirement for cotton production.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ZONES 2-6
Isohyet range 1080-1140 mm/year

MAIZE *Zea mays* ✓

Variety name:	Ku Gnaayi (2000 SYN EE W BENIN)
Local name:	Ku Gnaayi
Variety type:	Pure line
Quantity of seed:	20 kg/ha
Spacing:	0.80 m or 0.75 m between rows, and 0.40 m between hills with 2 plants per hill. Sow 2-4 seeds in a row at a depth of 3-4 cm. Thin 20 days after sowing (DAS) or 15 days after emergence with 2 plants/hill
Grain/flesh color:	White
Planting/sowing time:	15 May 30 June
Production system:	Rainfed
Days from planting to maturity:	80 (extra-early)
Potential yield:	4 t/ha
Pest resistance:	Insect pests
Disease resistance:	Helmithosporia
Other stresses:	<i>Striga hermontica</i> , drought
Nutritional quality:	Yes
Other qualities:	Well-suited to local dishes (bouille, akassa, et pâte)

NUTRIENT RECOMMENDATIONS ↻

NPKSB 14-23-14-5-1 or specific fertilizers
NPKSMgOZn 15-15-15-5-3,5-1,5 ou 20-20-20-3,5-1,5

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When available, add one or more of the following: organic manure, compost, biofertilizers, biostimulants, inoculants; 5 t/ha each year

FERTILIZER RECOMMENDATION ①

Application rate: 200 kg/ha NPKSB cotton fertilizer of formula 14-23-14-5-1 or specific fertilizers NPKSMgOZn of formula 15-15-15-5-3,5-1,5 ou 20-20-20-3,5-1,5 or others

Application period: At sowing or 15 days after sowing (DAS)

Comment: 4 bags x 50 kg/ha (at sowing or thinning)

FERTILIZER RECOMMENDATION ②

Application rate: 100 kg/ha
This is the cover manure (Urea 46%)

Application period: 30-35 DAS with covered hills

Comment: 2 bags x 50 kg/ha (Urée) at booting and just before the hoeing/weeding

FERTILIZER RECOMMENDATION ③

Application rate:

Application period:

Comment:



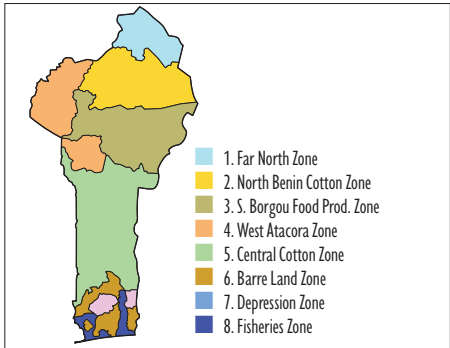
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough and harrow, +/- ridging against the slope
Method of fertilizer application:	Side placement/side dressing, and incorporate in the soil for CPD and urea fertilizers
Amendments:	Add organic manure when possible
Water management:	Bunding, ridging, drainage
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (legumes, cotton)

ZONE 2 : NORTH BENIN COTTON ZONE ZONE 3 : SOUTH BORGOU FOOD PRODUCTION ZONE ZONE 4 : WEST ATACORA-NORTH DONGA ZONE
ZONE 5 : CENTRAL COTTON ZONE ZONE 6 : BARRE LAND ZONE



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ZONES 2–6
Isohyet range 1,080-1,140 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Moungangui (synonym: EV DT 97 STR W Benin)
Local name:	—
Variety type:	Pure line
Quantity of seed:	20 kg/ha
Spacing:	80 cm or 75 cm between rows, and 40 cm between hills with 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	15 May–30 June
Production system:	Rainfed
Days from planting to maturity:	90 (early)
Potential yield:	4.5 t/ha
Pest resistance:	Resistant to insect pests
Disease resistance:	Resistant to <i>Helminthosporium</i>
Other stresses:	Resistant to drought and Striga
Nutritional quality:	—
Other qualities:	Well suited for local dishes (porridge, akassa, and pâte)

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	14 N - 23 P ₂ O ₅ - 14 K ₂ O +5 S +1 B or specific fertilizers
Application rate:	15 N - 15 P ₂ O ₅ - 15 K ₂ O +5 S +3.5 MgO +1.5 Zn or 20 N - 20 P ₂ O ₅ - 20 K ₂ O +3.5 S +1.5 MgO +B
ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha — When possible, add organic manure and/or compost, biofertilizers, biostimulants, and/or inoculants.



ZONE 2 : NORTH BENIN COTTON ZONE — ZONE 3 : SOUTH BORGOU FOOD PRODUCTION ZONE — ZONE 4 : WEST ATACORA-NORTH DONGA ZONE — ZONE 5 : CENTRAL COTTON ZONE — ZONE 6 : BARRE LAND ZONE

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 14-23-14 +5 S +1 B, ou NPK 15-15-15 +5 S +3.5 MgO +1.5 Zn, ou NPK 20-20-20 +3.5 S +1.5 MgO +Zn, ou autres
Application period:	At sowing or 15 days after sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha cover crop/green manure (Urea 46%)
Application period:	30-35 DAS in a closed hill, at bolting and just before weeding
Comment:	2 bags x 50 kg/ha

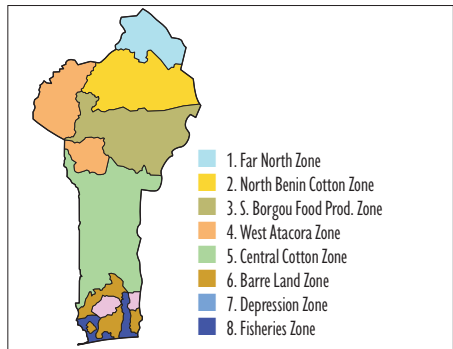
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Side placement.
Amendments:	Add organic manure if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Armyworm surveillance and application of integrated pest management (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (legumes, cotton).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
AEZ 2, 3, 4
Isohyet range 1,080-1,140 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Obatampa Benin (syn. Faaba-QPM)
Local name:	Houinlin-mi
Variety type:	Pure line
Quantity of seed:	20 kg/ha
Spacing:	80 cm x 75 cm between rows and 50 cm between holes with 2 plants in each
Grain/flesh color:	White
Planting/sowing time:	15 May–30 June
Production system:	Rainfed
Days from planting to maturity:	105 (intermediate cycle)
Potential yield:	5 t/ha
Pest resistance:	Resistant to insect ravagers
Disease resistance:	Helminthosporium, striga
Other stresses:	Drought
Nutritional quality:	Rich in the essential amino acids lysine and tryptophan
Other qualities:	Good suitability for local dishes (akassa, pâte and porridge)

NUTRIENT RECOMMENDATIONS ↻	
14 N - 23 P ₂ O ₅ - 14 K ₂ O +5 S +1 B	or specific fertilizers of formulas:
15 N - 15 P ₂ O ₅ - 15 K ₂ O +3.5 S +1.5 MgO +Zn or	
20 N - 20 P ₂ O ₅ - 20 K ₂ O +3.5 S +1.5 MgO +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha – if available add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



ZONE 2 : NORTH BENIN COTTON ZONE – ZONE 3 : SOUTH BORGOU FOOD PRODUCTION ZONE – ZONE 4 : WEST ATACORA-NORTH DONGA ZONE

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 14-23-14 +5 S +1 B
Application period:	At sowing or 15 DAS, after thinning
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	200 kg/ha NPKSMgOZn 15-15-15-3.5-1.5 or NPKSMgOZn 20-20-20-3.5-1.5
Application period:	At sowing or 15 DAS, after thinning
Comment:	4 bags x 50 kg/ha

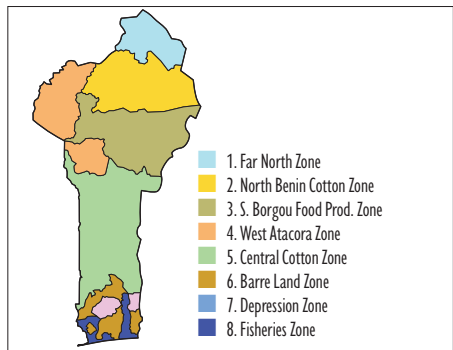
FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea 46% (cover crop manure)
Application period:	30-35 DAS in closed stakes, at bolting and just before weeding
Comment:	2 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Side placement.
Amendments:	Add organic manure if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Scout for fall army worm and apply integrated pest management (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
AEZ 3, 5, 6
Isohyet range 1,080-1,140 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	BEMA14 B-09
Local name:	
Variety type:	Pure line
Quantity of seed:	20 kg/ha
Spacing:	80 cm x 75 cm between rows and 40 cm between holes with 2 plants in each
Grain/flesh color:	White
Planting/sowing time:	15 May–30 June
Production system:	Rainfed
Days from planting to maturity:	80 (extra-early)
Potential yield:	5 t/ha
Pest resistance:	Resistant to insect ravagers
Disease resistance:	Helminthosporium, striga
Other stresses:	Drought
Nutritional quality:	Rich in the essential amino acids lysine and tryptophan
Other qualities:	Good suitability for local dishes (porridge and fresh maize)

NUTRIENT RECOMMENDATIONS ↻	
14 N - 23 P ₂ O ₅ - 14 K ₂ O +5 S +1 B	or specific fertilizers of formulas:
15 N - 15 P ₂ O ₅ - 15 K ₂ O +3.5 S +1.5 MgO +Zn or	
20 N - 20 P ₂ O ₅ - 20 K ₂ O +3.5 S +1.5 MgO +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha/yr – if available add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



ZONE 3 : SOUTH BORGOU FOOD PRODUCTION ZONE — ZONE 5 : CENTRAL COTTON ZONE
ZONE 6 : BARRE LAND ZONE

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 14-23-14 +5 S +1 B
Application period:	At sowing or 15 DAS, after thinning
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	200 kg/ha NPKSMgOZn 15-15-15-3.5-1.5 or NPKSMgOZn 20-20-20-3.5-1.5
Application period:	At sowing or 15 DAS, after thinning
Comment:	4 bags x 50 kg/ha

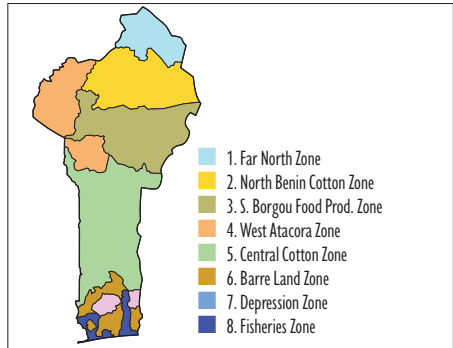
FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea 46% (cover crop manure)
Application period:	30-35 DAS in closed pockets, at bolting and just before weeding
Comment:	2 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Side placement.
Amendments:	Add organic manure if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Scout for fall army worm and apply integrated pest management (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ZONE 4: WEST ATACORA-NORTH DONGA, ZONE 5: CENTRAL COTTON ZONE
Isohyet range 800-1,500 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Briz-8B (synonym: Nerica-L19)
Local name:	ND
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting, 40 kg/ha direct sowing
Spacing:	25 cm x 25 cm [‡]
Grain/flesh color:	Yellow
Planting/sowing time:	15 June–15 July [§]
Production system:	Lowland rainfed and irrigated
Days from planting to maturity:	100-110
Potential yield:	5 t/ha
Pest resistance:	Medium
Disease resistance:	Blast
Other stresses:	Good
Nutritional quality:	Good
Other qualities:	Aromatic, well-suited for cooking

NUTRIENT RECOMMENDATIONS ↻	
	14 N - 23 P₂O₅ - 13 K₂O
	The cotton fertilizers NPKSB 14-23-13-5-1 or NPK 15-15-15 can be used at the same dosage.

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-20-15
Application period:	NPK as a pre-planting fertilizer, to make nutrients available to the rice as soon as the first roots emerge
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Divided doses: 50% at panicular initiation and 50% at grain filling
Comment:	2 bags x 50 kg/ha; provide for the needs of the plant throughout its different phases

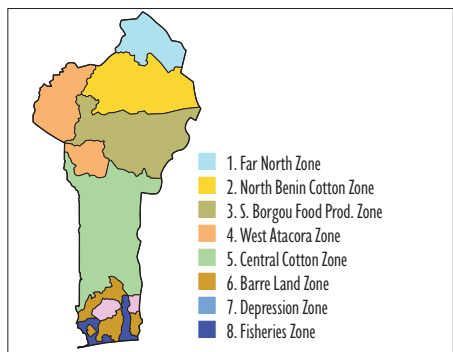
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏	
Soil and water conservation techniques:	Ploughing, harrowing, compacting, and levelling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (IPM), control of stem borers (<i>Sesamia</i> spp., <i>Diopsis</i> spp. etc.), defoliators (<i>Epilachna</i> spp. etc.), termites and rice stock insects. Combinations of products can be adopted, e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and use of herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables)

[‡] The 25 cm x 25 cm spacing facilitates weeding operations, especially for weeding with a hoe, as well as good plant growth.
[§] Sow seeds in closed holes in rainfed lowland rice, and transplant them in lines for irrigated rice. Direct sowing in rows and closed holes at a depth of 2-3 cm will obtain a good plant density, prevent competition, and facilitate maintenance. At the 4 leaves stage of the seedlings, it is advised to thin seedlings to one per spot in order to limit competition between plants and to have a better output to the hectare. Transplant the seedlings to a depth of 3 cm.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ZONE 5 : CENTRAL COTTON ZONE, ZONE 6 : BARRE LAND ZONE
Isohyet range 800-1,500 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica-L20
Local name:	—
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting, 40 kg/ha direct sowing
Spacing:	25 cm x 25 cm [‡]
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July [§]
Production system:	Lowland rainfed and irrigated
Days from planting to maturity:	100-110
Potential yield:	5 t/ha
Pest resistance:	Medium
Disease resistance:	Blast
Other stresses:	—
Nutritional quality:	—
Other qualities:	Well-suited for cooking

NUTRIENT RECOMMENDATIONS ↻	
14 N - 23 P₂O₅ - 13 K₂O	
The cotton fertilizers NPKSB 14-23-13-5-1 or NPK 15-15-15 can be used at the same dosage.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-20-15
Application period:	Pre-planting fertilizer, to make nutrients available to the rice as soon as the first roots emerge
Comment:	4 bags x 50 kg/ha

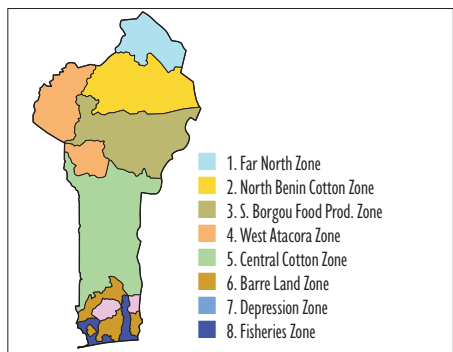
FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Divided doses: 50% at panicular initiation and 50% at grain filling
Comment:	2 bags x 50 kg/ha; provide for the needs of the plant throughout its different phases



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀	
Soil and water conservation techniques:	Ploughing, harrowing, compacting, and levelling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (IPM), control of stem borers (<i>Sesamia</i> spp., <i>Diopsis</i> spp. etc.), defoliators (<i>Epilachna</i> spp. etc.), termites and rice stock insects. Combinations of products can be adopted, e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and use of herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables)

[‡] The 25 cm x 25 cm spacing facilitates weeding operations, especially for weeding with a hoe, as well as good plant growth.
[§] Sow seeds in closed holes in rainfed lowland rice, and transplant them in lines for irrigated rice. Direct sowing in rows and closed holes at a depth of 2-3 cm will obtain a good plant density, prevent competition, and facilitate maintenance. At the 4 leaves stage of the seedlings, it is advised to thin seedlings to one per spot in order to limit competition between plants and to have a better output to the hectare. Transplant the seedlings to a depth of 3 cm.




WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ZONE 4: WEST ATACORA-NORTH DONGA, ZONE 5: CENTRAL COTTON ZONE
 Isohyet range 800-1,500 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Briz-10B (synonym: Orylux-6)
Local name:	—
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting, 40 kg/ha direct sowing
Spacing:	25 cm x 25 cm [‡]
Grain/flesh color:	Yellow
Planting/sowing time:	15 June–15 July [§]
Production system:	Lowland rainfed and irrigated
Days from planting to maturity:	100
Potential yield:	5 t/ha
Pest resistance:	Medium
Disease resistance:	Blast
Other stresses:	Good
Nutritional quality:	Good
Other qualities:	Aromatic, well-suited for cooking

NUTRIENT RECOMMENDATIONS ↻	
	14 N - 23 P₂O₅ - 13 K₂O
	The cotton fertilizers NPKSB 14-23-13-5-1 or NPK 15-15-15 can be used at the same dosage.

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-20-15
Application period:	NPK as a pre-planting fertilizer, to make nutrients available to the rice as soon as the first roots emerge
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Divided doses: 50% at panicular initiation and 50% at grain filling
Comment:	2 bags x 50 kg/ha; provide for the needs of the plant throughout its different phases

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Ploughing, harrowing, compacting, and levelling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (IPM), control of stem borers (<i>Sesamia</i> spp., <i>Diopsis</i> spp. etc.), defoliators (<i>Epilachna</i> spp. etc.), termites and rice stock insects. Combinations of products can be adopted, e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and use of herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables)

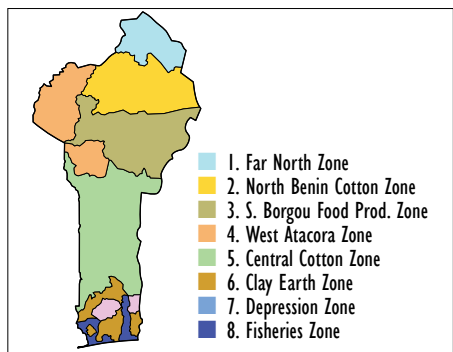
[‡] The 25 cm x 25 cm spacing facilitates weeding operations, especially for weeding with a hoe, as well as good plant growth.

[§] Sow seeds in closed holes in rainfed lowland rice, and transplant them in lines for irrigated rice. Direct sowing in rows and closed holes at a depth of 2-3 cm will obtain a good plant density, prevent competition, and facilitate maintenance. At the 4 leaves stage of the seedlings, it is advised to thin seedlings to one per spot in order to limit competition between plants and to have a better output to the hectare. Transplant the seedlings to a depth of 3 cm.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUB-HUMID (ZONE 5 : CENTRAL BENIN COTTON ZONE)
 Isohyet range 800-1200 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	DSG3
Local name:	
Variety type:	Pure line
Quantity of seed:	8 kg/ha
Spacing:	
Grain/flesh color:	Brown
Planting/sowing time:	May July (sowing in rows is carried out on flat ground after cultivation, or on new or old ridges, after a rainfall of 20 mm)
Production system:	Rainfed
Days from planting to maturity:	80
Potential yield:	4.85 t/ha
Pest resistance:	
Disease resistance:	<i>Striga hermontica</i>
Other stresses:	Drought
Nutritional quality:	Pro-vitamin A
Other qualities:	Dwarf variety

NUTRIENT RECOMMENDATIONS

N - P₂O₅ - K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: As possible; organic manure, compost, biofertilizers, biostimulants, inoculants; 5 t/ha every 2 years

FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 16-16-16, NPK 15-15-15
Application period:	2 weeks after sowing
Comment:	2 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	40-45 days after sowing (at panicular initiation)
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

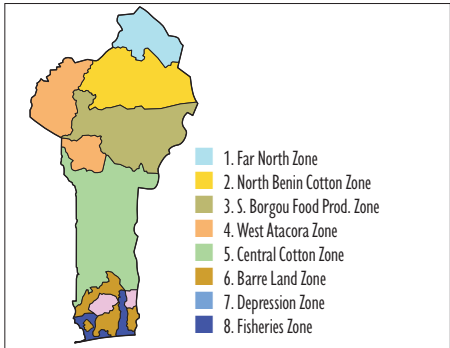
Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Localised
Amendments:	Add organic manure when necessary
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide application
Cropping system:	Rotation (legumes, cotton)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMIDE



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
AEZS 1, 2, 4, 5
Isohyet range 800-1,200 mm/year

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	Ngunthe
Local name:	—
Variety type:	Pure line
Quantity of seed:	8 kg/ha
Spacing:	—
Grain/flesh color:	Brown
Planting/sowing time:	May–July: Sowing in rows to be carried out on level ground after raking or on new or old ridges after a rain of 20 mm
Production system:	Rainfed
Days from planting to maturity:	80
Potential yield:	2.5 kg/ha
Pest resistance:	Very good
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	Pro-vitamin A content
Other qualities:	Suitability for cooking (porridge, dough, drink)

NUTRIENT RECOMMENDATIONS ↻	
N - P ₂ O ₅ - K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha — When possible, add organic manure and/or compost, biofertilizers, biostimulants, and/or inoculants.



ZONE 1 : FAR NORTH ZONE — ZONE 2 : NORTH BENIN COTTON ZONE —
ZONE 4 : WEST ATACORA-NORTH DONGA ZONE — ZONE 5 : CENTRAL COTTON ZONE — ZONE 6 : BARRE LAND ZONE

FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 16-16-16 or NPK 15-15-15
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea
Application period:	40-45 DAS (at panicular initiation)
Comment:	1 bag x 50 kg/ha

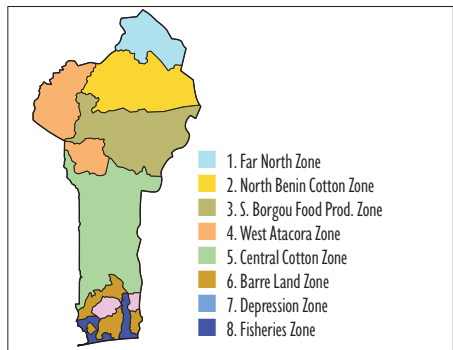
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope.
Method of fertilizer application:	Localized input.
Amendments:	Add organic material if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Armyworm surveillance and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and application of herbicide.
Cropping system:	Rotation (legumes, cotton).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
AEZ 1, 2, 4, 5
Isohyet range 800-1,200 mm/year

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	Soumalemmba
Local name:	—
Variety type:	Pure line
Quantity of seed:	8 kg/ha
Spacing:	—
Grain/flesh color:	Brown
Planting/sowing time:	May–July. Sow in rows on flat ground after raking or on new or old ridges after a rainfall of 20 mm.
Production system:	Rainfed
Days from planting to maturity:	135
Potential yield:	2.7 t/ha
Pest resistance:	Striga
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	
Other qualities:	Suited to cooking (porridge, pâte, drinks), pro-vitamin A content

NUTRIENT RECOMMENDATIONS ↻	
N - P ₂ O ₅ - K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



ZONE 1: FAR NORTH ZONE — ZONE 2 : NORTH BENIN COTTON ZONE — ZONE 4 : WEST ATACORA-NORTH DONGA ZONE — ZONE 5 : CENTRAL COTTON ZONE

FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 16-16-16
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha Urea
Application period:	40-45 DAS at panicular initiation
Comment:	1 bag x 50 kg/ha

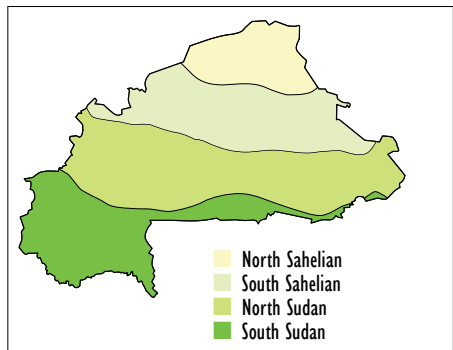
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope.
Method of fertilizer application:	Localised.
Amendments:	Add organic manure if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Monitor for fall army worm and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes).



BURKINA FASO



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

NORTH SUDAN (SOLENZO, DEDOUGOU, NOUNA, KOUDOUGOU, KOMBISSIRI, TENKODOGO, FADA, TOUGAN)

Isohyet range 600-800 mm/year (monomodal)

COTTON *Gossypium hirsutum* ✓

Variety name:	FK37
Local name:	
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) et 45 kg/ha (with fiber)
Spacing:	0.80 m x 0.40 m
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (42.5%)
Pest resistance:	5-6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS ↻

46 N - 27 P₂O₅ - 27 K₂O +9 S +1,5 B

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①

Application rate:	100-150 kg/ha (NPKSB 14-18-18+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha (KCl 60%)
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

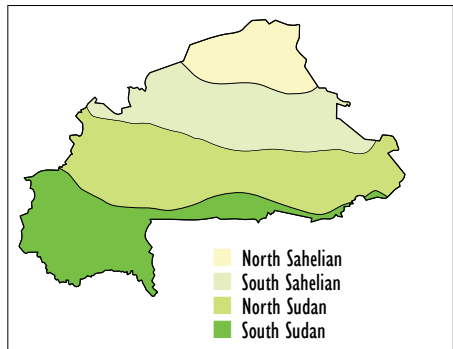


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Stone lines, mulching, grass strips, minimum/zero tillage, direct seeding, scarification (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	In line or in hill NPK (side dressing) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues, natural phosphate, dolomite (according to availability and affordability)
Water management:	Zai technique (zai or hole as necessary)
Pest management:	At least 5-6 insecticide treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SUDAN (BOBO DIOULASSO, BANFORA, HOUNDE DIEBOUGOU, GAOUA, PO, BOROMO, LEO, DIAPAGA)
 Isohyet range 800-1200 mm/year (monomodal)

COTTON *Gossypium hirsutum* ✓

Variety name:	FK64
Local name:	
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) and 40 kg/ha (with fiber)
Spacing:	0.80 m x 0.40 m
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (42.5%)
Pest resistance:	6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS

51 N - 36 P₂O₅ - 36 K₂O +12 S +3 B

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①

Application rate:	150-200 kg/ha (NPKSB 14-18-18+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	3-4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha (KCl 60%)
Application period:	15-20 DAY
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

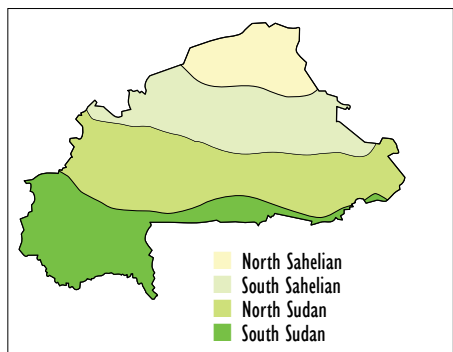


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Stone lines, mulching, grass strips, minimum/zero tillage, direct seeding, scarification (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	In line or in hill NPK (side dressing) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues, natural phosphate, dolomite (according to availability and affordability)
Water management:	No cotton doesn't like excess water
Pest management:	At least 6 insecticide treatments; for early sowing increase the number of treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SUDAN (BATIE, GAOUA, BANFORA, BOBO DIOLASSO, ORODARA, SINDOU, HOUNDE, DIEBOUGOU, DANO, LEO, PO)

Isohyet range 800-1200 mm/year

COWPEA *Vigna unguiculata* ✓

Variety name:	KVX61-1 (synonym: Beng siido)
Local name:	
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	0.80 m x 0.40 m
Grain/flesh color:	White marked with red (bicolor)
Planting/sowing time:	15 June 15 July
Production system:	Rainfed
Days from planting to maturity:	70 (early)
Potential yield:	1.5 t/ha
Pest resistance:	<i>Striga hermontica</i>
Disease resistance:	CABMV
Other stresses:	Drought
Nutritional quality:	Proteins
Other qualities:	Sweet, easy to cook

NUTRIENT RECOMMENDATIONS

N - 23 P₂O₅ - 14 K₂O +6 S +1 B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: As possible, 5 t/ha every 2 years

FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 14-23-14+6S+1B
Application period:	NPK at sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

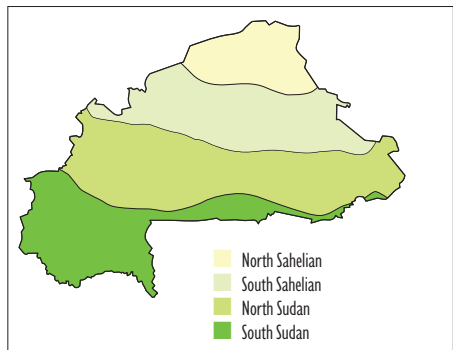


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Localised, in lines, or broadcast (fertilizer buried during soil preparation or not applied during the first weeding).
Amendments:	Add organic manure as much as possible
Water management:	Stone lines, Zai holes
Pest management:	Seed treatment with fungicides; scout for insects (<i>Maruca vitrata</i>) and treat with pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cereals)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARIDE



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (OUAHIGOUYA, BOULSA, KAYA, KONGOUSSI, TOUGAN, TOMA, SEBBA, GOURCY, YAKO, BOUSSÉ, ZINIARÉ, BOGANDÉ, GAYÉRI, SOLENZO, DÉDOUGOU, RÉO)

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Nafi
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha — use 2 seeds per hill
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	July
Production system:	Rainfed
Days from planting to maturity:	67 (early)
Potential yield:	2 t/ha
Pest resistance:	Resistant to striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, and micronutrients
Other qualities:	Large white seeds, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	23
P ₂ O ₅	14
K ₂ O	14
S	6
B	1
Mn	+
Ca	+
Mg	+
Zn	+

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years. If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

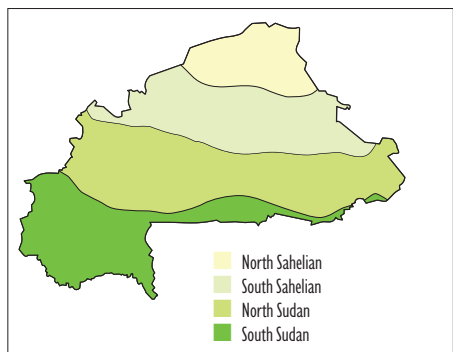
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing. Zai method, stone cordons, mulching, grass strips, and/or minimum/zero tillage, soil preparation are recommended.
Method of fertilizer application:	Localized, in furrows, or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, irrigation, and water harvesting techniques.
Pest management:	Monitoring against insects (<i>Maruca vitrata</i>) and treatment with pesticides (IPM). Seed treatment with fungicides, use of insecticides.
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (OUAHIGOUYA, BOULSA, KAYA, KONGOUSSI, TOUGAN, TOMA, SEBBA, GOURCY, YAKO, BOUSSÉ, ZINIARÉ, BOGANDÉ, GAYÉRI, SOLENZO, DÉDOUGOU, RÉO)

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Tiligre
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	July, when the soil is wet
Production system:	Rainfed
Days from planting to maturity:	70 (early)
Potential yield:	2 t/ha
Pest resistance:	Striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Large white seeds, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	23 P ₂ O ₅ - 14 K ₂ O +6 S +1 B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

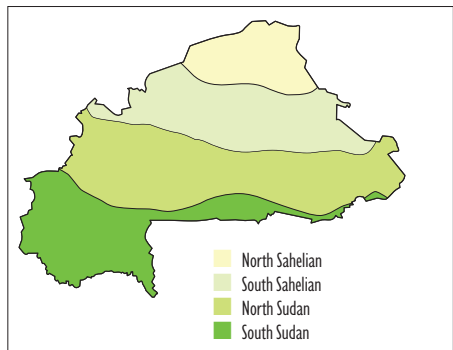
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing. In addition, the Zai method, stone barriers, mulching, grass strips, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Localized or in furrows or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	5 t/ha every 2 years — if necessary, add organic fertilizer such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, and water harvesting techniques.
Pest management:	Seed treatments with fungicides; Monitoring against insects (Maruca vitrata) and treatment with pesticides (IPM), such as fungicides and insecticides.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SUDAN (BATIÉ, GAOUA, BANFORA, BOBO DIULASSO, ORODARA, SINDOU, HOUNDÉ, DIÉBOUGOU, DANO, LÉO, PÔ)
Isohyet range 800-1,200 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Gourgou
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha — use 2 seeds per hill.
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	July
Production system:	Rainfed
Days from planting to maturity:	75
Potential yield:	2 t/ha
Pest resistance:	Striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, and micronutrients
Other qualities:	Large long white seeds, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	23
P ₂ O ₅	14
K ₂ O	6
S	1
B	1
Mn	+
Ca	+
Mg	+
Zn	+

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years. If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

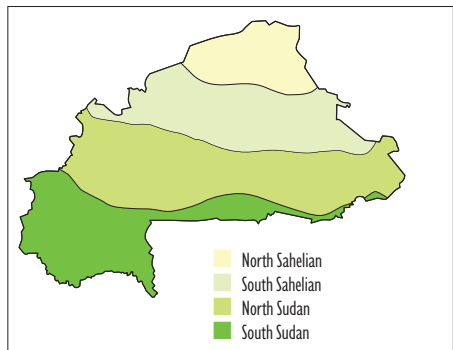
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing. Zai method, stone cordons, mulching, grass strips, and/or minimum/zero tillage, soil preparation are recommended.
Method of fertilizer application:	Localized, in furrows, or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, irrigation, and water harvesting techniques.
Pest management:	Monitoring against insects (<i>Maruca vitrata</i>) and treatment with pesticides (IPM). Seed treatment with fungicides, use of insecticides.
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SAHELIEN (OUAHIGOUYA)
Isohyet range 600-800 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Komcallé
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	60 (extra early)
Potential yield:	1.8 t/ha
Pest resistance:	Striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Large seed, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	- 23 P ₂ O ₅ - 14 K ₂ O +6 S +1 B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years – if possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

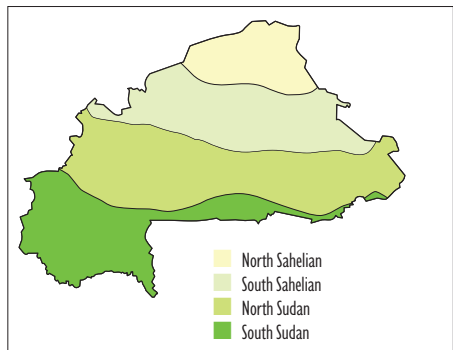


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Ploughing, harrowing. In addition, the Zai method, stone barriers, mulching, grass strips, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Localized or in furrows or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	If necessary, add organic fertilizer such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, and water harvesting techniques.
Pest management:	Seed treatments with fungicides; Monitoring against insects (Maruca vitrata) and treatment with pesticides (IPM), such as fungicides and insecticides.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (BOULSA, KAYA, KONGOUSSI, OUAHIGOUYA, TOUGAN, TOMA, SEBBA, GOURCY, YAKO, BOUSSÉ, ZINIARÉ, Isohyet range 800-1,200 mm/year
BOGANDÉ, GAYÉRI, SOLENZO, DEDOUGOU, RÉO)

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Niizwe
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	July (when soil is wet)
Production system:	Rainfed
Days from planting to maturity:	60 (extra-early)
Potential yield:	1.2 t/ha
Pest resistance:	Striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, and micronutrients
Other qualities:	Large white grains, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	23
P ₂ O ₅	14
K ₂ O	14
S	6
B	1
Mn	+
Ca	+
Mg	+
Zn	+

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years. If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

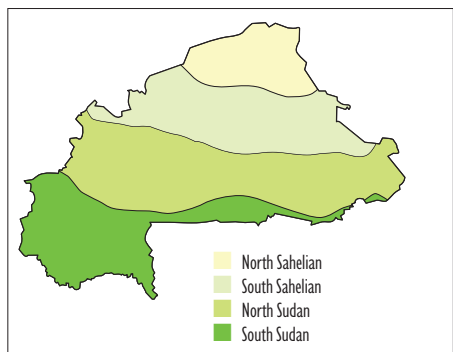
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing. Zai method, stone cordons, mulching, grass strips, and/or minimum/zero tillage, soil preparation are recommended.
Method of fertilizer application:	Localized, in furrows, or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, irrigation, and water harvesting techniques.
Pest management:	Monitoring against insects (<i>Maruca vitrata</i>) and treatment with pesticides (IPM). Seed treatment with fungicides, use of insecticides.
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SUDAN (BATIÉ, GAOUA, BANFORA, BOBO DIULASSO, ORODARA, SINDOU, HOUNDÉ, DIÉBOUGOU, DANO, LÉO, PÔ)
Isohyet range 800-1,200 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Yiis Yande
Local name:	—
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	July (when soil is wet)
Production system:	Rainfed
Days from planting to maturity:	70 (early)
Potential yield:	2 t/ha
Pest resistance:	Striga
Disease resistance:	CABMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, and micronutrients
Other qualities:	Large white seeds, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻	
N	23
P ₂ O ₅	14
K ₂ O	14
S	6
B	1
Mn	+
Ca	+
Mg	+
Zn	+

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years. If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14 +6 S +1 B
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing. Zai method, stone cordons, mulching, grass strips, and/or minimum/zero tillage, soil preparation are recommended.
Method of fertilizer application:	Localized, in furrows, or broadcast. The fertilizer is buried during soil preparation or applied during the first weeding.
Amendments:	Add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Zai method, stone lines, irrigation, and water harvesting techniques.
Pest management:	Monitoring against insects (<i>Maruca vitrata</i>) and treatment with pesticides (IPM). Seed treatment with fungicides, use of insecticides.
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.




MAIZE *Zea mays*


Variety name:	Barka
Local name:	
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	0.80 m x 0.30 m
Grain/flesh color:	White
Planting/sowing time:	15 June - 15 August (unimodal)
Production system:	Rainfed, can be produced under irrigation
Days from planting to maturity:	70-85 (early)
Potential yield:	5.5 t/ha
Pest resistance:	
Disease resistance:	Maize streak virus, DMR, mildew
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS


60 N - 23 P₂O₅ - 14 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION


Application rate: When available, add one or more of the following: organic manure, compost, biofertilizers, biostimulants, inoculants; 5 t/ha each year

FERTILIZER RECOMMENDATION


Application rate:	300 kg/ha NPK 20-10-10 or 200 kg/ha NPK 27:13:13
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha or 4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION

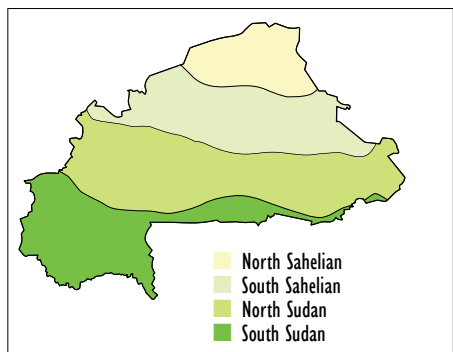

Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION


Application rate:	
Application period:	
Comment:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



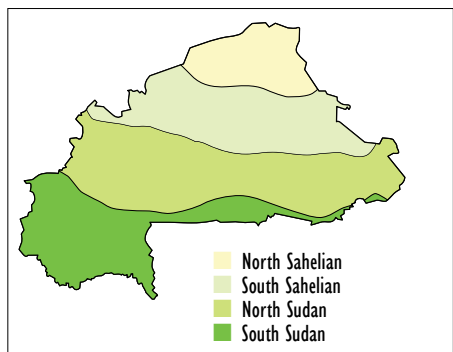
COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN (BOBO DIOULASSO, LEO, GAOUA, DEDOUGOU)
 Isohyet range 900-1000 mm/year

GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Plough and harrow, +/- ridging across slopes, and in addition: Zai holes, stone lines, mulching, grass strips, bunding, and minimum/zero tillage are recommended
Method of fertilizer application:	Punch, side placement, and cover
Amendments:	Add organic manure when available
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (legumes, cotton)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN (KAMBOISE, SARIA, OUGADOGOU, KAYA)
 Isohyet range 900-1000 mm/year

MAIZE *Zea mays*


Variety name:	Espoir
Local name:	Espoir
Variety type:	OPV
Quantity of seed:	20 kg/ha (when using a mechanical seeder, 12-15 kg manual seeding)
Spacing:	0.80 m x 0.30 m
Grain/flesh color:	Yellow
Planting/sowing time:	15 July 15 August (unimodal)
Production system:	Rainfed (can be produced under irrigation)
Days from planting to maturity:	95-110
Potential yield:	6.5 t/ha
Pest resistance:	Yes
Disease resistance:	Maize streak virus (MSV)
Other stresses:	
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS


88 N - 69 P₂O₅ - 45.5 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION


Application rate: When available, add one or more of the following: organic manure, compost, biofertilizers, biostimulants, inoculants; 5 t/ha each year

FERTILIZER RECOMMENDATION


Application rate: 300 NPK 14-23-14
 Application period: At sowing (micro-dose)
 Comment: 6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION


Application rate: 67 kg/ha Urea
 Application period: 2/3 at 25 days after sowing (DAS)
 Comment: 1.3 bag x 50 kg/ha

FERTILIZER RECOMMENDATION

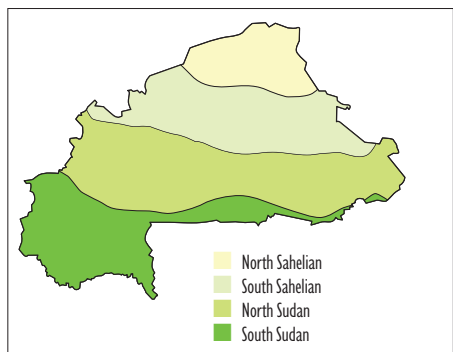

Application rate: 33 kg/ha Urea
 Application period: 1/3 at 40 DAS
 Comment: 0.6 bag x 50 kg/ha


GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Plough and harrow, +/- ridging across slopes, and in addition: Zai holes, stone lines, mulching, grass strips, bunding, and minimum/zero tillage are recommended
Method of fertilizer application:	Punch, side placement, and cover
Amendments:	Add organic manure when available
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (legumes, cotton)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (BOBO DIOLASSO, LÉO, GAWA, DÉBOU)
Isohyet range 800-1,000 mm/year

MAIZE <i>Zea mays</i>	
Variety name:	Wari
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha (3 seeds per hill)
Spacing:	80 cm x 30 cm
Grain/flesh color:	Yellow
Planting/sowing time:	15 June–15 July: unimodal, sow in moist soil
Production system:	Rainfed, also irrigated
Days from planting to maturity:	90
Potential yield:	6 t/ha
Pest resistance:	—
Disease resistance:	MSV
Other stresses:	Lodging, striga, drought
Nutritional quality:	Quality protein maize
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
88 N - 69 P ₂ O ₅ - 45.5 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	5 t/ha — If available, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 14-23-14
Application period:	At sowing (microdose)
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	67 kg/ha Urea
Application period:	2/3 at 25 DAS
Comment:	1.3 bags x 50 kg/ha

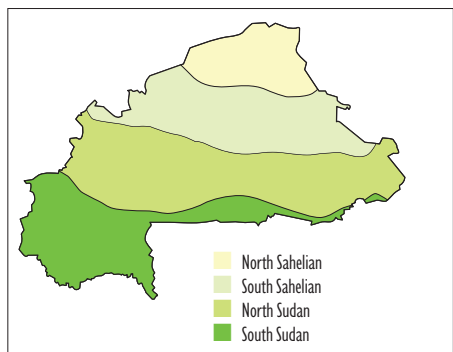
FERTILIZER RECOMMENDATION ③	
Application rate:	33 kg/ha Urea
Application period:	1/3 at 40 DAS
Comment:	0.6 sacs x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Make a hill in the soil, place dose inside, and close up the hill.
Amendments:	Add organic manure if available.
Water management:	Bunding, harrowing, drainage.
Pest management:	Monitor for armyworm and apply integrated pest management (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIEEN (KAMBOINSÉ, SARIA, OUAGADOUGOU, KAYA)
Isohyet range 500-900 mm/year

MAIZE *Zea mays* ✓

Variety name:	KEJ
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	80 cm x 30 cm
Grain/flesh color:	Yellow
Planting/sowing time:	15 June–15 July: unimodal
Production system:	Rainfed, also irrigated
Days from planting to maturity:	75-80 (extra-early)
Potential yield:	3.2 t/ha
Pest resistance:	Yes
Disease resistance:	MSV
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

88 N - 69 P₂O₅ - 45.5 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha — If available, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	300 kg/ha NPK 14-23-14
Application period:	At sowing (microdose)
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	67 kg/ha Urea
Application period:	2/3 at 25 DAS
Comment:	1.3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	33 kg/ha Urea
Application period:	1/3 at 40 DAS
Comment:	0.6 sacs x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Make a hill in the soil, place dose inside, and close up the hill.
Amendments:	Add organic manure if available.
Water management:	Bunding, harrowing, drainage.
Pest management:	Monitor for armyworm and apply integrated pest management (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping, continuous monoculture.

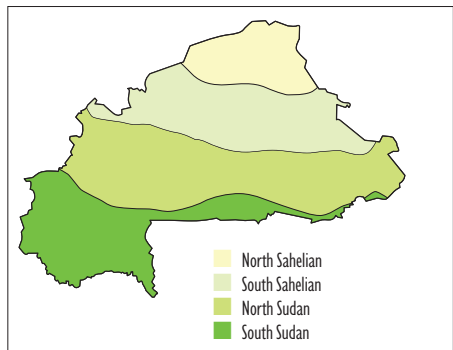




MAIZE <i>Zea mays</i>	
Variety name:	KPB
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	15 July–15 August: unimodal
Production system:	Rainfed
Days from planting to maturity:	70-85 (extra-early)
Potential yield:	3.4 t/ha
Pest resistance:	Yes
Disease resistance:	MSV
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Moderate tolerance to lodging



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (KAMBOINSE, SARIA, OUGADOGOU, KAYA)
Isohyet range 500-900 mm/year

NUTRIENT RECOMMENDATIONS	
88 N - 69 P ₂ O ₅ - 45.5 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	5 t/ha — If available, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 14-23-14
Application period:	At sowing (microdose)
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	67 kg/ha Urea
Application period:	2/3 at 25 DAS
Comment:	1.3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	33 kg/ha Urea
Application period:	1/3 at 40 DAS
Comment:	0.6 sacs x 50 kg/ha

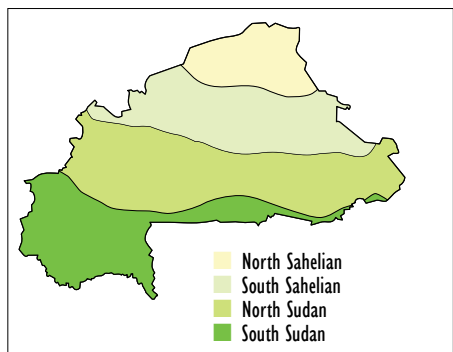


GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Make a hill in the soil, place dose inside, and close up the hill.
Amendments:	Add organic manure if available.
Water management:	Bunding, harrowing, drainage.
Pest management:	Monitor for armyworm and apply integrated pest management (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control) and herbicides (Glyphosate and Gramazone).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (SAHEL, SUDANO-SAHELIAN, SUDANIAN)

Isohyet range 250-500 mm/year (aussi possible à 500-900 et 900-1000 mm/year)

MILLET *Pennisetum glaucum* ✓

Variety name:	SOSAT-C88
Local name:	
Variety type:	OPV
Quantity of seed:	8-10 kg/ha
Spacing:	0.80 m x 0.60 m
Grain/flesh color:	Grey
Planting/sowing time:	1 June 15 July
Production system:	Rainfed
Days from planting to maturity:	60 (extra early)
Potential yield:	2 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Tolerant of lodging
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻

18 N - 14 P₂O₅ - 9 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: Organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate: 100 kg NPK 14-23-14
Application period: At sowing
Comment: 1.25 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate: 50 kg Urea
Application period: At sowing
Comment: 0.42 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:
Application period:
Comment:

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Zāi holes, stone lines, mulching, grass strip, bunding
Method of fertilizer application:	Strip or point of application
Amendments:	5 t/ha manure, when available
Water management:	Zāi holes, stone lines, mulching, grass strips, bunding, water harvesting techniques
Pest management:	Integrated pest management (IPM)
Weed control:	Mechanical weeding
Cropping system:	Rotation, intercropping with legumes (cowpea or groundnut) or cotton




MILLET *Pennisetum glaucum* ✓

Variety name:	IKMV 8201
Local name:	—
Variety type:	OPV
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 60 cm
Grain/flesh color:	Gray-yellow
Planting/sowing time:	1 June–15 July
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	2 t/ha
Pest resistance:	Yes
Disease resistance:	Yes
Other stresses:	Tolerant to lodging
Nutritional quality:	Rich in iron
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

37 N - 23 P₂O₅ - 14 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: —


FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 14-23-14
Application period:	15 days after sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	45 days after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

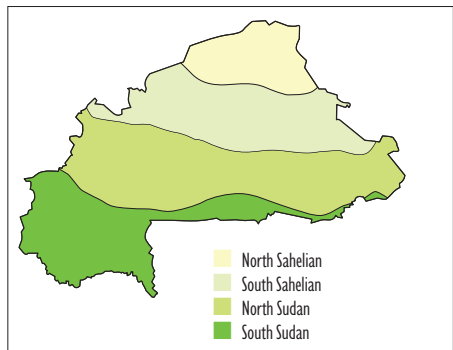
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Zai, stone barriers, mulching, grass strips, bunds. Minimum/zero tillage is also a recommended soil preparation method where possible.
Method of fertilizer application:	In band or localized, e.g. UDP, FDP, microdosing, flying, or fertigation.
Amendments:	5 t/ha manure if available.
Water management:	Zai method, stone lines, mulching, grass strips, bunds, water harvesting techniques.
Pest management:	IPM.
Weed control:	Mechanical weeding.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut).



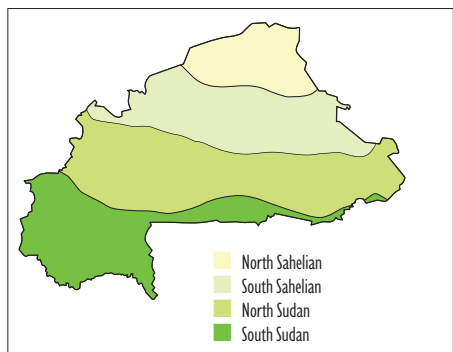
WEST AFRICA AGRO-ECOLOGICAL ZONE
ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN, SUDANO-SAHELIAN
 Isohyet range 250-500 mm/year (also good at 500-900 mm/year)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN
 Isohyet range 500-900 mm/year

MILLET *Pennisetum glaucum* ✓

Variety name:	Misari 1
Local name:	—
Variety type:	OPV
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 60 cm
Grain/flesh color:	Grey
Planting/sowing time:	1 June–15 July, when soil is wet
Production system:	Rainfed
Days from planting to maturity:	100 (intermediate cycle)
Potential yield:	2 t/ha
Pest resistance:	Moderate
Disease resistance:	Moderately resistant to mildew
Other stresses:	—
Nutritional quality:	Rich in iron
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

37 N - 23 P₂O₅ - 14 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha manure every 2 years.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 14-23-14
Application period:	15 DAS
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	45 JAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

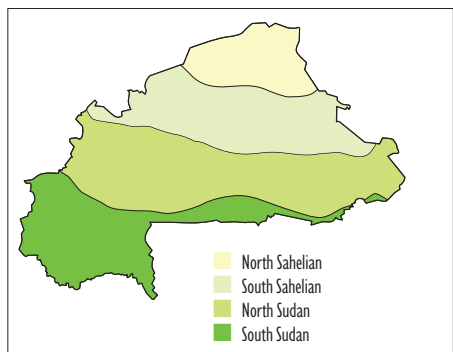
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Zai method, stone lines, mulch, grass strips, ridging.
Method of fertilizer application:	In a band or localised.
Amendments:	5 t/ha manure every 2 years.
Water management:	Zai method, stone lines, mulch, grass strips, ridging, water harvesting techniques.
Pest management:	IPM.
Weed control:	Mechanical weeding.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN, SUDANIAN
Isohyet range 500-900 mm/year

MILLET *Pennisetum glaucum* ✓

Variety name:	Misari 2
Local name:	—
Variety type:	OPV
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 80 cm
Grain/flesh color:	Gray
Planting/sowing time:	30 June–15 July
Production system:	Rainfed
Days from planting to maturity:	70 (extra early)
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	Mildew
Other stresses:	—
Nutritional quality:	Rich in iron
Other qualities:	Large grains

NUTRIENT RECOMMENDATIONS ↻

37 N - 23 P₂O₅ - 14 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha every 2 years — Add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 14-23-14
Application period:	15 days after sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	45 days after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Zai, stone barriers, mulching, grass strips, bunds. Minimum/zero tillage is also a recommended soil preparation method where possible.
Method of fertilizer application:	In band or localized, e.g. UDP, FDP, microdosing, flying, or fertigation.
Amendments:	5 t/ha manure if available.
Water management:	Zai method, stone lines, mulching, grass strips, bunds, water harvesting techniques.
Pest management:	IPM.
Weed control:	Mechanical weeding and GAP.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut).

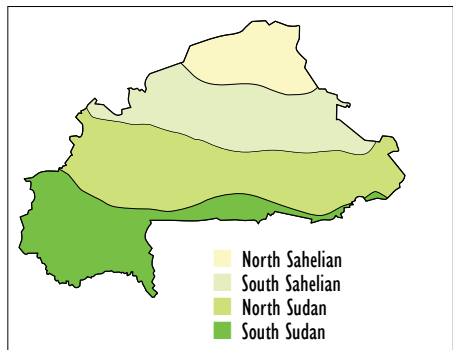




RICE <i>Oryza sativa</i>	
Variety name:	FKR56N
Local name:	
Variety type:	Pure lines
Quantity of seed:	15-20 kg/ha transplanting; 20-30 kg/ha direct seeding
Spacing:	0.25 m x 0.25 m in continuous rows with 0.25 cm row spacing
Grain/flesh color:	White
Planting/sowing time:	July (rainfed), Dec-Jan (irrigated)
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	115-120
Potential yield:	5-7 t/ha
Pest resistance:	
Disease resistance:	Burns
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	Long grain, aromatic, cooking quality, etc.



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SAHELIAN (DI, MOGTEDO, TOUGAN, NIASSAN, SONO, DEDOUGOU, BAGRE)
 Isohyet range 600-800 mm/year

NUTRIENT RECOMMENDATIONS	
	120 N - 46 P ₂ O ₅ - 28 K ₂ O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible; 5 t/ha every 2 years

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK (14-23-14)
Application period:	NPK at sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100-150 kg/ha Urea in 2 dressings
Application period:	First application: 35-50 kg/ha (7-14 days after sowing or planting); second application: 65-100 kg/ha (55-60 at panicular stage)
Comment:	2-3 bags x 50 kg/ha

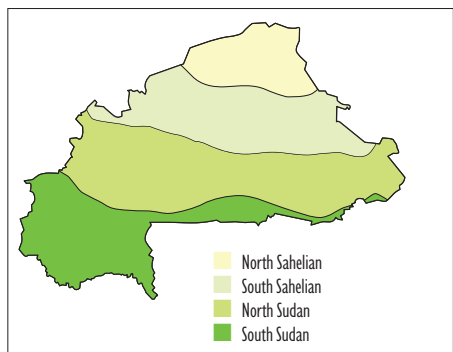
FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow, puddling, and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure as much as possible
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management, IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (TOUGAN, NIASSAN, SONO, DÉDOUGOU, MOGTEDO, BAGRÉ)
 Isohyet range 600-800 mm/year

RICE *Oryza sativa* ✓

Variety name:	FK62N
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-20 kg/ha transplanting after nursery; 20-30 kg/ha direct sowing
Spacing:	25 cm x 25 cm — in continuous rows with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	July, rainfed; Dec–Jan, irrigated
Production system:	Lowlands/irrigated
Days from planting to maturity:	115-120
Potential yield:	5-7 t/ha
Pest resistance:	—
Disease resistance:	Blight, RYMV
Other stresses:	Drought, salinity, iron toxicity, cold-resistant, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻

120 N - 46 P₂O₅ - 28 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or innoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 14-23-14
Application period:	At sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea
Application period:	Application in localized bands: 1 st application: 35-50 kg/ha 7-14 DAS or transplanting; 2 nd application: 65-100 kg/ha 55-60 DAS at panicular stage
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

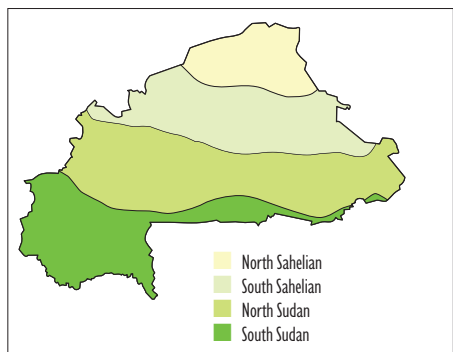
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇵

Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	5 t/ha every 2 years — when possible, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (GIPD), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (DI, MOGTEDO, TOUGAN, NIASAN, SONO, DÉDOUGOU, BAGRÉ)
Isohyet range 600-800 mm/year

RICE *Oryza sativa* ✓

Variety name:	FKR64 (synonym: TS2)
Local name:	—
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting after nursery; 40 kg/ha direct sowing
Spacing:	25 cm x 25 cm — in continuous rows with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	July, rainfed; Dec–Jan, irrigated
Production system:	Lowlands/irrigated
Days from planting to maturity:	115-120
Potential yield:	6.5-7 t/ha
Pest resistance:	—
Disease resistance:	Blight, RYMV
Other stresses:	Drought, salinity, iron toxicity, cold resistance, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻

120 N - 46 P₂O₅ - 28 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or innoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 14-23-14
Application period:	At sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea
Application period:	Application in localized bands: 1 st application: 35-50 kg/ha 7-14 DAS. 2 nd application: 65-100 kg/ha 55-60 DAS at panicular stage
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

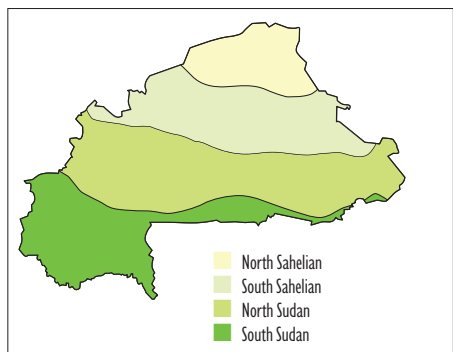
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇳

Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	When necessary, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (GIPD), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (DI, MOGTEDO, TOUGAN, NIASSAN, SONO, DEDOUGOU, MOGTEDO, BAGRÉ)

Isohyet range 600-800 mm/year

RICE *Oryza sativa* ✓

Variety name:	Orylux6
Local name:	—
Variety type:	Pure line
Quantity of seed:	20-30 kg/ha direct seeding ; 15-20 kg/ha transplanting after nursery
Spacing:	25 cm x 25 cm; in continuous lines with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	July, rainfed; irrigated, Dec–Jan
Production system:	Lowland/irrigated
Days from planting to maturity:	95-115
Potential yield:	4-6.5 t/ha
Pest resistance:	—
Disease resistance:	Blast, RYMV
Other stresses:	Rust, drought, salinity, iron toxicity, cold resistance, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Aromatic, well-suited for cooking

NUTRIENT RECOMMENDATIONS ↻

120 N - 46 P₂O₅ - 28 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha — every 2 years, if possible add one or more of the following: organic manure, compost, biofertilizers, biostimulants and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate: 200 kg/ha NPK 14-23-14
 Application period: At sowing or transplantation
 Comment: 4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate: 100-150 kg/ha Urea, applied in localised band
 Application period: First application: 35-50 kg/ha at 7-14 DAS or at
transplanting; second application: 65-100 kg/ha at
55-60 DAS at panicular stage
 Comment: 2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate: —
 Application period: —
 Comment: —



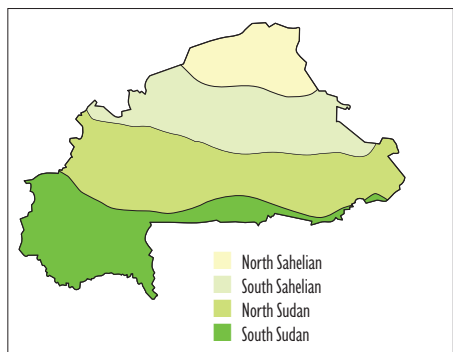
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	If possible, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (IPM), fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide use.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SAHELIAN (TOUGAN, NIASSAN, SONO, DÉDOUGOU, DI, MOGTEDO, BAGRÉ)

Isohyet range 600-800 mm/year

RICE *Oryza sativa* ✓

Variety name:	FKR60N
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-20 kg/ha transplanting after nursery; 20-30 kg/ha direct sowing
Spacing:	25 cm x 25 cm — in continuous rows with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	July, rainfed; Dec–Jan, irrigated
Production system:	Lowlands/irrigated
Days from planting to maturity:	115-120
Potential yield:	5-7 t/ha
Pest resistance:	—
Disease resistance:	Blight, RYMV
Other stresses:	Lodging, drought, salinity, iron toxicity, cold-resistant, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻

120 N - 46 P₂O₅ - 28 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 14-23-14
Application period:	At sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea
Application period:	Application in localized bands: 1 st application: 35-50 kg/ha 7-14 DAS or transplanting; 2 nd application: 65-100 kg/ha 55-60 DAS at panicular stage
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

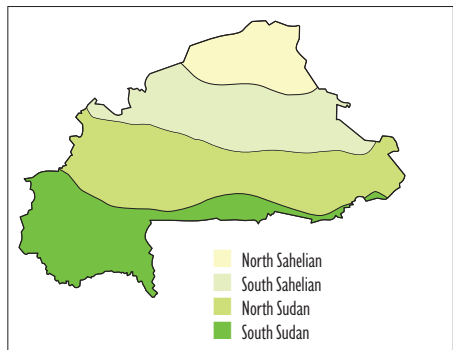
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇵

Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	5 t/ha every 2 years — when possible, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (GIPD), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SOUTH SUDAN (BANFORA, DOUN/SINDOU, BAZON, ORODARA, KARFIGUELA)

Isohyet range 800-1,200 mm/year

RICE *Oryza sativa* ✓

Variety name:	FKR19
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-20 kg/ha transplanting after nursery; 20-30 kg/ha direct sowing
Spacing:	25 cm x 25 cm — in continuous rows with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	July, rainfed; Dec–Jan, irrigated
Production system:	Rainfed/lowlands/irrigated
Days from planting to maturity:	95-115
Potential yield:	5-7 t/ha
Pest resistance:	—
Disease resistance:	Blight, RYMV
Other stresses:	Drought, salinity, iron toxicity, cold-resistant, lodging, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, aromatic, suitable for cooking

NUTRIENT RECOMMENDATIONS ↻

104.82 N - 36 P₂O₅ - 36 K₂O +12S +2B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 14-23-14
Application period:	At sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea
Application period:	Application in localized bands: 1 st application: 35-50 kg/ha 7-14 DAS or transplanting; 2 nd application: 65-100 kg/ha 55-60 DAS at panicular stage
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

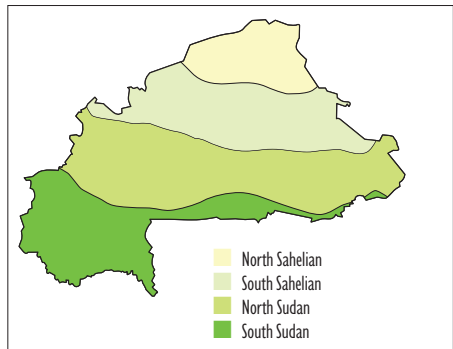
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇩

Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	5 t/ha every 2 years — when possible, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (GIPD), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SAHELIAN (TOUGAN, NIASSAN, SONO, DÉDOUGOU, DI, MOGTEDO, BAGRÉ)
Isohyet range 600-800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	FKR45N
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-20 kg/ha transplanting after nursery; 20-30 kg/ha direct sowing
Spacing:	25 cm x 25 cm — in continuous rows with 25 cm between rows
Grain/flesh color:	White
Planting/sowing time:	June-July
Production system:	Rainfed
Days from planting to maturity:	95-115
Potential yield:	3-4 t/ha
Pest resistance:	—
Disease resistance:	Blight, RYMV
Other stresses:	Lodging, drought, salinity, iron toxicity, cold-resistant, acidity
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, suitable for cooking, etc.

NUTRIENT RECOMMENDATIONS ↻	
120 N - 46 P ₂ O ₅ - 28 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years — if possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 14-23-14
Application period:	At sowing or transplanting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100-150 kg/ha Urea
Application period:	Application in localized bands: 1 st application: 35-50 kg/ha 7-14 DAS or transplanting; 2 nd application: 65-100 kg/ha 55-60 DAS at panicular stage
Comment:	2-3 bags x 50 kg/ha

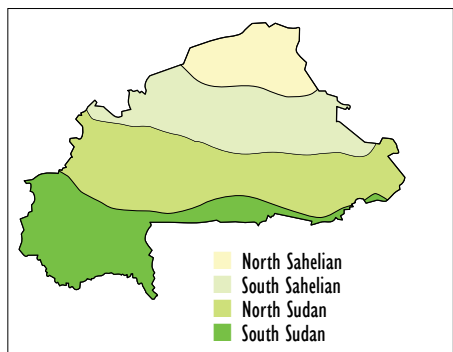
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇵	
Soil and water conservation techniques:	Ploughing, harrowing, compacting, and leveling.
Method of fertilizer application:	Localized (during direct seeding), broadcast, UDP, FDP, microdose, banded, or fertigation.
Amendments:	5 t/ha every 2 years — when possible, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water mobilization techniques.
Pest management:	Insect monitoring and pesticide application (GIPD), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL COUNTRY ZONES
Isohyet range 700-900 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	Kapelga
Local name:	
Variety type:	Pure line
Quantity of seed:	8-10 kg/ha
Spacing:	0.80 m x 0.40 m
Grain/flesh color:	White
Planting/sowing time:	15 June 15 July
Production system:	Rainfed
Days from planting to maturity:	90-95
Potential yield:	3 t/ha
Pest resistance:	<i>Striga hermontica</i>
Disease resistance:	
Other stresses:	
Nutritional quality:	
Other qualities:	Photoperiod-sensitive

NUTRIENT RECOMMENDATIONS

N - P₂O₅ - K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: Organic manure, compost, biofertilizers, biostimulants, inoculants; 5 t/ha every 2 years

FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 14-23-14
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	30-35 days after sowing (at panicular initiation)
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

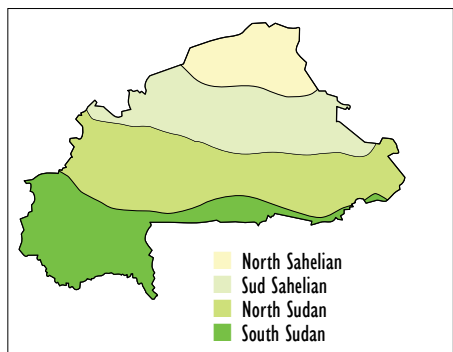
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Localised application, side placement
Amendments:	Add organic manure if available
Water management:	Bunding, tie-ridges, drainage
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide application
Cropping system:	Rotation (legumes, cotton)

SORGHUM/BURKINA FASO



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

NORTH SAHELIAN, SOUTH SAHELIAN, NORTH SUDAN (BOROMO, BOULSA, GAYERI)

Isohyet range 600-900 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	Sariaso 14
Local name:	
Variety type:	Pure line
Quantity of seed:	8-10 kg/ha
Spacing:	0.80 m x 0.40 m (permits mechanisation)
Grain/flesh color:	White spotted
Planting/sowing time:	15 May 15 June
Production system:	Rainfed/irrigated
Days from planting to maturity:	110-115
Potential yield:	5 t/ha
Pest resistance:	<i>Striga hermontica</i>
Disease resistance:	
Other stresses:	
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Photoperiod-sensitive

NUTRIENT RECOMMENDATIONS

N - P₂O₅ - K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: Organic fertilizer, compost, biofertilizers, biostimulants, inoculants; 5 t/ha every 2 years

FERTILIZER RECOMMENDATION ①

Application rate: 100 kg/ha NPK 14-23-14
Application period: 2 weeks after sowing
Comment: 2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate: 50 kg/ha Urea
Application period: 30-35 days after sowing (at panicular initiation)
Comment: 1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

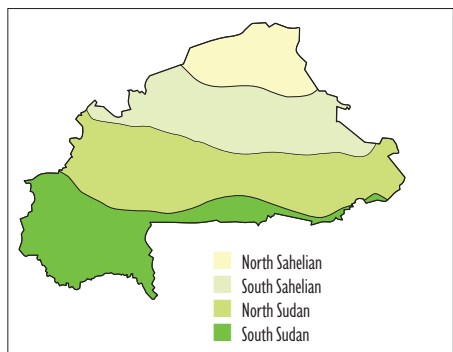
Application rate:
Application period:
Comment:

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Localised application, side placement
Amendments:	Add organic manure if available
Water management:	Bunding, tie-ridges, drainage
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide application
Cropping system:	Rotation (legumes, cotton)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
NORTH SAHELIAN, SOUTH SAHELIAN, NORTH SUDAN (BOROMO, BOULSA, GAYÉRI)
 Isohyet range 500-700 mm/year

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	CSM 63-E
Local name:	—
Variety type:	Pure line
Quantity of seed:	8 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	15 May–15 June
Production system:	Rainfed
Days from planting to maturity:	90-95
Potential yield:	2 t/ha
Pest resistance:	Striga
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Sensitive to day length (photoperiod)

NUTRIENT RECOMMENDATIONS ↩	
N - P ₂ O ₅ - K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha every 2 years – If possible, add organic fertilizer, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 14-23-14
Application period:	2 semaines après semis
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea
Application period:	30-35 DAS at panicular initiation
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope.
Method of fertilizer application:	Localised.
Amendments:	Add organic manure if available.
Water management:	Bunding, ridging, drainage.
Pest management:	Monitor for fall army worm and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes).

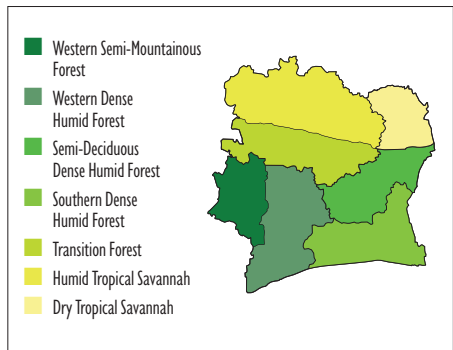


NOTES

CÔTE D IVOIRE



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITIONAL FOREST ZONE, HUMID TROPICAL SAVANNAH ZONE AND DRY TROPICAL SAVANNAH ZONE
 Isohyet range 1,000-1,400 mm/year

CASHEW <i>Anacardium occidentale</i> ✓	
Variety name:	LA X97
Local name:	Somon, Cajou (French)
Variety type:	Cultivated for cashew nut and fruit
Quantity of seed:	1,900 kg/ha
Spacing:	10 m x 10 m
Grain/flesh color:	Gray
Planting/sowing time:	June-July-August
Production system:	Cultivation associated with food crops until the spacing between the foliage of neighbouring trees is 1 m.
Days from planting to maturity:	1-2 years with a grafted plant, 3 years with seeds
Potential yield:	1,900 kg/ha
Pest resistance:	Tolerant to pests
Disease resistance:	Disease-tolerant
Other stresses:	Wind-tolerant
Nutritional quality:	Carbohydrates, proteins, lipids, minerals, and vitamins
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
—	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Organic manure: well dried cow manure 20 kg/hill, 1 month before planting



FERTILIZER RECOMMENDATION ①	
Application rate:	—
Application period:	—
Comment:	To date, there are no mineral fertilizer recommendations for cashew cultivation (research work is in progress).

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

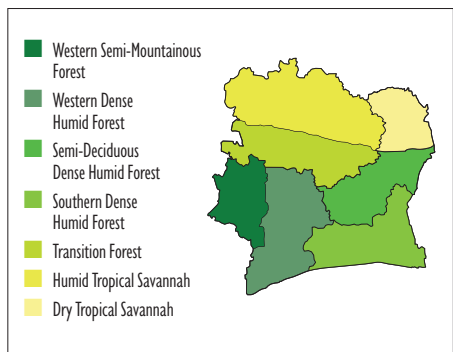


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	—
Method of fertilizer application:	—
Amendments:	1. Mineral amendments: tricalcium phosphate or dolomite or slag (1 kg/hole/1 month before planting). 2. Humus amendment: well dried cow dung (20 kg/hole/1 month before planting).
Water management:	Trees should not be planted on hydromorphic soils. Additional irrigation is recommended for young plants in dry periods.
Pest management:	Integrated and chemical control.
Weed control:	Manual and possibly chemical weeding.
Cropping system:	Mixed agriculture with food crops for the first five years and monoculture for the rest of the orchard's life.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITIONAL FOREST ZONE, HUMID TROPICAL SAVANNAH ZONE AND DRY TROPICAL SAVANNAH ZONE
Isohyet range 1,000-1,400 mm/year

CASHEW <i>Anacardium occidentale</i> ✓	
Variety name:	LA Z330
Local name:	Somon, Anacardier, Cajou (French)
Variety type:	Cultivated for cashew nut and fruit
Quantity of seed:	1,600 kg/ha
Spacing:	10 m x 10 m
Grain/flesh color:	Gray
Planting/sowing time:	June-July-August
Production system:	Cultivation associated with food crops until the spacing between the foliage of neighbouring trees is 1 m.
Days from planting to maturity:	1-2 years with a grafted plant, 3 years with seeds
Potential yield:	1,600 kg/ha
Pest resistance:	Tolerant to pests
Disease resistance:	Disease-tolerant
Other stresses:	Wind-tolerant
Nutritional quality:	Carbohydrates, proteins, lipids, minerals, and vitamins
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
—	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Organic manure: well dried cow manure 20 kg/hill, 1 month before planting



FERTILIZER RECOMMENDATION ①	
Application rate:	—
Application period:	—
Comment:	To date, there are no mineral fertilizer recommendations for cashew cultivation (research work is in progress).

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

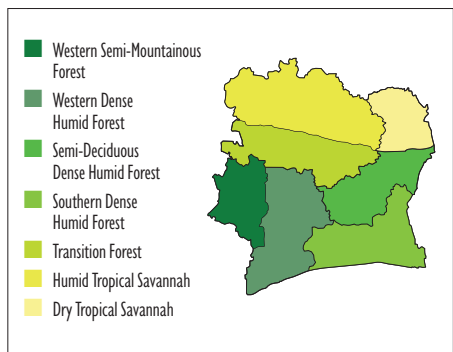


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	—
Method of fertilizer application:	—
Amendments:	1. Mineral amendments: tricalcium phosphate or dolomite or slag (1 kg/hole/1 month before planting). 2. Humus amendment: well dried cow dung (20 kg/hole/1 month before planting).
Water management:	Trees should not be planted on hydromorphic soils. Additional irrigation is recommended for young plants in dry periods.
Pest management:	Integrated and chemical control.
Weed control:	Manual and possibly chemical weeding.
Cropping system:	Mixed agriculture with food crops for the first five years and monoculture for the rest of the orchard's life.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITIONAL FOREST ZONE, HUMID TROPICAL SAVANNAH ZONE, AND DRY TROPICAL SAVANNAH ZONE
Isohyet range 1,000-1,400 mm/year

CASHEW <i>Anacardium occidentale</i> ✓	
Variety name:	LA X3264
Local name:	Somon, Anacardier, Cajou
Variety type:	Cultivated for cashew nut and fruit
Quantity of seed:	1,800 kg/ha
Spacing:	10 m x 10 m
Grain/flesh color:	Gray
Planting/sowing time:	June-July-August
Production system:	Cultivation associated with food crops until the spacing between the foliage of neighbouring trees is 1 m.
Days from planting to maturity:	1-2 years with a grafted plant, 3 years with seeds
Potential yield:	1,800 kg/ha
Pest resistance:	Tolerant to pests
Disease resistance:	Disease-tolerant
Other stresses:	Wind-tolerant
Nutritional quality:	Carbohydrates, proteins, lipids, minerals, and vitamins
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
	—

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Organic manure: well dried cow manure 20 kg/hill, 1 month before planting



FERTILIZER RECOMMENDATION ①	
Application rate:	—
Application period:	—
Comment:	To date, there are no mineral fertilizer recommendations for cashew cultivation (research work is in progress).

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

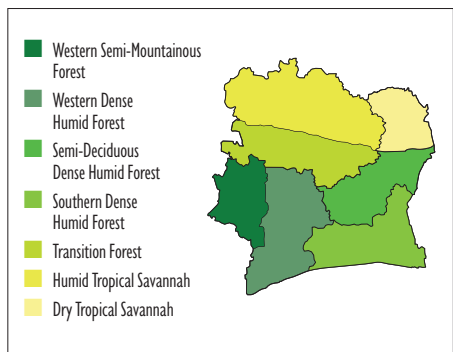


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	—
Method of fertilizer application:	—
Amendments:	1. Mineral amendments: tricalcium phosphate or dolomite or slag (1 kg/hole/1 month before planting). 2. Humus amendment: well dried cow dung (20 kg/hole/1 month before planting).
Water management:	Trees should not be planted on hydromorphic soils. Additional irrigation is recommended for young plants in dry periods.
Pest management:	Integrated and chemical control.
Weed control:	Manual and possibly chemical weeding.
Cropping system:	Mixed agriculture with food crops for the first five years and monoculture for the rest of the orchard's life.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITIONAL FOREST ZONE, HUMID TROPICAL SAVANNAH ZONE, AND DRY TROPICAL SAVANNAH ZONE
 Isohyet range 1,000-1,400 mm/year

CASHEW <i>Anacardium occidentale</i> ✓	
Variety name:	LA X4297
Local name:	Somon, Anacardier, Cajou
Variety type:	Cultivated for cashew nut and fruit
Quantity of seed:	1,900 kg/ha
Spacing:	10 m x 10 m
Grain/flesh color:	Gray
Planting/sowing time:	June-July-August
Production system:	Cultivation associated with food crops until the spacing between the foliage of neighbouring trees is 1 m.
Days from planting to maturity:	1-2 years with a grafted plant, 3 years with seeds
Potential yield:	1,900 kg/ha
Pest resistance:	Tolerant to pests
Disease resistance:	Disease-tolerant
Other stresses:	Wind-tolerant
Nutritional quality:	Carbohydrates, proteins, lipids, minerals, and vitamins
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
—	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Organic manure: well dried cow manure 20 kg/hill, 1 month before planting



FERTILIZER RECOMMENDATION ①	
Application rate:	—
Application period:	—
Comment:	To date, there are no mineral fertilizer recommendations for cashew cultivation (research work is in progress).

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

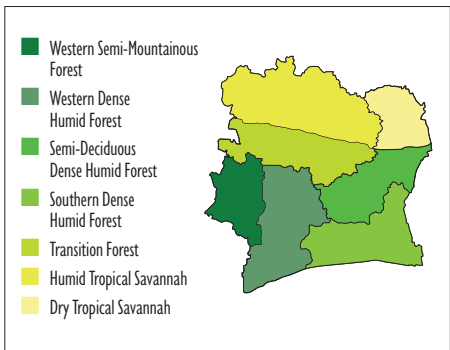


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	—
Method of fertilizer application:	—
Amendments:	1. Mineral amendments: tricalcium phosphate or dolomite or slag (1 kg/hole/1 month before planting). 2. Humus amendment: well dried cow dung (20 kg/hole/1 month before planting).
Water management:	Trees should not be planted on hydromorphic soils. Additional irrigation is recommended for young plants in dry periods.
Pest management:	Integrated and chemical control.
Weed control:	Manual and possibly chemical weeding.
Cropping system:	Mixed agriculture with food crops for the first five years and monoculture for the rest of the orchard's life.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 1,000-2,600 mm/year

CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Bocou 1 (synonym CNRA-Man 002)
Local name:	—
Variety type:	Controlled crossbreeding
Quantity of seed:	10,000 ou 12,500 kg/ha
Spacing:	1 m x 1 m or 1 m x 0.8 m
Grain/flesh color:	White
Planting/sowing time:	March-September
Production system:	—
Days from planting to maturity:	More than 12 months
Potential yield:	34 t/ha — Yield estimated from the average of several yields over a 3-year period
Pest resistance:	Very sensitive to acarids
Disease resistance:	Susceptible to viruses and root rots
Other stresses:	Weeds
Nutritional quality:	Rich in starches
Other qualities:	Leaves are flavorful for eating

NUTRIENT RECOMMENDATIONS ↻	
	45 N - 45 P ₂ O ₅ - 45 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	10-15 t/ha during soil preparation; recommended for tuberous root and seed production.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 15-15-15
Application period:	2 months after planting
Comment:	6 bags x 50 kg/ha; reserved for seed production

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

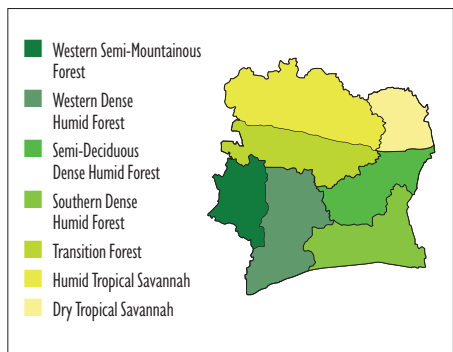


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Zero tillage; level planting if soft soil
Method of fertilizer application:	Around the foot or base of the plant
Amendments:	Dolomite 100 kg/ha during soil preparation
Water management:	Plant during the rainy season
Pest management:	Use clean, healthy cuttings
Weed control:	Weeding on demand
Cropping system:	On its own or in rotation with other crops





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Bocou 2 (synonym CNRA-Man 002)
Local name:	Bocou2
Variety type:	Controlled crossbreeding
Quantity of seed:	10,000 ou 15,625 kg/ha
Spacing:	1 m x 1 m, 1 m x 0.8 m or 0.8 m x 0.8 m
Grain/flesh color:	Yellow
Planting/sowing time:	March-September
Production system:	—
Days from planting to maturity:	More than 11 months
Potential yield:	32 t/ha – Yield estimated from the average of several yields over a 3-year period
Pest resistance:	—
Disease resistance:	Susceptible to viruses and root rots
Other stresses:	Weeds
Nutritional quality:	Rich in energy and pro-vitamin A
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
45 N - 45 P ₂ O ₅ - 45 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	10-15 t/ha during soil preparation; recommended for tuberous root and seed production.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 15-15-15
Application period:	2 months after planting
Comment:	6 bags x 50 kg/ha; reserved for seed production

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

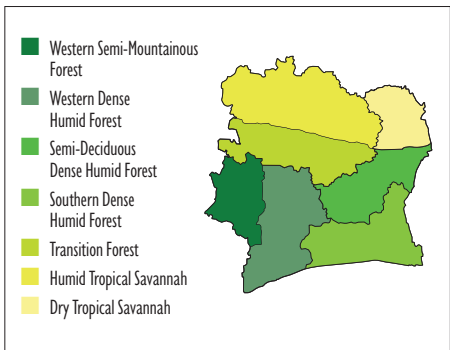


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Zero tillage; level planting if soft soil
Method of fertilizer application:	Around the foot or base of the plant
Amendments:	Dolomite 100 kg/ha during soil preparation
Water management:	Plant during the rainy season
Pest management:	Use clean, healthy cuttings
Weed control:	Weeding on demand
Cropping system:	On its own or in rotation with other crops





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 1,000-2,600 mm/year

CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Bocou 3 (synonym CNRA-Man 003)
Local name:	Bocou2
Variety type:	OPV
Quantity of seed:	10,000 ou 15,625 kg/ha
Spacing:	1 m x 1 m, 1 m x 0.8 m or 0.8 m x 0.8 m
Grain/flesh color:	Creamy white
Planting/sowing time:	March-September
Production system:	—
Days from planting to maturity:	More than 12 months
Potential yield:	32 t/ha — Yield estimated from the average of several yields over a 3-year period
Pest resistance:	—
Disease resistance:	Susceptible to viruses and root rots
Other stresses:	Weeds
Nutritional quality:	Rich in starches
Other qualities:	—

NUTRIENT RECOMMENDATIONS

45 N - 45 P₂O₅ - 45 K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 10-15 t/ha during soil preparation; recommended for tuberous root and seed production.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 15-15-15
Application period:	2 months after planting
Comment:	6 bags x 50 kg/ha; reserved for seed production

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

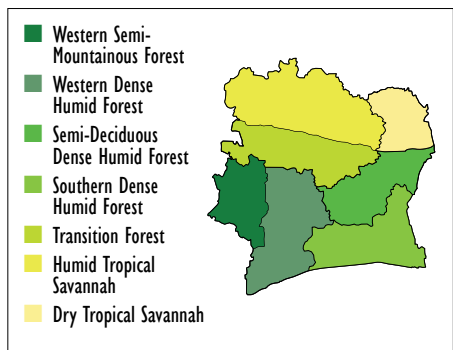
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Zero tillage; level planting if soft soil.
Method of fertilizer application:	Around the foot or base of the plant.
Amendments:	Dolomite 100 kg/ha during soil preparation.
Water management:	Plant during the rainy season.
Pest management:	Use clean, healthy cuttings.
Weed control:	Weeding on demand.
Cropping system:	On its own or in rotation with other crops.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

TRANSITION FOREST ZONE, WESTERN DENSE MOIST FOREST ZONE, WESTERN SEMI-MOUNTAINOUS FOREST ZONE

Isohyet range 1200-1800 mm/year (bimodal) Transition Forest zone, 1400-2800 mm/year Western Dense Moist Forest zone, 1600-2000 mm/year Western Semi-Mountainous Forest zone

COCOA *Theobroma cacao*



Variety name:	Mercedes
Local name:	Mercedes (name given by producers)
Variety type:	Hybrid
Quantity of seed:	50 ripe pods for approximately 1,500 plants in the nursery
Spacing:	2.5 m between plants and 3 m between rows (1,333 trees/ha)
Grain/flesh color:	Brown
Planting/sowing time:	May June
Production system:	Rainfed
Days from planting to maturity:	2-3 years to start production and from 12 to 15 years to reach optimal production
Potential yield:	2.2-3 t/ha/an
Pest resistance:	3 insecticide treatments required per year from June
Disease resistance:	3 treatments against diseases
Other stresses:	Sun, excessive rain, pod rot, soil acidity
Nutritional quality:	% fat content
Other qualities:	Quality, cocoa bean weight and precocious character (early entry into production in 2-3 years)

NUTRIENT RECOMMENDATIONS



0 N - 115,5 P₂O₅ - 22,5 K₂O

ORGANIC FERTILIZER RECOMMENDATION



Application rate: 2.5 t/ha in the planting holes at placement and in circles, 2 times/year in April and August each year

FERTILIZER RECOMMENDATION



Application rate: 250 kg/ha NPK 0-23-19 (East Central zone)
 Application period: 2 times each year (East Central and West zones)
 Comment: 5 bags x 50 kg/ha (East Central and West zones)

FERTILIZER RECOMMENDATION



Application rate: 250 kg/ha NPK 0-18-9 (West zone)
 Application period: 1 application in August after planting, and 2 more applications in April and August the following years (East Central and West zones)
 Comment: 5 bags x 50 kg/ha (East Central and West zones)

FERTILIZER RECOMMENDATION



Application rate: 150 kg/ha (TSP 45%)
 Application period: 1 application in August after planting, and 2 more times in April and August the following years
 Comment: 3 bags x 50 kg/ha (zones Centre-Est et Ouest)

FERTILIZER RECOMMENDATION



Application rate: 250 kg/ha Calcium nitrate and boron
 Application period: 2 times per year, in July and August
 Comment: 5 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

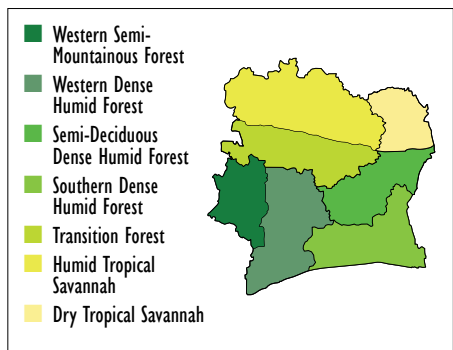


Soil and water conservation techniques:

Method of fertilizer application:	At the foot of the plants in the crowns
Amendments:	Compost enriched with phosphorus
Water management:	
Pest management:	3 insecticide treatments required each year from June (remove weeds, parasitic plants, and rotten pods)
Weed control:	Manual weeding and other plantation maintenance tasks
Cropping system:	Monoculture; association with plantain in planting, and with cassava, leguminous trees, and various local trees



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

TRANSITION FOREST ZONE, WESTERN DENSE HUMID FOREST ZONE, WESTERN SEMI-MOUNTAINOUS FOREST ZONE

Isohyet range 1200-1800 mm/year Transition Forest zone, 1400-2800 mm/year Western Dense Humid Forest zone, 1600-2000 mm/year Western Semi-Mountainous Forest zone

CAFE *Coffea arabica* ✓

Variety name:	Robusta
Local name:	
Variety type:	Hybrid
Quantity of seed:	500 g/ha
Spacing:	2.5 m between plants and 3 m between rows, or 1.7 m between plants and 3 m between rows (1,333-1,961 trees/ha)
Grain/flesh color:	Brown
Planting/sowing time:	May June: plant between May and Juin, once the rainy season is well underway
Production system:	Rainfed
Days from planting to maturity:	From 1 year
Potential yield:	2.5-3 t/ha/an
Pest resistance:	3 insecticide treatments required per year, from June
Disease resistance:	3 treatments against diseases
Other stresses:	Sun, excessive rain
Nutritional quality:	Caffeine (% MS)
Other qualities:	Bean weight (g per 100 beans)

NUTRIENT RECOMMENDATIONS

110 N - 55 P₂O₅ - 27,5 K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate:

FERTILIZER RECOMMENDATION ①

Application rate:	550 kg/ha NPK 20-10-5
Application period:	2 times 200 g/trees in March-April and August-September
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

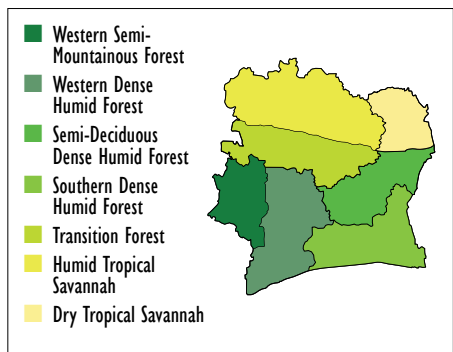
Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	
Method of fertilizer application:	Around the tree trunk and in the crowns: Fertilizer application is done in March-April and September. Apply a crown around the base of the tree trunk. The radius of the crown increases with age: 30 to 60 cm for young plants and 60 to 100 cm for adult plants.
Amendments:	
Water management:	
Pest management:	3 insecticides treatments required per year from June
Weed control:	Manual weeding and other plantation maintenance tasks: manual weeding 4-6 passages per year and cutting back trees (every 5 harvests) ; manual weeding (with machete): 5-6 times per year (alternate manual weeding with chemical weeding); also mulch young plants with cut grass from manual weeding
Cropping system:	Monocrop: associating food crops to young or new coffee trees is recommended (this allows better maintenance and provides income to the farmers before the coffee trees go into production); legumes too (Flemingia, Glyricidia, etc.) can be associated with the coffee trees (they are kept pruned and used to mulch young coffee trees)



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

WESTERN SEMI-MOUNTAINOUS FOREST ZONE (MAN, TOULEPLEU, DANANE, BLOLEQUIN, BIANKOUA, BANGOLO, DUEKOUÉ)

Isohyet range 1000-2000 mm/year (bimodal)

CAFE *Coffea arabica*



Variety name:	Arabusta Coffee 6300 (synonym CNRA-CAF Ara 05)
Local name:	
Variety type:	Clone
Quantity of seed:	1,500 bundles/ha
Spacing:	1,333 plants/ha
Grain/flesh color:	Green (coffee bean) ; Red pod (cherry red at maturity)
Planting/sowing time:	May June
Production system:	
Days from planting to maturity:	2 years
Potential yield:	1,496 kg/ha
Pest resistance:	Treatment on demand
Disease resistance:	Resistant to rust
Other stresses:	
Nutritional quality:	Yes
Other qualities:	

NUTRIENT RECOMMENDATIONS



181 N - 33 P₂O₅ - 110 K₂O +22 MgO et
 185 N - 35 P₂O₅ - 17,5 K₂O

ORGANIC FERTILIZER RECOMMENDATION



Application rate:

FERTILIZER RECOMMENDATION



Application rate:	550 kg/ha NPK 12-6-20 + 4 MgO
Application period:	March-April and September-October
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	350 kg/ha NPK 20-10-5
Application period:	March-April and September-October
Comment:	7 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	250 kg/ha Urea 46%
Application period:	March-April and September-October
Comment:	5 bags x 50 kg/ha

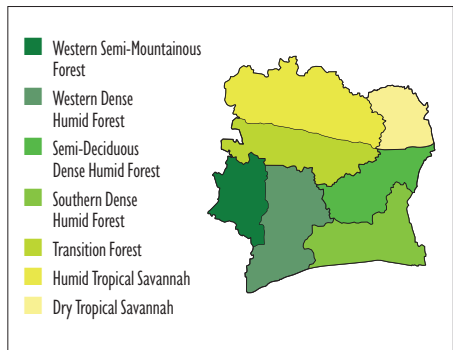
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	
Method of fertilizer application:	Broadcast in a crown 30 cm - 1.5 m around the base of the trunk
Amendments:	
Water management:	
Pest management:	
Weed control:	
Cropping system:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
WESTERN SEMI-MOUNTAINOUS FOREST ZONE
Isohyet range 1,000-2,000 mm/year

COFFEE <i>Coffea arabica</i> ✓	
Variety name:	Café Arabusta 6300 (synonym: CNRA-Caf Ara 05)
Local name:	—
Variety type:	Clone
Quantity of seed:	1,500 cuttings per hectare (1,333 plants/ha)
Spacing:	—
Grain/flesh color:	Green (coffee beans) or red (ripe cherries)
Planting/sowing time:	May-June
Production system:	—
Days from planting to maturity:	2 years
Potential yield:	1,496 kg/ha
Pest resistance:	No, treatment as needed
Disease resistance:	Rust resistant
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
181 N +33 P ₂ O ₅ +110 K ₂ O +22 MgO (Zone Ouest) et 185N +35 P ₂ O ₅ +17.5 K ₂ O (Zone Centre-Est)	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	550 kg/ha NPK 12-6-20 +4 MgO (West Zone)
Application period:	March-April and September-October
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	350 kg/ha NPK 20-10-5 (West Zone et Center-East)
Application period:	March-April and September-October
Comment:	7 bags x 50 kg/ha

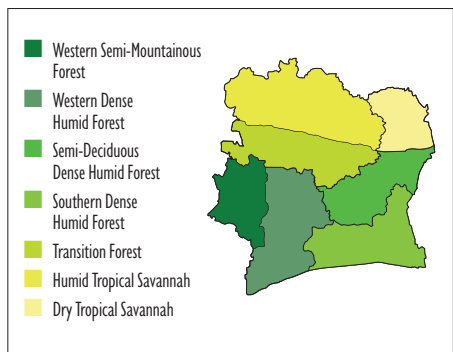
FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha Urea 46% (Zone Ouest et Centre-Est)
Application period:	March-April and September-October
Comment:	5 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	—
Method of fertilizer application:	Spreading in a band (30 cm - 1.5 m) around the foot of the tree
Amendments:	—
Water management:	—
Pest management:	—
Weed control:	—
Cropping system:	—





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ALL ZONES EXCEPT HUMID AND DRY TROPICAL SAVANNAHS

Isohyet range 800-2,800 mm/year, bimodal: Center-East Zone 800-1,400 and 1,200-1,600; West Zone 1,200-1,600 and 1,400-2,800

COFFEE <i>Coffea arabica</i> ✓	
Variety name:	Robusta Coffee H80
Local name:	—
Variety type:	Hybrid
Quantity of seed:	500 g/ha
Spacing:	1,333 stocks/ha
Grain/flesh color:	Brown
Planting/sowing time:	May–June, once the rainy season is well underway
Production system:	Rainfed
Days from planting to maturity:	From 1 year old
Potential yield:	2.5-3 t/ha/year
Pest resistance:	3 insecticide treatments required per year starting in June
Disease resistance:	3 treatments against diseases
Other stresses:	Sunshine, excessive rain
Nutritional quality:	Caffeine (%MS)
Other qualities:	Granulometry (g per 100 beans)

NUTRIENT RECOMMENDATIONS ↻	
Western zones:	181 N - 33 P ₂ O ₅ - 110 K ₂ O
Center-East zone:	195 N - 40 P ₂ O ₅ - 20 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	550 kg/ha NPK 12-6-20 +4 MgO (West Zone)
Application period:	2 x 200 g per plant in March-April and August-September (from the first cycle)
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha NPK 20-10-5 (Center-East Zone)
Application period:	2 x 150 g per plant (after transplanting) in March-April and August-September
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha Urea 46% (West and Center-East Zones)
Application period:	2 x 80 g per plant (the first 7 years in March-April and August-September)
Comment:	5 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques: Young plantation: manual cleaning only (with a machete) 6 times a year. Mulch the plants with the cleared weeds.

Method of fertilizer application: Spread the fertilizer in a ring around the foot of the trunk within the tree crown:

- Use a dose of 50 g of fertilizer per plant. The fertilizer types differ with the locality.
- The fertilizer is spread in a crown around the plant in a radius of 30 cm to 150 cm depending on the age of the plantation. Note the radius of the crown increases with age: 30 to 60 cm for young plants and 60 to 100 cm for adult plants.
- For first year plantations, spreading is done in July (May-June plantation) or in September (July-August plantation).
- For the second and later years, fertilizing is done in March-April and in September.

Amendments: —

Water management: —

Pest management: 3 insecticide treatments needed per year, starting in June.

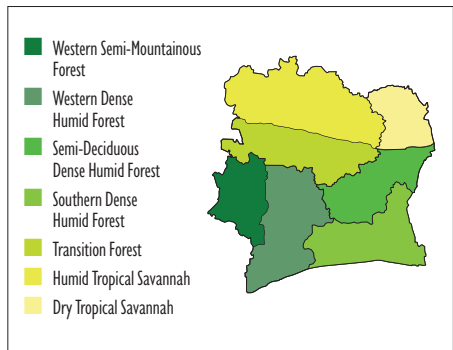
Weed control: Manual weeding and other maintenance tasks:

- Manual weeding with a machete: 4 to 6 passes/year, and pruning every 5 harvests.
- Alternate with chemical weeding.
- Mulch the young plants with the vegetation cut during the manual weeding.

Cropping system: Monoculture, but the association of food crops with young coffee trees or pruned coffee trees is recommended. It allows for better maintenance and provides an income for the farmers before the coffee trees come into production. Legumes (*Flemingia*, *Gliricidia*, etc.) can be associated with coffee trees. They are pruned and used to mulch young coffee trees.



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

WESTERN SEMI-MOUNTAINOUS FOREST ZONE (MAN, TOULEPLEU, DANANÉ, ISOHYET RANGE 1,000-2,000 mm/year)
BLOLÉQUIN, BIANKOUMA, BANGOLO, DUÉKOUÉ)

COFFEE <i>Coffea arabica</i> ✓	
Variety name:	Café Arabusta 1313 (synonym: CNRA-Caf Ara 02)
Local name:	—
Variety type:	Clone
Quantity of seed:	1,500 cuttings per hectare (1,333 plants/ha)
Spacing:	—
Grain/flesh color:	Green (coffee beans) or red (ripe cherries)
Planting/sowing time:	May-June
Production system:	—
Days from planting to maturity:	2 years
Potential yield:	1,400 kg/ha
Pest resistance:	No, treatment as needed
Disease resistance:	Rust tolerant
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
181 N +33 P ₂ O ₅ +110 K ₂ O +22 MgO (Zone Ouest) et 185N +35 P ₂ O ₅ +17.5 K ₂ O (Zone Centre-Est)	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	550 kg/ha NPK 12-6-20 +4 MgO (West Zone)
Application period:	March-April and September-October
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	350 kg/ha NPK 20-10-5 (West Zone & Center-East)
Application period:	March-April and September-October
Comment:	7 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha Urea 46% (Zone Ouest et Centre-Est)
Application period:	March-April and September-October
Comment:	5 bags x 50 kg/ha

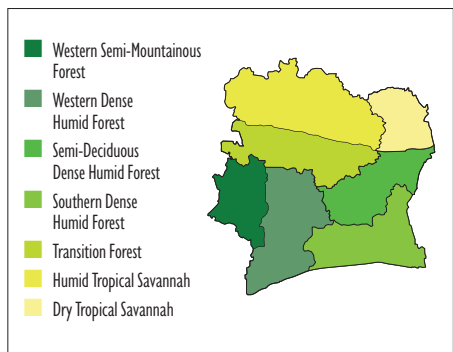
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	—
Method of fertilizer application:	Spreading in a band (30 cm - 1.5 m) around the foot of the tree
Amendments:	—
Water management:	—
Pest management:	—
Weed control:	—
Cropping system:	—





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

WESTERN SEMI-MOUNTAINOUS FOREST ZONE (MAN, TOULEPLEU, DANANÉ, ISOHYET RANGE 1,000-2,000 mm/year, BLOLÉQUIN, BIANKOUMA, BANGOLO, DUÉKOUÉ)

COFFEE <i>Coffea arabica</i> ✓	
Variety name:	Café Arabusta 7001 (synonym: CNRA-Caf Ara 06)
Local name:	—
Variety type:	Clone
Quantity of seed:	1,500 cuttings per hectare (1,333 plants/ha)
Spacing:	—
Grain/flesh color:	Green (coffee beans) or red (ripe cherries)
Planting/sowing time:	May-June
Production system:	—
Days from planting to maturity:	2 years
Potential yield:	1,100 kg/ha
Pest resistance:	Treatment as needed
Disease resistance:	Rust resistant
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
181 N +33 P ₂ O ₅ +110 K ₂ O +22 MgO (Zone Ouest) et 185N +35 P ₂ O ₅ +17.5 K ₂ O (Zone Centre-Est)	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	550 kg/ha NPK 12-6-20 +4 MgO (West Zone)
Application period:	March-April and September-October
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	350 kg/ha NPK 20-10-5 (West Zone, Center-East)
Application period:	March-April and September-October
Comment:	7 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha Urea 46% (West Zone, Center-East)
Application period:	March-April and September-October
Comment:	5 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

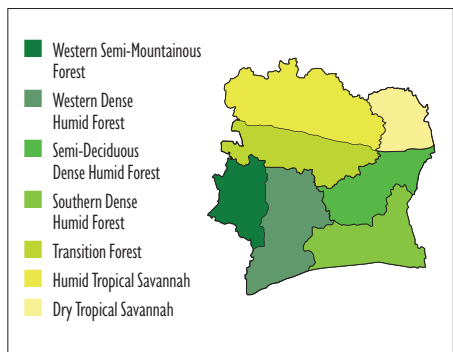
Soil and water conservation techniques:	—
Method of fertilizer application:	Spreading in a band (30 cm - 1.5 m) around the foot of the tree
Amendments:	—
Water management:	—
Pest management:	—
Weed control:	—
Cropping system:	—





WEST AFRICA AGRO-ECOLOGICAL ZONE

HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ALL ZONES EXCEPT TROPICAL SAVANNAH

Isohyet range 1200-1800, 1600-2000, and 1400-2800 mm/year – West Zone; 800-1400 and 1200-1600 mm/year – Center-East Zone

COFFEE <i>Coffea arabica</i> ✓	
Variety name:	Robusta Coffee H81
Local name:	—
Variety type:	Hybrid
Quantity of seed:	500 g per hectare (1,333 plants/ha)
Spacing:	—
Grain/flesh color:	Marron
Planting/sowing time:	May-June (once the rainy season is well underway)
Production system:	Rainfed
Days from planting to maturity:	From 1 year
Potential yield:	2.5-3 t/ha/yr
Pest resistance:	3 insecticide treatments needed per year starting from June
Disease resistance:	3 treatments against diseases
Other stresses:	Too much sun or excessive rain
Nutritional quality:	Caffeine (% MS)
Other qualities:	Granulometry (g per 100 beans)

NUTRIENT RECOMMENDATIONS ↻	
181 N - 33 P ₂ O ₅ - 110 K ₂ O (Zone Ouest) and 195N - 40 P ₂ O ₅ - 20 K ₂ O (Zone Centre-Est)	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	550 kg/ha NPK 12-6-20 +4 MgO (West Zone)
Application period:	Mar-Apr, Sep-Oct: 2 x 200 g/plant (in first cycle)
Comment:	11 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	350 kg/ha NPK 20-10-5 (West Zone, Center-East)
Application period:	Mar-Apr, Sep-Oct: 2 x 150 g/plant (after pruning)
Comment:	7 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha Urea 46% (West Zone, Center-East)
Application period:	Mar-Apr, Sep-Oct: 2 x 80 g/plant (the first 7 years)
Comment:	5 bags x 50 kg/ha

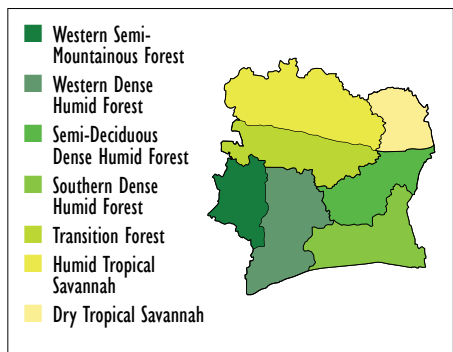
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Young plantation: manual cleaning (with a machete) only, 6 times a year; mulch plants with material from the cleaning.
Method of fertilizer application:	The contribution takes place in March-April and in September. Spread in a crown around the plant. The radius of the crown increases with age: 30 to 60 cm for young plants and 60 to 100 cm for adult plants. The mineral fertilizer is spread in a crown around the plant in a radius of 30 cm to 1.5 m depending on the age of the plantation. In the year of plantation, the spreading is done in July (May-June plantation) or in September (July-August plantation); contribution of 50 g per plant. In year n+1 and for the other years it is done in March-April and in September. The types of fertilizers differ with the locality.
Amendments:	—
Water management:	—
Pest management:	3 insecticide treatments required/year starting in June.
Weed control:	Manual weeding and other maintenance tasks (Manual weeding: 4 to 6 passes/year and pruning: every 5 harvests). Manual weeding (with a machete): 5 or 6 passes per year (alternate manual and chemical weeding). Also mulch the young plants with the grass mowed during the weeding.
Cropping system:	—





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
FOREST TRANSITION ZONE
Isohyet range 1200-1800 mm/year (monomodal)

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	Y616 B
Local name:	
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted) and 50 kg/ha (with fiber)
Spacing:	Line spacing 80 cm and distance between holes 20-30 cm (45,664 plants/ha)
Grain/flesh color:	Brown (delinte) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (44%)
Pest resistance:	6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS ↻	
53 N - 360 P ₂ O ₅ - 30 K ₂ O + 12 S + 3 B	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha (NPKSB 15-15-15+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

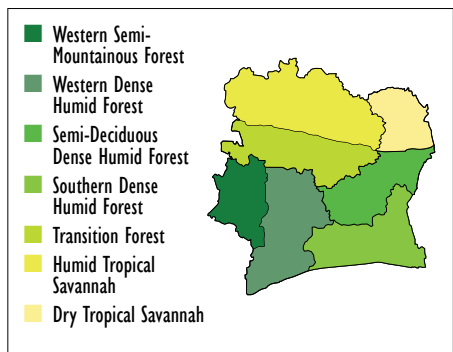
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha (KCl 60%)
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, grass strips, minimum/zero tillage and ridging (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	Side dressing or in hill NPK (side dressing) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues (according to availability and affordability)
Water management:	No cotton doesn't like excess water
Pest management:	At least 8 insecticide treatments; for early sowing increase the number of treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	W766 C
Local name:	
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted) et 50 kg/ha (with fiber)
Spacing:	
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 Mai 20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (44%)
Pest resistance:	6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seed rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS ↻	
53 N - 360 P ₂ O ₅ - 30 K ₂ O + 12 S + 3 B	
<i>(plan for K in seed production)</i>	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha (NPKSB 15-15-15+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

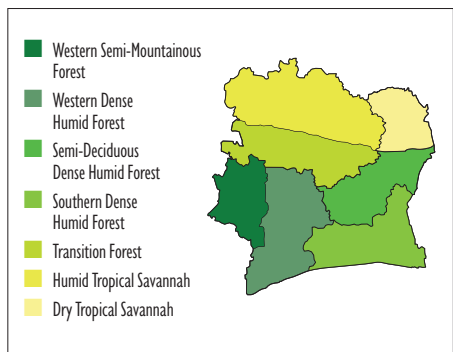
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha (KCl 60%)
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, grass cover, minimum/zero tillage, and ridging (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	Side dressing or in hill NPK (side dressing) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues (according to availability and affordability)
Water management:	No cotton doesn't like excess water
Pest management:	At least 8 insecticide treatments; for early sowing increase the number of treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITIONAL FOREST ZONE, HUMID DENSE FOREST ZONE, HUMID TROPICAL SAVANNAH ZONE
Isohyet range 1,000-2,000 mm/year

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	Gouassou FUS 1
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted) and 50 kg/ha (with fiber)
Spacing:	83,500 (Pre-Forest Zone) and 83,500 to 125,000 plants/ha (Savannah Zone)
Grain/flesh color:	Brown (delinted) and grey (with fiber)
Planting/sowing time:	June-July
Production system:	Rainfed
Days from planting to maturity:	100-120 DAP, early or late sowing
Potential yield:	4 t/ha — Cottonseed (4 t/ha) and fiber yield (44%)
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought and flooding
Nutritional quality:	Seeds rich in oil (18-24% d'huile)
Other qualities:	Livestock feed (meal), fiber quality (length, micron, tenacity, and grade)

NUTRIENT RECOMMENDATIONS ↻	
53 N - 360 P ₂ O ₅ - 30 K ₂ O +12 S +3 B	(provide for K in seed production)

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost (every 2 to 3 years)



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPKSB 15-15-15 +6 S +1 B
Application period:	15-20 DAP
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea 46%
Application period:	40 DAP
Comment:	1 bags x 50 kg/ha

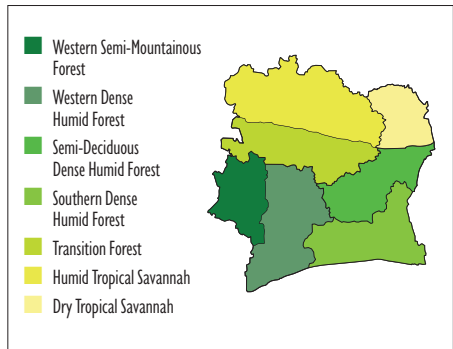
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha KCl 60%
Application period:	15-20 DAP
Comment:	1 sac x 50 kg/ha (seed production) en melange avec NPK

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, grass strips, minimum/zero tillage, and ridging, depending on the type and occupation of the soil and the rainfall.
Method of fertilizer application:	NPK (side-dressing) and urea (staking) followed by plowing.
Amendments:	Manure, compost, and crop residues, depending on availability and costs.
Water management:	Cotton does not like excess water.
Pest management:	At least 8 insecticide treatments, fungal seed treatments. For early sowing, increase the number of treatments.
Weed control:	Weeding and herbicide treatments (total, pre-emergence and post-emergence), Weeding and treating as needed.
Cropping system:	Cotton-cereal rotations, agriculture-livestock integration, recycling of crop residues and animal housing. Integration of agriculture and livestock is an essential requirement for cotton production.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

TRANSITION FOREST, WESTERN DENSE HUMID FOREST, HUMID TROPICAL SAVANNAH
Isohyet range 1,000-2,000 mm/year, monomodal and bimodal

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	Y 331 BLT
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted), 50 kg/ha (with fiber)
Spacing:	Pre-forest zone: 83,500 plants/ha Savannah zone: 125,000 plants/ha
Grain/flesh color:	Brown (delinted), gray (with fiber)
Planting/sowing time:	May–July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed 4 t/ha and fiber yield 45.2%
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought and flooding
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Livestock feed (cake); fiber quality: length, microns, tenacity and grade

NUTRIENT RECOMMENDATIONS ↻	
53 N - 360 P ₂ O ₅ - 30 K ₂ O +12 S +3 B	(provide extra K for seed production)

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost every 2-3 years.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPKSB 15-15-15 +6 S +1 B
Application period:	15-20 DAS
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea 46%
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

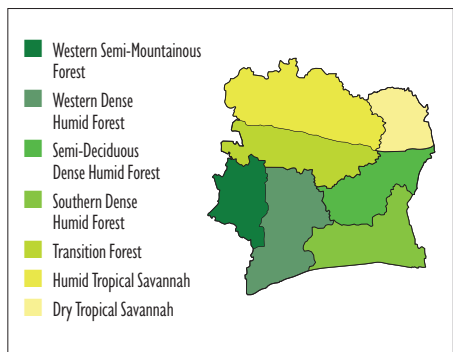
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha KCl 60%
Application period:	15-20 JAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Mulching, grass strips, minimum/zero tillage and ridging, depending on soil type/usage and rainfall.
Method of fertilizer application:	NPK (side-dressing) and urea (staking) followed by burial.
Amendments:	Manure, compost, and/or crop residues depending on availability and costs.
Water management:	Cotton does not like excess water.
Pest management:	At least 8 insecticide treatments, and fungal seed treatments. For early planting, increase the number of treatments.
Weed control:	Weeding and herbicide treatments (total, pre-emergence and post-emergence) as needed.
Cropping system:	Cotton-cereal rotations, agriculture-livestock integration, recycling of crop residues and animal housing. Integration of agriculture and livestock is an essential requirement for cotton production.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
TRANSITION FOREST, DENSE HUMID FOREST, HUMID TROPICAL SAVANNAH
Isohyet range 1,000-2,000 mm/year, monomodal and bimodal

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	SICAMA VIR 1
Local name:	—
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted), 50 kg/ha (with fiber)
Spacing:	Pre-forest zone: 83,500 plants/ha Savannah zone: 125,000 plants/ha
Grain/flesh color:	Brown (delinted), gray (with fiber)
Planting/sowing time:	June–July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed 4 t/ha and fiber yield 45.0%
Pest resistance:	6 insecticide treatments needed.
Disease resistance:	At least 8 insecticide treatments; fungicide treatment for seeds. For early planting, increase the number of treatments.
Other stresses:	Drought and flooding
Nutritional quality:	Seeds rich in oil (18-24% oil)
Other qualities:	Livestock feed (cake); fiber quality: length, microns, tenacity and grade

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	53 N - 360 P ₂ O ₅ - 30 K ₂ O +12 S +3 B (provide extra K for seed production)

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost every 2-3 years.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPKSB 15-15-15 +6 S +1 B
Application period:	15-20 DAS
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea 46%
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

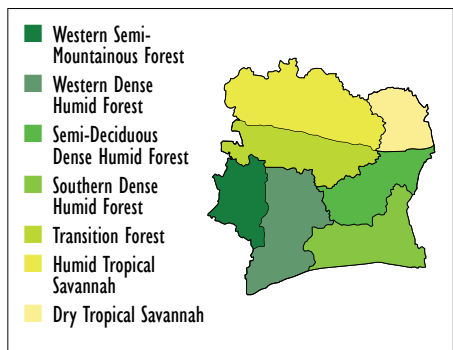
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha KCl 60%
Application period:	15-20 JAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Mulching, grass strips, minimum/zero tillage and ridging, depending on soil type/usage and rainfall.
Method of fertilizer application:	NPK (side-dressing) and urea (staking) followed by burial.
Amendments:	Manure, compost, and/or crop residues depending on availability and costs.
Water management:	Cotton does not like excess water.
Pest management:	At least 8 insecticide treatments, and fungal seed treatments. For early planting, increase the number of treatments.
Weed control:	Weeding and herbicide treatments (total, pre-emergence and post-emergence) as needed.
Cropping system:	Cotton-cereal rotations, agriculture-livestock integration, recycling of crop residues and animal housing. Integration of agriculture and livestock is an essential requirement for cotton production.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
FOREST TRANSITION ZONE (TOUBA, SEGUELA, MANKONO, KATIOLA, DABAKALA)
 Isohyet range 1000-1400 mm/year (monomodal + bimodal)

MAIZE *Zea mays*

Variety name:	Violet de Katiola (4)
Local name:	
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	
Grain/flesh color:	Purple
Planting/sowing time:	15 June 15 July (Savannah zone) 15 April 15 May (Intermediate zone)
Production system:	Rainfed
Days from planting to maturity:	105-110
Potential yield:	3 t/ha
Pest resistance:	
Disease resistance:	Streak resistant
Other stresses:	Lodging
Nutritional quality:	Rich in anthocyanins
Other qualities:	Sweet flavor, rich in polyphenols

NUTRIENT RECOMMENDATIONS

For medium-fertility soils:	62 N - 15 P ₂ O ₅ - 15 K ₂ O à 91,5 N - 22,5 P ₂ O ₅ - 22,5 K ₂ O
For poor soils:	76 N - 30 P ₂ O ₅ - 30 K ₂ O à 106,5 N - 37,5 P ₂ O ₅ - 37,5 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION

Application rate:	Organic manure
-------------------	----------------

FERTILIZER RECOMMENDATION ①

Application rate:	For medium-fertility soils: 100-150 kg/ha NPK (15-15-15) For poor soils: 200-250 kg/ha NPK (15-15-15)
Application period:	NPK at the time of sowing, or 2 weeks after sowing
Comment:	2-3 bags x 50 kg/ha and 4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea (46% N)
Application period:	Urea at 30-35 days after sowing
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

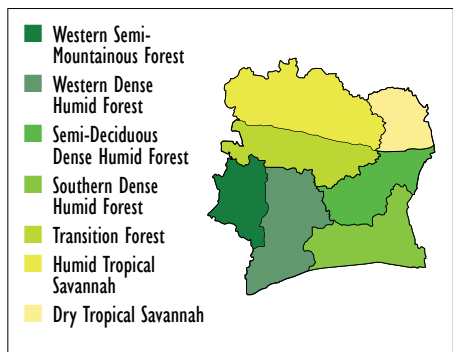
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow; maize is not fertilized by rural farmers
Method of fertilizer application:	Punch and side placement (direct seeding)
Amendments:	Add organic manure as necessary, 30-40 t/ha every two years
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout for insects and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicides
Cropping system:	Rotation (cotton, legumes), mixed cropping





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL COUNTRY AEZs
 Isohyet range 1200-1600 mm/year

MAIZE *Zea mays*



Variety name:	EV8728
Local name:	EV
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	
Grain/flesh color:	Yellow
Planting/sowing time:	15 June 15 July (Savannah zone); 15 April 15 May (Intermediate zone); 10 March 10 April for the first cycle; 31 August 10 September for the second cycle (Forest zone)
Production system:	Rainfed/irrigated
Days from planting to maturity:	105-110
Potential yield:	4-5 t/ha
Pest resistance:	
Disease resistance:	Helminthosporium, maize streak virus
Other stresses:	Resistant to lodging
Nutritional quality:	
Other qualities:	Cooking quality

NUTRIENT RECOMMENDATIONS



ORGANIC FERTILIZER RECOMMENDATION



Application rate:

FERTILIZER RECOMMENDATION



Application rate:	For medium-fertility soils: 100-150 kg/ha NPK (15-15-15) For poor soils: 200-250 kg/ha NPK (15-15-15)
Application period:	NPK at the time of sowing, or 2 weeks after sowing
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	100-150 kg/ha Urea 46%
Application period:	Urea at 40-45 days after sowing
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	
Application period:	
Comment:	



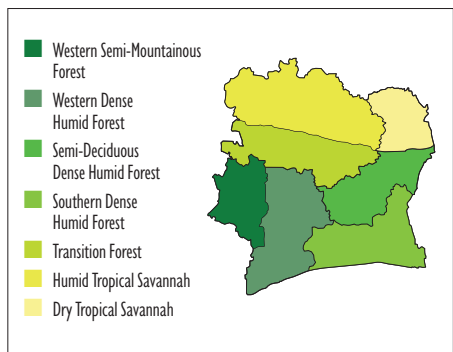
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Punch and side placement (direct seeding)
Amendments:	Add organic manure as necessary, 30-40 t/ha every two years
Water management:	Bunding, ridged partitions, drainage
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cotton, legumes), mixed cropping



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL AEZ

Isohyet range 1,000-2,600 mm/year (monomodal, bimodal)

MAIZE *Zea mays* ✓

Variety name:	GRMP-18 (2)
Local name:	—
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	75 cm x 25 cm — 1 plant per hill 75 cm x 50 cm — 2 plants per hill
Grain/flesh color:	Yellow
Planting/sowing time:	15 June–15 July, Savannah Zone 15 April–15 May, Intermediate Zone 31 August–10 September, Forest Zone
Production system:	Rainfed/irrigated
Days from planting to maturity:	90-100
Potential yield:	3-3,5 t/ha
Pest resistance:	—
Disease resistance:	Helminthosporium, corn stripe virus
Other stresses:	Lodging
Nutritional quality:	Quality protein maize
Other qualities:	Sweet flavor

NUTRIENT RECOMMENDATIONS ↻

For soils of moderate fertility:	62 N - 15 P ₂ O ₅ - 15 K ₂ O 91.5 N - 22.5 P ₂ O ₅ - 22.5 K ₂ O
For poor soils:	76 N - 30 P ₂ O ₅ - 30 K ₂ O 106.5 N - 37.5 P ₂ O ₅ - 37.5 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: Organic manure (compost, dung, etc.).



FERTILIZER RECOMMENDATION ①

Application rate:	100-150 kg/ha NPK 15-15-15 for medium-fertility soils
Application period:	At sowing or 2 weeks after sowing
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	200-250 kg/ha NPK 15-15-15 for poor soils
Application period:	At sowing or 2 weeks after sowing
Comment:	4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	100-150 kg/ha Urea 46%
Application period:	30-35 DAS
Comment:	2-3 bags x 50 kg/ha



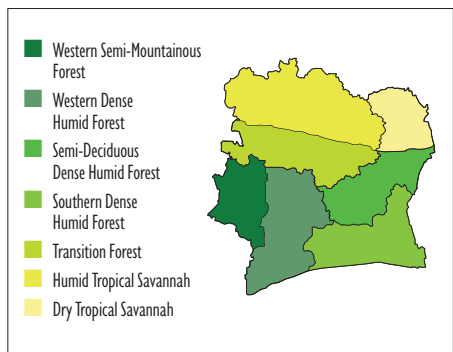
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Ploughing, tilling, harrowing.
Method of fertilizer application:	Punch and side placement (direct seeding). NB. maize is not usually fertilized in a country farm context.
Amendments:	Add 3-4 t/ha organic fertilizers every 2 years.
Water management:	Bunding, harrowing, drainage.
Pest management:	Scout for fall army worms and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes), mixed or associated crops.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ALL AEZ

Isohyet range 1,000-2,600 mm/year (monomodal, bimodal)

MAIZE *Zea mays* ✓

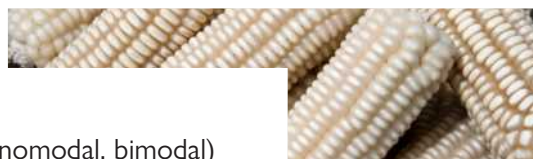
Variety name:	FMB
Local name:	—
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	75 cm x 25 cm — 1 plant per hill 75 cm x 50 cm — 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Whiteness of flour

NUTRIENT RECOMMENDATIONS ↻

For soils of moderate fertility:
62 N - 15 P ₂ O ₅ - 15 K ₂ O
91.5 N - 22.5 P ₂ O ₅ - 22.5 K ₂ O
For poor soils:
76 N - 30 P ₂ O ₅ - 30 K ₂ O
106.5 N - 37.5 P ₂ O ₅ - 37.5 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate:	Organic manure (compost, dung, etc.).
-------------------	---------------------------------------



FERTILIZER RECOMMENDATION ①

Application rate:	200-250 kg/ha NPK 15-15-15
Application period:	At sowing or 2 weeks after sowing
Comment:	4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100-150 kg/ha Urea 46%
Application period:	30-35 DAS
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Ploughing, tilling, harrowing.
Method of fertilizer application:	Punch and side placement (direct seeding). NB. maize is not usually fertilized in a country farm context.
Amendments:	Add 3-4 t/ha organic fertilizers every 2 years.
Water management:	Bunding, harrowing, drainage.
Pest management:	Scout for fall army worms and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes), mixed or associated crops.

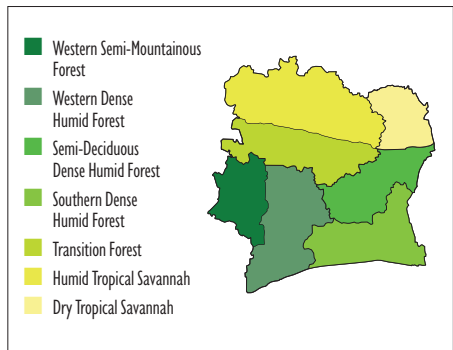




MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	FM 16
Local name:	—
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	80 cm x 50 cm — 3 plants per hill
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	White flour



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



HUMID TROPICAL SAVANE (ODIÉNNÉ, BOUNDIALI, KORHOGO), DRY TROPICAL SAVANNAH (BOUNA, TÉHINI, DOROPO)
 Isohyet range 100-1,400 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	200-250 kg/ha NPK 15-15-15
Application period:	At sowing or 2 weeks after sowing
Comment:	4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100-150 kg/ha Urea 46%
Application period:	30-35 DAS
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O or	
106.5 N - 37.5 P ₂ O ₅ - 37.5 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	3-4 t/ha every 2 years. If needed, add organic compost.

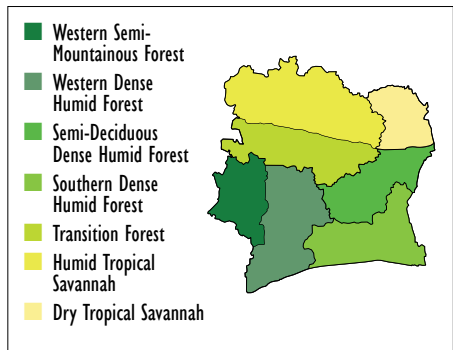


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, tilling, harrowing.
Method of fertilizer application:	Punch and side-placement (direct seeding).
Amendments:	Add organic fertilizer as needed, 3-4 t/ha every 2 years.
Water management:	Bunding, harrowing, ridging.
Pest management:	Scout for fall army worm and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes), mixed or associated crops.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES WITH IRRIGATION SYSTEMS
Isohyet range 1000-2600 mm/year (mono + bimodal)

RICE <i>Oryza sativa</i> ✓	
Variety name:	Bouaké 189
Local name:	
Variety type:	Pure line
Quantity of seed:	40 kg/ha in seed hole or 50 Kg
Spacing:	0.25 m x 0.20 m
Grain/flesh color:	White
Planting/sowing time:	15 March to 1 st April (for the western forested semi-mountainous zone), June (all the central and western side), irrigated
Production system:	Irrigated (and lowlands)
Days from planting to maturity:	125-130 days
Potential yield:	8 t/ha
Pest resistance:	
Disease resistance:	Blast, piricularia, yellow mottle virus, virus
Other stresses:	Sensitive to lodging
Nutritional quality:	
Other qualities:	Aromatic, long grain, cooking quality, etc.

NUTRIENT RECOMMENDATIONS	
Forest:	76 N - 105 P ₂ O ₅ - 105 K ₂ O + 1,25 Ca + 0,19 Mg 83,5 N - 80,5 P ₂ O ₅ - 97,5 K ₂ O 76 N - 100 P ₂ O ₅ - 115 K ₂ O 71 N - 91 P ₂ O ₅ - 105 K ₂ O
Savannah:	111 N - 129 P ₂ O ₅ - 123 K ₂ O + 7 Ca + 45 Mg 121 N - 97,5 P ₂ O ₅ - 112,5 K ₂ O 76 N - 122 P ₂ O ₅ - 137 K ₂ O 104 N - 108 P ₂ O ₅ - 123 K ₂ O

FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha (Forest) and 350 kg/ha (Savannah) NPK 12-24-18 + 2Ca + 13Mg
Application period:	NPK at sowing during deep ploughing
Comment:	5 bags x 50 kg/ha (Forest) and 7 bags x 50 kg/ha (Savannah)

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha (Forest) and 350 kg/ha (Savannah) NPK 15-15-15
Application period:	NPK at sowing during deep ploughing
Comment:	5 bags x 50 kg/ha (Forest) and 7 bags x 50 kg/ha (Savannah)

FERTILIZER RECOMMENDATION ③	
Application rate:	250 kg/ha (Forest) and 350 kg/ha (Savannah) NPK 12-22-22
Application period:	NPK at sowing during deep ploughing
Comment:	5 bags x 50 kg/ha (Forest) and 7 bags x 50 kg/ha (Savannah)

FERTILIZER RECOMMENDATION ④	
Application rate:	250 kg/ha (Forest) and 350 kg/ha (Savannah) NPK 10-18-18
Application period:	NPK at sowing during deep ploughing
Comment:	5 bags x 50 kg/ha (Forest) and 7 bags x 50 kg/ha (Savannah)

FERTILIZER RECOMMENDATION ⑤	
Application rate:	100 kg/ha (Forest) and 150 kg/ha (Savannah) Urée (46% N)
Application period:	25 and 45 after sowing, respectively
Comment:	2 bags x 50 kg/ha (Forest) and 3 bags x 50 kg/ha (Savannah)

FERTILIZER RECOMMENDATION ⑥	
Application rate:	100 kg/ha TSP (45 % P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

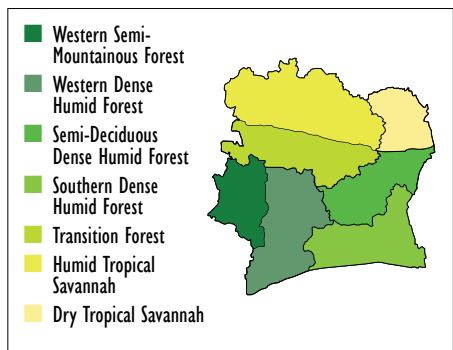
FERTILIZER RECOMMENDATION ⑦	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible: biofertilizer, compost

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow, puddling and leveling techniques
Method of fertilizer application:	Broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure as much as possible
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management, IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES WITH IRRIGATION SYSTEMS
Isohyet range 1200-1500 mm/year

RICE *Oryza sativa* ✓

Variety name:	CG11
Local name:	
Variety type:	Pure line
Quantity of seed:	15-20 kg/ha transplanting; 20-30 kg/ha direct seeding
Spacing:	
Grain/flesh color:	White
Planting/sowing time:	July (rainfed), December-January (off-season)
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	120
Potential yield:	9.5 kg/ha
Pest resistance:	
Disease resistance:	Blast, rice yellow mottle virus (RYMV)
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	Good grain quality

NUTRIENT RECOMMENDATIONS

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible

FERTILIZER RECOMMENDATION ①

Application rate: 200 kg/ha NPK (14-18-18+6S+1B)
Application period: NPK at sowing or transplanting
Comment: 4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate: 100 - 150 kg/ha urea in 2 applications
Application period: First application: 35-50 kg/ha (7-14 days after at sowing or transplanting);
Second application: 65-100 kg/ha (55-60 at panicular stage)
Comment: 2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:
Application period:
Comment:

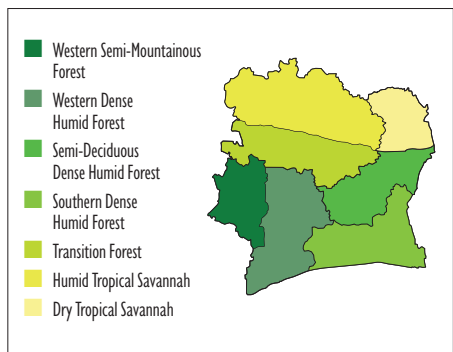


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure as much as possible
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i>	
Variety name:	Danane (synonym: Jigifa)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hole or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	105
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 — Forest, and 300 kg/ha NPK 15-15-15 — Savannah
Application period:	At sowing during deep ploughing
Comment:	5 bags x 50 kg/ha — Forest, and 7 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% — Forest, and 150 kg/ha Urea 46% — Savannah
Application period:	Forest: 25 DAS, and Savannah: 45 DAS
Comment:	2 bags x 50 kg/ha — Forest, and 3 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha



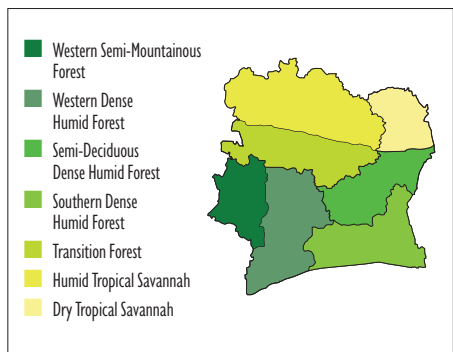
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i>	
Variety name:	IDSA 10 (10) (synonym: Fafa)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	110-120
Potential yield:	4.8 t/ha
Pest resistance:	—
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 — Forest, and 300 kg/ha NPK 15-15-15 — Savannah
Application period:	At sowing during deep ploughing
Comment:	5 bags x 50 kg/ha — Forest, and 7 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% N — Forest, and 150 kg/ha Urea 46% N — Savannah
Application period:	Forest: 25 DAS; Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha — Forest, and 3 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha



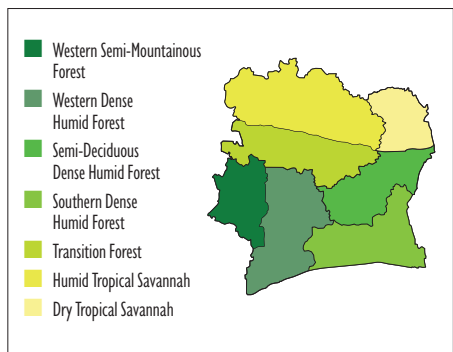
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica 1 (synonym: Bonfani)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	90-100
Potential yield:	4-4.8 t/ha
Pest resistance:	—
Disease resistance:	Blast, RYMV
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS ↻	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 — Forest, and 300 kg/ha NPK 15-15-15 — Savannah
Application period:	At sowing during deep ploughing
Comment:	5 bags x 50 kg/ha — Forest, and 7 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% — Forest, and 150 kg/ha Urea 46% — Savannah
Application period:	Forest: 25 DAS, and Savannah: 45 DAS
Comment:	2 bags x 50 kg/ha — Forest, and 3 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

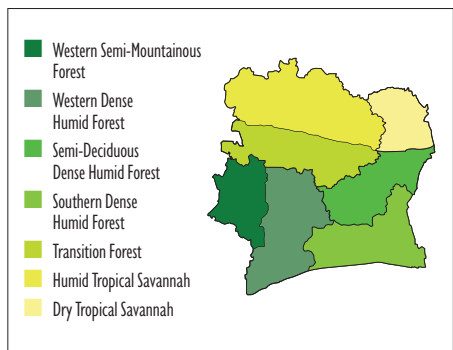


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone lines, mulching, grass strips, embankments, minimum/zero tillage, and/or soil preparation.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i> ✓	
Variety name:	WITA 1 (synonym: Yabra)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 50 kg/ha broadcast
Spacing:	25 cm x 20 cm, 4-5 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	15 March–1 April (for the western semi-mountainous forest area), and June (entire central and western side)
Production system:	Irrigated
Days from planting to maturity:	130
Potential yield:	5 t/ha
Pest resistance:	Yes
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS ↻	
Forest:	83.5 N - 80.5 P ₂ O ₅ - 97.5 K ₂ O, or 71 N - 91 P ₂ O ₅ - 105 K ₂ O
and Savannah:	121 N - 97.5 P ₂ O ₅ - 112.5 K ₂ O, or 104 N - 108 P ₂ O ₅ - 123 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha NPK 15-15-15 — Forest, and 350 kg/ha NPK 15-15-15 — Savannah
Application period:	At sowing during deep ploughing
Comment:	5 bags x 50 kg/ha — Forest, and 7 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% — Forest, and 150 kg/ha Urea 46% — Savannah
Application period:	Forest: 25 DAS ;Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha — Forest, and 3 bags x 50 kg/ha — Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

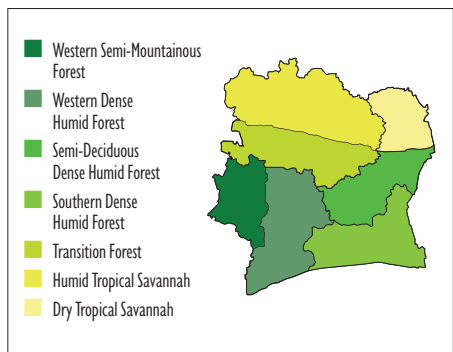


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	Microdose and urea deep placement (UDP).
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES

Isohyet range 1,000-2,600 mm/year – monomodal and bimodal

RICE *Oryza sativa* ✓

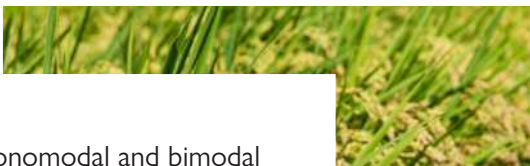
Variety name:	IDSA 6
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	120-125
Potential yield:	5.2 t/ha
Pest resistance:	—
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS ↻

Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 15-15-15 – Forest, and 300 kg/ha NPK 15-15-15 – Savannah
Application period:	At sowing during deep ploughing
Comment:	4 bags x 50 kg/ha – Forest, and 6 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea 46% N – Forest, and 150 kg/ha Urea 46% N – Savannah
Application period:	Forest: 25 DAS; Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha – Forest, and 3 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ③

Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④

Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha



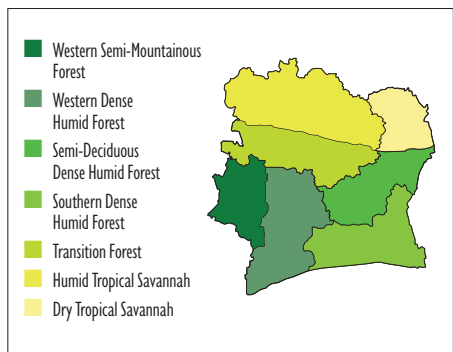
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



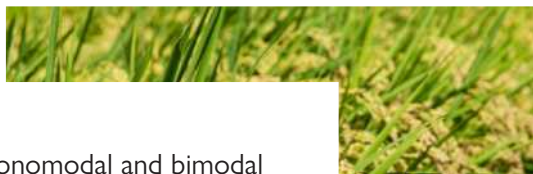
COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES

Isohyet range 1,000-2,600 mm/year – monomodal and bimodal

RICE <i>Oryza sativa</i> ✓	
Variety name:	IDS A 74
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	130 DAS
Potential yield:	4 t/ha
Pest resistance:	—
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS ↻	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 – Forest, and 300 kg/ha NPK 15-15-15 – Savannah
Application period:	At sowing during deep ploughing
Comment:	5 bags x 50 kg/ha – Forest, and 7 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% N – Forest, and 150 kg/ha Urea 46% N – Savannah
Application period:	Forest: 25 DAS; Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha – Forest, and 3 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

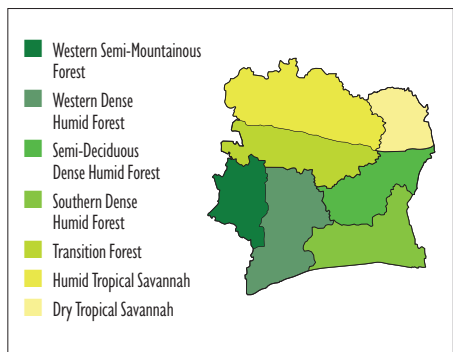


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i>	
Variety name:	IDSA 91 (synonym: Angbé)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 50 kg/ha broadcast
Spacing:	25 cm x 20 cm, 4-5 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	125-130
Potential yield:	3.7 t/ha
Pest resistance:	—
Disease resistance:	Yes
Other stresses:	Yes
Nutritional quality:	—
Other qualities:	Yes

NUTRIENT RECOMMENDATIONS	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 – Forest, and 300 kg/ha NPK 15-15-15 – Savannah
Application period:	At sowing during deep ploughing
Comment:	4 bags x 50 kg/ha – Forest, and 6 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% N – Forest, and 150 kg/ha Urea 46% N – Savannah
Application period:	Forest: 25 DAS; Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha – Forest, and 3 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques: Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.

Method of fertilizer application: —

Amendments: If available, add manure, rock phosphate, lime, organic material, and/or compost.

Water management: Basin, alternate wetting and drying, drainage.

Pest management: Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.

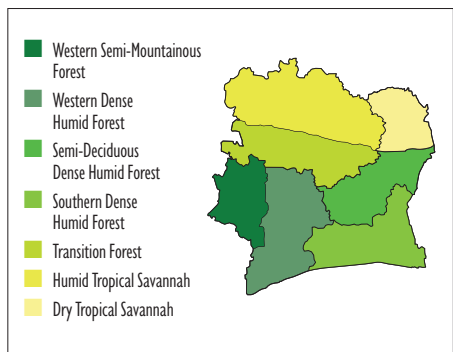
Weed control: Good agricultural practices (mechanical weeding) and herbicides.

Cropping system: Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





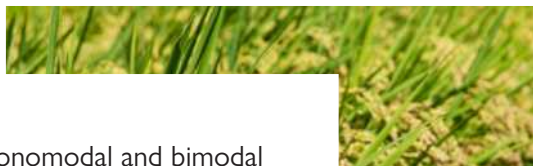
WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica 2 (synonym: Kéah)
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha in hill or 60 kg/ha broadcast
Spacing:	20 cm x 20 cm, 2-3 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	5 March–1 April (for the western semi-mountainous forest area), and June (all central and western side)
Production system:	Rainfed
Days from planting to maturity:	90-100
Potential yield:	4-4.9 t/ha
Pest resistance:	—
Disease resistance:	Rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS ↻	
Forest:	76 N - 75 P ₂ O ₅ - 90 K ₂ O, or 66 N - 81 P ₂ O ₅ - 96 K ₂ O
and Savannah:	114 N - 90 P ₂ O ₅ - 105 K ₂ O, or 123 N - 99 P ₂ O ₅ - 114 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add compost and/or biofertilizers.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 – Forest, and 300 kg/ha NPK 15-15-15 – Savannah
Application period:	At sowing during deep ploughing
Comment:	4 bags x 50 kg/ha – Forest, and 6 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea 46% N – Forest, and 150 kg/ha Urea 46% N – Savannah
Application period:	Forest: 25 DAS; Savannah: 45 DAS (deep ploughing)
Comment:	2 bags x 50 kg/ha – Forest, and 3 bags x 50 kg/ha – Savannah

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha TSP (45% P)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	100 kg/ha KCl/K ₂ SO ₄ (60% K)
Application period:	At sowing during deep ploughing
Comment:	2 bags x 50 kg/ha

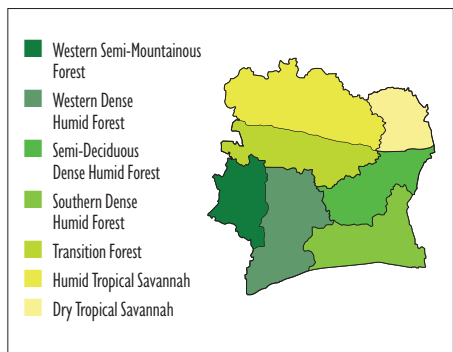


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, water layer, and levelling. Recommended: Zai method, stone cordons, mulching, grass strips, embankments, and/or minimum/zero tillage.
Method of fertilizer application:	—
Amendments:	If available, add manure, rock phosphate, lime, organic material, and/or compost.
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM), e.g., fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
HUMID TROPICAL SAVANNAH, DRY TROPICAL SAVANNAH
 Isohyet range 1,000-1,400 mm/year

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	FSR 18
Local name:	—
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	80 cm x 50 cm (3 plants per hill)
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	White flour

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O	
to 106.5 N - 37.5 P ₂ O ₅ - 37.5 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Si possible, ajoutez de la fumure organique (compost, fumier, etc.).



FERTILIZER RECOMMENDATION ①	
Application rate:	200-250 kg/ha NPK 15-15-15
Application period:	At sowing or 2 weeks after sowing
Comment:	4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100-150 kg/ha Urea
Application period:	30-35 DAS
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

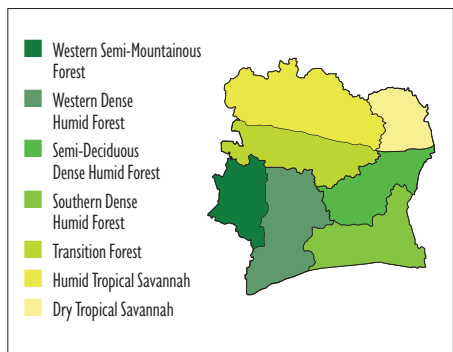


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, tilling, harrowing.
Method of fertilizer application:	Punch and side placement (direct seeding).
Amendments:	Add organic manure if necessary 3 to 4 t/ha every two years.
Water management:	Bunding, harrowing, drainage.
Pest management:	Scout for fall armyworms and apply pesticides (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
HUMID TROPICAL SAVANNAH, DRY TROPICAL SAVANNAH
 Isohyet range 1,000-1,400 mm/year – monomodal

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	FSR 39
Local name:	—
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	80 cm x 50 cm (3 plants per hill)
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	White flour

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O	
to 106.5 N - 37.5 P ₂ O ₅ - 37.5 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Si possible, ajoutez de la fumure organique (compost, fumier, etc.).



FERTILIZER RECOMMENDATION ①	
Application rate:	200-250 kg/ha NPK 15-15-15
Application period:	At sowing or 2 weeks after sowing
Comment:	4-5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100-150 kg/ha Urea
Application period:	30-35 DAS
Comment:	2-3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



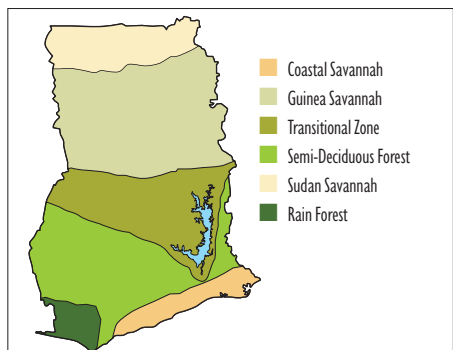
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, tilling, harrowing.
Method of fertilizer application:	Punch and side placement (direct seeding).
Amendments:	Add organic manure if necessary 3 to 4 t/ha every two years.
Water management:	Bunding, harrowing, drainage.
Pest management:	Scout for fall armyworms and apply pesticides (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation (cotton, vegetables), intercropping or mixed cropping.



GHANA



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

COASTAL SAVANNAH, RAIN FOREST, TRANSITION ZONE

Isohyet range 600-1,800 mm/year: Coastal Savanna 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

CASSAVA *Manihot esculenta* ✓

Variety name:	CRI-Ampong
Local name:	Ampong
Variety type:	—
Quantity of cuttings:	60 bundles/ha
Spacing:	1 m x 1 m. Plant 25 cm long cuttings in a slanting position
Skin color of root:	Deep brown
Planting/sowing time:	April–July
Production system:	Rainfed
Days from planting to maturity:	12-15 months
Potential yield:	45 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to Cassava Mosaic Virus (CMV)
Nutritional quality:	—
Other qualities:	Good for flour, starch, and poundable.

NUTRIENT RECOMMENDATIONS ↻

100 N - 30 P₂O₅ - 30 K₂O

For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①

Application rate:	300 kg/ha NPK 17-10-10
Application period:	Apply 3 bags 1 month after planting and 3 bags 3 months after planting
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	Apply 6 months after planting
Comment:	2 bags x 50 kg/ha

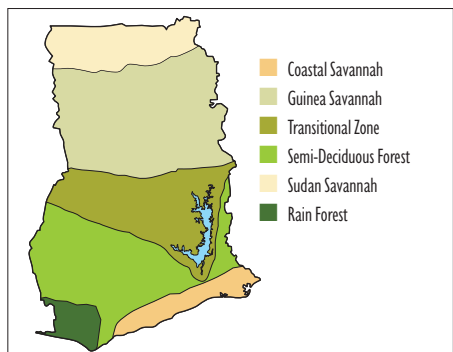
FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Apply mulch to conserve soil and moisture. Ridging, mounding, and on level ground. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	Side placement by burying and banding.
Amendments:	Add organic manure when necessary, plus biochar, lime, and rock phosphate.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Control pests when necessary. Scout for grasshoppers, mealybugs, locusts, and rodents.
Weed control:	Good agricultural practices (mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Monocropping for commercial farmers. Intercropping for smallholder farmers. Rotation with maize and legumes.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Eskamaye
Local name:	—
Variety type:	—
Quantity of cuttings:	60 bundles/ha
Spacing:	1 m x 1 m. Plant 25 cm long cuttings in a slanting position
Skin color of root:	Deep brown
Planting/sowing time:	April–July
Production system:	Rainfed
Days from planting to maturity:	8-12 months
Potential yield:	16-23 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Gari swelling ability: high. Poundability: not poundable in dry season. Uses: Tuo Zaafi, gari, flour, and starch.

NUTRIENT RECOMMENDATIONS ↻	
100 N - 30 P ₂ O ₅ - 30 K ₂ O	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 17-10-10
Application period:	Apply 3 bags 1 month after planting and 3 bags 3 months after planting
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Apply 6 months after planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

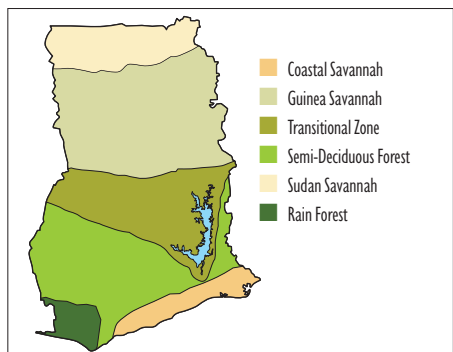
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Apply mulch to conserve soil and moisture. Ridging, mounding, and on level ground. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	Side placement by burying and banding.
Amendments:	Add organic manure when necessary, plus biochar, lime, and rock phosphate.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Control pests when necessary. Scout for grasshoppers, mealybugs, locusts, and rodents.
Weed control:	Good agricultural practices (mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Monocropping for commercial farmers. Intercropping for smallholder farmers. Rotation with maize and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Afisiafi
Local name:	—
Variety type:	—
Quantity of cuttings:	60 bundles/ha
Spacing:	1 m x 1 m. Plant 25 cm long cuttings in a slanting position
Skin color of root:	Outer skin of root: pale reddish-brown. Mature stem color: greenish-brown.
Planting/sowing time:	April–July
Production system:	Rainfed
Days from planting to maturity:	12-15 months
Potential yield:	28-35 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Tolerant of cassava mosaic virus (CMV).
Nutritional quality:	—
Other qualities:	Cooking ability: not poundable. Wider adaptation. Uses: gari, flour, and starch.

NUTRIENT RECOMMENDATIONS ↻	
100 N - 30 P ₂ O ₅ - 30 K ₂ O	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 17-10-10
Application period:	Apply 3 bags 1 month after planting and 3 bags 3 months after planting
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Apply 6 months after planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

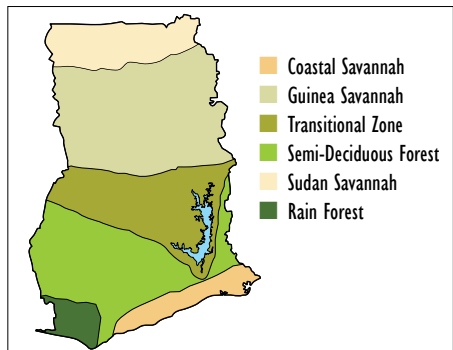
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Apply mulch to conserve soil and moisture. Ridging, mounding, and on level ground. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	Side placement by burying and banding.
Amendments:	Add organic manure when necessary, plus biochar, lime, and rock phosphate.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Control pests when necessary. Scout for grasshoppers, mealybugs, locusts, and rodents.
Weed control:	Good agricultural practices (mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Monocropping for commercial farmers. Intercropping for smallholder farmers. Rotation with maize and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SEMI-DECIDUOUS, FOREST
Isohyet range 1200-1500 mm/year (bimodal) Semi-Deciduous zone, 1500-1800 mm/year Forest zone

COCOA <i>Theobroma cacao</i> ✓	
Variety name:	Local
Local name:	Local
Variety type:	Local
Quantity of seed:	35 pods, planting density not respected
Spacing:	
Grain/flesh color:	Brown
Planting/sowing time:	May June, nursery between October January
Production system:	Rainfed
Days from planting to maturity:	From 5 years to begin production and from 12-15 years for full production
Potential yield:	350 kg/ha/an
Pest resistance:	No insecticide treatments, to be done if necessary
Disease resistance:	No treatments, to be done if necessary
Other stresses:	Sun, excessive rain, pod rot
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	0 N - 33 P ₂ O ₅ - 27 K ₂ O +7,5 S +1,5 B

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Poultry manure, if available

FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPKSB 0-22-18+5S+1B
Application period:	1 application each year from the start of bearing pods (May June)
Comment:	3 bags x 50 kg/ha (depending on the cost)

FERTILIZER RECOMMENDATION ②	
Application rate:	
Application period:	
Comment:	Foliar fertilizers (micro-nutrients)

FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	



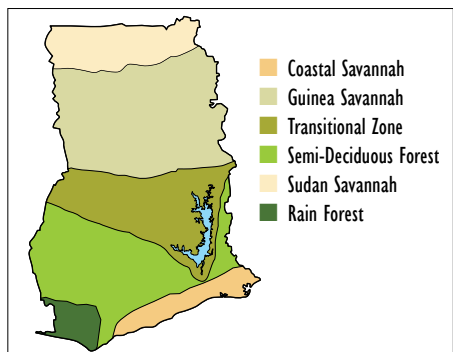
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	
Method of fertilizer application:	Broadcast
Amendments:	
Water management:	
Pest management:	1 treatment subsidized by the sector
Weed control:	Manual weeding before the rains start and before harvest
Cropping system:	Monoculture; association with plantain in planting, and with cassava, leguminous trees, and various local trees



COCOA <i>Theobroma cacao</i> ✓	
Variety name:	Hybrid
Local name:	Hybrid
Variety type:	Hybrid
Quantity of seed:	50 ripe pods for approximately 1,500 plants in nursery (planting density 1,100 plants/ha)
Spacing:	
Grain/flesh color:	Brown
Planting/sowing time:	May-June, nursery during October-January
Production system:	Rainfed
Days from planting to maturity:	From 3 years to begin production, and from 10-15 years for full production
Potential yield:	1 t/ha/an
Pest resistance:	2 insecticide treatments required each year
Disease resistance:	1 treatment against diseases (depending on the cost)
Other stresses:	Sun, excessive rain, soil acidity
Nutritional quality:	% fat content
Other qualities:	Quality and weight of cocoabeans



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SEMI-DECIDUOUS, DENSE FOREST ZONE (KUMASI, BEKWAI, ASSIN-FOSSU, KOFORIDUA, ODA, TARKWA)
Isohyet range 1200-1500 mm/year Semi-Deciduous zone, 1500-1800 mm/year Dense Forest zone

FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPKSB 0-22-18+5S+1B
Application period:	1 application each year from the start of bearing pods (May-June)
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	
Application period:	
Comment:	Foliar fertilizers (trace elements)

FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	

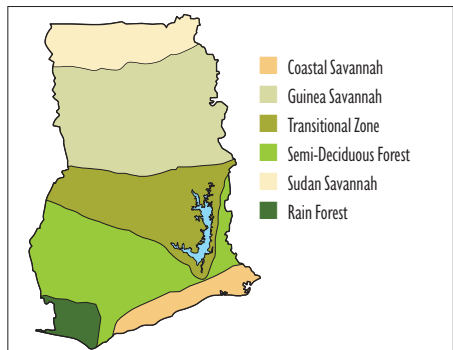
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching
Method of fertilizer application:	Broadcast
Amendments:	Rock phosphate from Togo or Burkina Faso
Water management:	
Pest management:	2 insecticide treatments required each year
Weed control:	Manual weeding before the rains start and before harvest
Cropping system:	Monoculture; association with plantain in planting, and with cassava, leguminous trees, and various local trees

NUTRIENT RECOMMENDATIONS	
Application rate:	0 N - 33 P ₂ O ₅ - 27 K ₂ O +7,5 S +1,5 B

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

RAIN FOREST, SEMI-DECIDUOUS FOREST, TRANSITIONAL ZONE (COCOA REGIONS: ASHANTI, WESTERN NORTH, WESTERN SOUTH, BRONG AHAFO, BONO EAST, EASTERN, CENTRAL, VOLTA, OTI)
 Isohyet range 1,000-1,500 mm/year

COCOA *Theobroma cacao* ✓

Variety name:	Amazon
Local name:	Agric
Variety type:	OPV
Quantity of seed:	1,100 kg/ha
Spacing:	3 m x 3 m = 1,100 trees per hectare
Fresh, mature pod color:	Green (unripe) or yellow (ripe)
Planting/sowing time:	April–May, at onset of rains
Production system:	Rainfed
Days from planting to maturity:	5 years
Potential yield:	>1.25 t/ha
Pest resistance:	Less tolerant than hybrid.
Disease resistance:	Less tolerant than hybrid.
Other stresses:	—
Nutritional quality:	—
Other qualities:	Not recommended for planting.

NUTRIENT RECOMMENDATIONS ↻

0 N - 80 P₂O₅ - 70 K₂O +27 S +1,25 B +34 CaO +23 MgO or
 0 N - 22 P₂O₅ - 18 K₂O +9 CaO +7 S +6 MgO

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 1 t/ha per year.



FERTILIZER RECOMMENDATION ①

Application rate: 375 kg/ha granular inorganic fertilizer. Nutrient composition may vary depending on brand:
 1) NPK 3-22-20 +10CaO +6SO₃ +6MgO +0.5Zn +0.5B
 2) NPK 2-23-18 +8CaO +6SO₃ +6MgO +0.3Zn +0.5B
 3) NPK 5-16-15 +16CaO +6S +3MgO +0.7Zn +0.3B
 4) NPK 7-22-13 +6CaO +5S +5MgO +0.1Zn +0.4B
 5) NPK 4-21-17 +4.5CaO +6S +6MgO +0.5Zn +0.1B
 6) NPK 0-22-18 +9CaO +7S +6MgO +0.5Zn
 7) NPK 7-32-20 +2S +2.5MgO +6CaO
 8) NPK 7-25-18 +4S +6MgO +9CaO +0.8B +1Zn
 9) NPK 4-23-21 +6SO₃ +2MgO +12CaO +0.4B +0.1Zn

Application period: April–June, once per year.
 Comment: 7.5 bags x 50 kg/ha. Mostly for matured cocoa. Pause application after 3 consecutive years of use.



FERTILIZER RECOMMENDATION ②

Application rate: 200-300 ml/ha foliar fertilizer for 1 month: 10-8-10 +0.016% B +0.004% Cu +0.02% Zn Bio liquid Organic 0.76% N +0.09% P₂O₅ +2.16% K₂O +0.48% Ca +0.57% Mg + 6.28% Organic carbon; Kelik Potassium 50% K₂O +4.5% EDTA Florone 1%N 10%P₂O₅ 10%K₂O +0.25% B +0.02%Mo +4% amino acids

Application period: Start from April or onset of rains, and apply for 4 consecutive months.
 Comment: For both young and mature cocoa depending on nutrient specification.

FERTILIZER RECOMMENDATION ③

Application rate: 150 kg/ha ammonium sulphate once per year.
 Application period: April–June
 Comment: For young cocoa up to 18 months.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques: Permanent shade trees of 15 to 18 per ha, the periodic shedding of leaves by the cocoa tree also aid in soil conservation amidst application of manure.

Method of fertilizer application: Broadcasting and ring application for young trees from 12 to 18 months.

Amendments: Calcipril, rock phosphate and organic manure.

Water management: Irrigation system could be adopted to mitigate the effect of varying climatic conditions.

Pest management: Integrated pest management is necessary to ensure the ecosystem is not distracted.

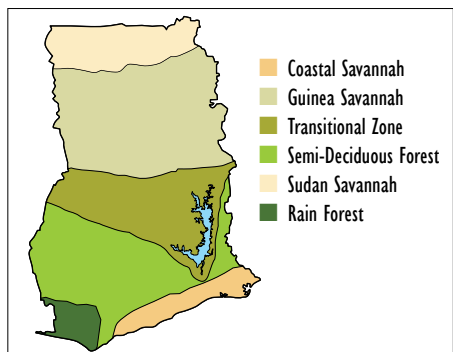
Weed control: For newly planted cocoa, weeding is done at least four times a year while cocoa with a closed canopy requires weeding twice a year.

Cropping system: Mixed cropping is adopted at the establishing stage when plantain suckers (temporary shade) and other crops are intercropped with cocoa. Cocoa being understorey crop is associated with agroforestry establishment where permanent shade trees are planted.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL, SUDAN, SAVANNAH
Isohyet range 1200-1500 mm/year

COWPEA *Vigna unguiculata* ✓

Variety name:	Songotra
Local name:	
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	
Grain/flesh color:	White
Planting/sowing time:	June
Production system:	Rainfed
Days from planting to maturity:	62-65
Potential yield:	2 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻

N - 60 P₂O₅ - K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: As possible

FERTILIZER RECOMMENDATION ①

Application rate:	300 kg/ha NPK 17-10-10
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Localised, side dressing, or broadcast
Amendments:	Add organic manure as much as possible
Water management:	
Pest management:	Seed treatment with fungicides, scout for insects (<i>Maruca vitrata</i>) and treat with pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cereals)



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Apaagbala
Local name:	Beans
Variety type:	—
Quantity of seed:	15 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	White with black eye
Planting/sowing time:	July-August (March–April in the south of the country)
Production system:	Rainfed
Days from planting to maturity:	64-67
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



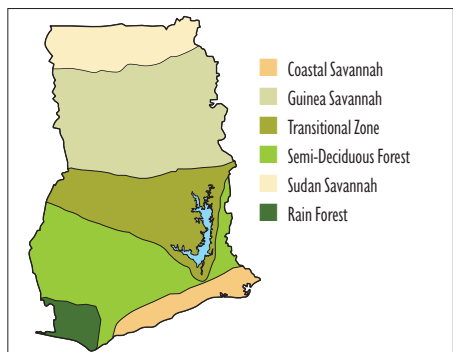
FERTILIZER RECOMMENDATION ①	
Application rate 1, or	200 kg/ha NPK 12-30-17 +0.7 Zn
Application rate 2, or	100 kg/ha NPK 4-18-13 +3 S +3 MgO +6 CaO +0.1 B
Application rate 3	150 kg/ha NPS 14-31-0 +9 S +1 Zn +1 B
Application period	Apply at planting.
Comment 1	4 bags x 50 kg/ha
Comment 2	2 bags x 50 kg/ha
Comment 3	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨	
Soil and water conservation techniques:	Plough and harrow where applicable. Minimum/zero tillage is recommended for land preparation and irrigation and water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	IPM
Weed control:	Good agricultural practices (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotation (cereals). Intercropping with cereals in smallholdings.



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

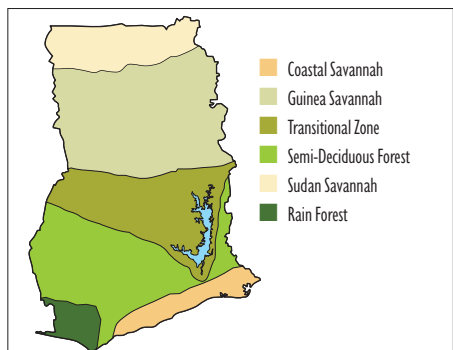
SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITIONAL ZONE, COASTAL SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savanna 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600



WEST AFRICA AGRO-ECOLOGICAL ZONE

ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITIONAL ZONE, COASTAL SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Kirkhouse Benga -1
Local name:	Beans
Variety type:	—
Quantity of seed:	15 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	White with black eye
Planting/sowing time:	July-August (March–April in the south of the country)
Production system:	Rainfed
Days from planting to maturity:	62-65
Potential yield:	2.4 t/ha
Pest resistance:	Highly resistant to <i>Aphis craccivora</i> , Resistant to <i>Striga gesnerioides</i>
Disease resistance:	—
Other stresses:	Moderately tolerant to drought
Nutritional quality:	Protein content: 23.88 g/100 g; iron content: 6.08 mg/100 g
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate 1, or	200 kg/ha NPK 12-30-17 +0.7 Zn
Application rate 2, or	100 kg/ha NPK 4-18-13 +3 S +3 MgO +6 CaO +0.1 B
Application rate 3	150 kg/ha NPS 14-31-0 +9 S +1 Zn +1 B
Application period	Apply at planting.
Comment 1	4 bags x 50 kg/ha
Comment 2	2 bags x 50 kg/ha
Comment 3	3 bags x 50 kg/ha

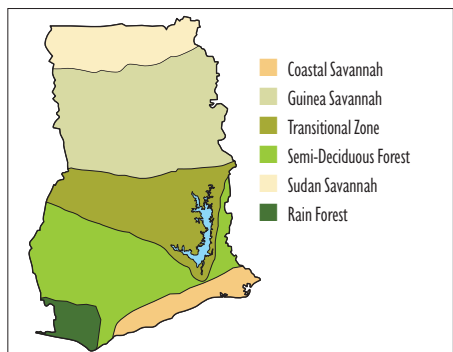
FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough and harrow where applicable. Mulching and use of cover crops. Minimum/zero tillage is recommended for land preparation and irrigation and water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	Integrated Pest Management (IPM).
Weed control:	Good agricultural practices (mechanical weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotation (cereals). Intercropping with cereals in smallholdings.





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITIONAL ZONE, COASTAL SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

COWPEA *Vigna unguiculata* ✓

Variety name:	Wang-kae (No Striga)
Local name:	Beans
Variety type:	—
Quantity of seed:	15 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	White with brown eye
Planting/sowing time:	July-August (March–April in the south of the country)
Production system:	Rainfed
Days from planting to maturity:	65 (early maturing)
Potential yield:	2.4 t/ha
Pest resistance:	Highly resistant to <i>Aphis craccivora</i> , Resistant to <i>Striga gesnerioides</i>
Disease resistance:	—
Other stresses:	Moderately tolerant to drought and <i>Macrophomina</i> disease.
Nutritional quality:	Protein content: 23.11 g/100 g; iron content: 2.53 mg/100 g
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

20 N - 60 P₂O₅ - 30 K₂O +1.2 Zn
For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate 1, or	200 kg/ha NPK 12-30-17 +0.7 Zn
Application rate 2, or	100 kg/ha NPK 4-18-13 +3 S +3 MgO +6 CaO +0.1 B
Application rate 3	150 kg/ha NPS 14-31-0 +9 S +1 Zn +1 B
Application period	Apply at planting.
Comment 1	4 bags x 50 kg/ha
Comment 2	2 bags x 50 kg/ha
Comment 3	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇵

Soil and water conservation techniques:	Plough and harrow where applicable. Mulching and use of cover crops. Minimum/zero tillage is recommended for land preparation and irrigation and water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	Integrated Pest Management (IPM).
Weed control:	Good agricultural practices (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotation (cereals). Intercropping with cereals in smallholdings.

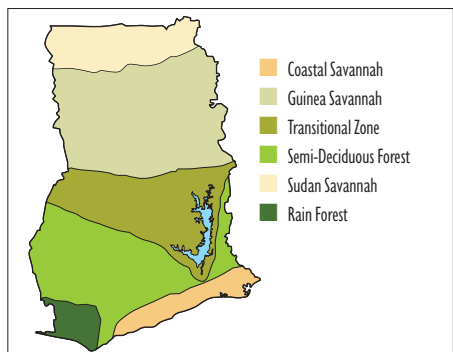




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Bengla
Local name:	Beans
Variety type:	Pure line
Quantity of seed:	15 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	White with black eye
Planting/sowing time:	July-August (March–April in the south of the country)
Production system:	Rainfed
Days from planting to maturity:	55-60 (early maturing)
Potential yield:	1.5 t/ha
Pest resistance:	–
Disease resistance:	Susceptible to cowpea stem rot
Other stresses:	–
Nutritional quality:	–
Other qualities:	High grain/fodder yields



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITIONAL ZONE, COASTAL SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

FERTILIZER RECOMMENDATION ①	
Application rate 1, or	200 kg/ha NPK 12-30-17 +0.7 Zn
Application rate 2, or	100 kg/ha NPK 4-18-13 +3 S +3 MgO +6 CaO +0.1 B
Application rate 3	150 kg/ha NPK 14-31-0 +9 S +1 Zn +1 B
Application period	Apply at planting.
Comment 1	4 bags x 50 kg/ha
Comment 2	2 bags x 50 kg/ha
Comment 3	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough and harrow where applicable. Mulching and use of cover crops. Minimum/zero tillage is recommended for land preparation and irrigation and water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Integrated Pest Management (IPM).
Weed control:	Good agricultural practices (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotation (cereals). Intercropping with cereals in smallholdings.

NUTRIENT RECOMMENDATIONS	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

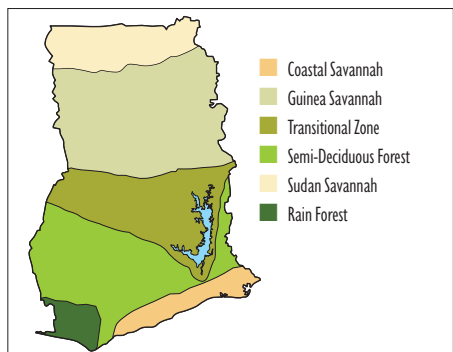




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Hewale
Local name:	Beans
Variety type:	—
Quantity of seed:	15 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	White with brown eye
Planting/sowing time:	July-August (March–April in the south of the country)
Production system:	Rainfed
Days from planting to maturity:	64-72
Potential yield:	3.1 t/ha
Pest resistance:	Moderate; tolerant to insect pests especially thrips
Disease resistance:	—
Other stresses:	Moderately tolerant to Cercospora leaf spot and other important diseases
Nutritional quality:	—
Other qualities:	High market premium



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITIONAL ZONE, COASTAL SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

FERTILIZER RECOMMENDATION ①	
Application rate 1, or	200 kg/ha NPK 12-30-17 +0.7 Zn
Application rate 2, or	100 kg/ha NPK 4-18-13 +3 S +3 MgO +6 CaO +0.1 B
Application rate 3	150 kg/ha NPK 14-31-0 +9 S +1 Zn +1 B
Application period	Apply at planting.
Comment 1	4 bags x 50 kg/ha
Comment 2	2 bags x 50 kg/ha
Comment 3	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough and harrow where applicable. Mulching and use of cover crops. Minimum/zero tillage is recommended for land preparation and irrigation and water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	Integrated Pest Management (IPM).
Weed control:	Good agricultural practices (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotation (cereals). Intercropping with cereals in smallholdings.

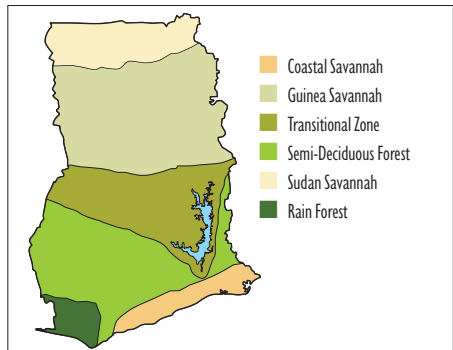
NUTRIENT RECOMMENDATIONS ↻	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMIDE, SEMI-ARIDE



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Chinese (Shi tao chi)
Local name:	Chinese
Variety type:	OPV
Quantity of seed:	50 kg/ha
Spacing:	40 cm x 10 cm
Grain/flesh color:	Tan
Planting/sowing time:	June-July
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	2.1 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	The seeds contain 35% oil
Other qualities:	Suitable for soup and all confectionery

NUTRIENT RECOMMENDATIONS ↻	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 12-30-17 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha NPK 4-18-13 +3S +3MgO +6CaO +0.1B
Application period:	At planting
Comment:	2 bags x 50 kg/ha

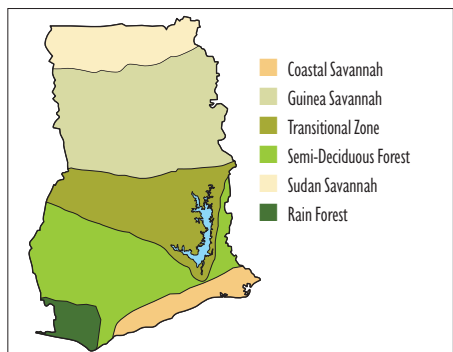
FERTILIZER RECOMMENDATION ③	
Application rate:	150 kg/ha NPS 14-31-0 +9S +1Zn +1B
Application period:	At planting
Comment:	3 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀	
Soil and water conservation techniques:	Tied-ridging, bunding, Zai method, cover cropping. Minimum/zero tillage is also a recommended land preparation method when possible. Water harvesting techniques.
Method of fertilizer application:	Side placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	IPM.
Weed control:	Good agricultural practices (mechanical weeding where applicable) and combinations of herbicides can be adopted.
Cropping system:	Rotate with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMIDE, SEMI-ARIDE



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

GROUNDNUT *Arachis hypogaea* ✓

Variety name:	Obolo
Local name:	—
Variety type:	—
Quantity of seed:	50 kg/ha
Spacing:	40 cm x 10 cm
Grain/flesh color:	Tan
Planting/sowing time:	June-July
Production system:	Rainfed
Days from planting to maturity:	120
Potential yield:	2.7 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Suitable for confectionery

NUTRIENT RECOMMENDATIONS ↻

20 N - 60 P₂O₅ - 30 K₂O +1.2 Zn
 For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 12-30-17 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha NPK 4-18-13 +3S +3MgO +6CaO +0.1B
Application period:	At planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	150 kg/ha NPK 14-31-0 +9S +1Zn +1B
Application period:	At planting
Comment:	3 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

Soil and water conservation techniques: Tied-ridging, bunding, Zai method, cover cropping. Minimum/zero tillage is also a recommended land preparation method when possible. Water harvesting techniques.

Method of fertilizer application: Side placement. Seed inoculation is recommended.

Amendments: Compost, organic manure, rock phosphate, TSP could be applied.

Water management: See "Soil and Water Conservation Techniques".

Pest management: IPM.

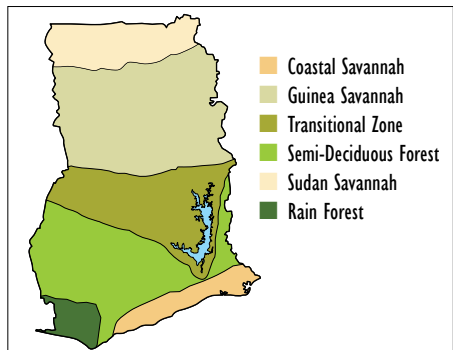
Weed control: Good agricultural practices (mechanical weeding where applicable) and combinations of herbicides can be adopted.

Cropping system: Rotate with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH
Isohyet range 800-1200 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Obatanpa
Local name:	Obatanpa
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	Between rows: 75 cm; within rows: 45 cm; seeds/hill: 2; population/hectare: 59,259
Grain/flesh color:	White dent
Planting/sowing time:	15 April 15 May, 15 July 15 August; 1 st and 2 nd season plantings
Production system:	Rainfed
Days from planting to maturity:	105-110
Potential yield:	4.6 t/ha
Pest resistance:	
Disease resistance:	Streak resistant
Other stresses:	
Nutritional quality:	Quality protein maize
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	100 N - 40 P ₂ O ₅ - 40 K ₂ O +0.5 Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible: organic manure and compost

FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha of NPK 15-20-20 at sowing
Application period:	At sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

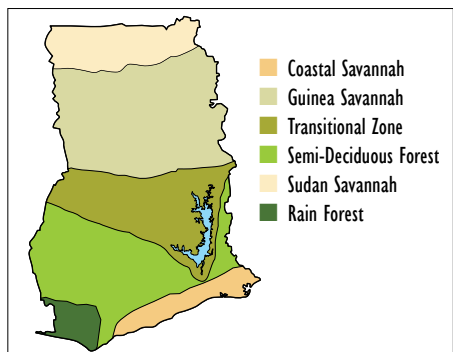
FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough and harrow as possible
Method of fertilizer application:	Side placement for complex fertilizers and ammonium sulfate, and urea deep placement (UDP)
Amendments:	Add organic manure when possible
Water management:	Use supplementary irrigation where appropriate, even during rainfed production
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (maize and legumes on the same field over time is recommended)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GUINEA SAVANNAH
 Isohyet range 800-1200 mm/year

MAIZE *Zea mays*

Variety name:	Abontem
Local name:	Abontem
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	Between rows: 75 cm; within rows: 45 cm; Seeds/hill: 2; Population/ha: 59,259
Grain/flesh color:	Yellow
Planting/sowing time:	15 April 15 May, 15 July 15 August; 1 st and 2 nd season plantings
Production system:	Rainfed
Days from planting to maturity:	75-80
Potential yield:	4.7 t/ha
Pest resistance:	
Disease resistance:	Streak resistant
Other stresses:	Drought tolerant
Nutritional quality:	Quality protein maize
Other qualities:	

NUTRIENT RECOMMENDATIONS

100 N - 40 P₂O₅ - 40 K₂O +0.5 Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible: organic manure and compost

FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha of NPK 15-20-20 at seeding
Application period:	At seeding
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③


Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

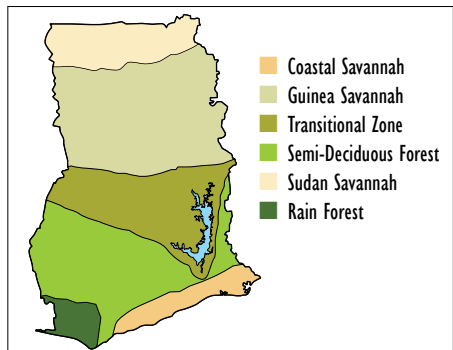
Soil and water conservation techniques:	Plough and harrow as possible
Method of fertilizer application:	Side placement and deep placement for complex fertilizers and urea
Amendments:	Add organic manure as necessary
Water management:	Use supplementary irrigation where appropriate, in case of unexpected drought during rainfed production
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation, inter-cropping, mixed cropping, continuous monocropping




MAIZE <i>Zea mays</i> 	
Variety name:	Omankwa
Local name:	Omankwa
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	Between rows: 75 cm; within rows: 25 cm; Seeds/hill: 1; Population/ha: 53,333
Grain/flesh color:	White flint
Planting/sowing time:	15 April-15 May, 15 July-15 August; 1 st and 2 nd season plantings
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	5.0 t/ha
Pest resistance:	
Disease resistance:	Streak resistant
Other stresses:	
Nutritional quality:	Quality protein maize
Other qualities:	





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID




COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
COASTAL SAVANNAH, SEMI-DECIDUOUS, TRANSITION ZONE
 Isohyet range 600-1800 mm/year: Coastal Savannah 600-1200, Forest Semi-Deciduous 1200-1600, Transition zone 1100-1600

FERTILIZER RECOMMENDATION 	
Application rate:	200 kg/ha of NPK 15-20-20
Application period:	At seeding
Comment:	4 bags x 50 kg/ha


FERTILIZER RECOMMENDATION 	
Application rate:	50 kg/ha Urea
Application period:	6 weeks after planting
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION 	
Application rate:	
Application period:	
Comment:	



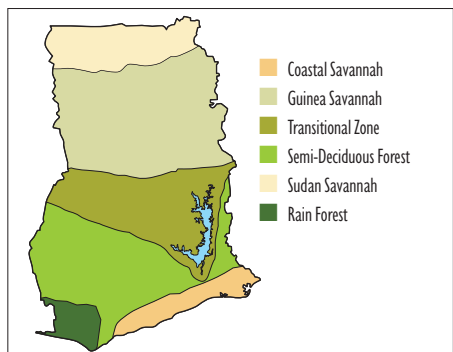
NUTRIENT RECOMMENDATIONS 	
90 N - 60 P ₂ O ₅ - 60 K ₂ O +0.5 Zn	

ORGANIC FERTILIZER RECOMMENDATION 	
Application rate:	When possible: organic manure and compost

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 	
Soil and water conservation techniques:	Plough and harrow as possible
Method of fertilizer application:	Side placement and deep placement for complex fertilizers (CPD) and urea
Amendments:	Add organic manure as necessary
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, legumes)



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

MAIZE <i>Zea mays</i>	
Variety name:	CSIR-Akposoe
Local name:	Akposoe
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm between rows, 45 cm between hills, 2 plants per hill; Population per hectare 59,259
Grain/flesh color:	White
Planting/sowing time:	15 April–15 May: first season 15 July–15 August: second season
Production system:	Rainfed
Days from planting to maturity:	85 (early maturity)
Potential yield:	5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Quality protein maize
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
90 N - 60 P ₂ O ₅ - 60 K ₂ O +2.1 Zn	(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P ₂ O ₅ - 40 K ₂ O +2.1 Zn	(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	NPK: side placement. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, and biochar, lime, and rock phosphate to reduce soil acidity.
Water management:	Use supplementary irrigation where appropriate even during rainfed production, including water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms. Use Emamectin benzoate or Bacillus thuringiensis (or Bt) and rotate chemicals to avoid resistance.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes on the same field over time is recommended, e.g., intercropping/mixed cropping, or continuous monocropping.

FERTILIZER RECOMMENDATION ①	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

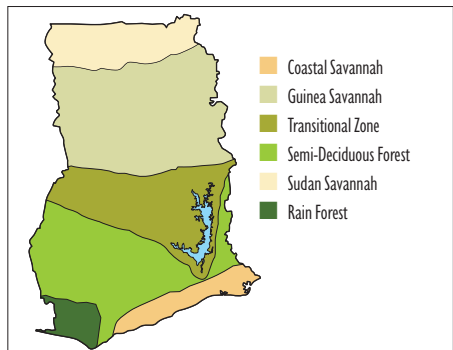
ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

MAIZE *Zea mays* ✓

Variety name:	CSIR-Golden Jubilee
Local name:	Golden Jubilee
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm between rows, 45 cm between holes, 2 plants per hill; population per hectare 59,259
Grain/flesh color:	Yellow
Planting/sowing time:	15 April–15 May: first season 15 July–15 August: second season
Production system:	Rainfed
Days from planting to maturity:	110
Potential yield:	5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Quality protein maize
Other qualities:	Nutritious for people and for livestock

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
 (Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
 (Sudan Savannah and Guinea Savannah)
 For farm specific recommendations, farmers should conduct soil testing.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha

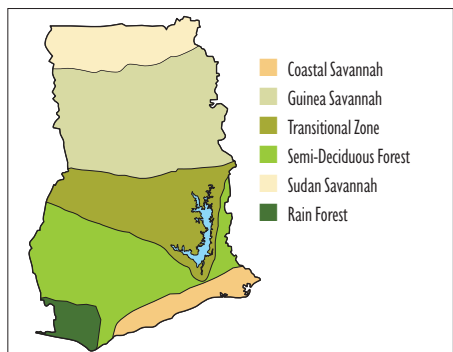


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	NPK: side placement. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, and biochar, lime, and rock phosphate to reduce soil acidity.
Water management:	Use supplementary irrigation where appropriate even during rainfed production, including water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms. Use Emamectin benzoate or Bacillus thuringiensis (or Bt) and rotate chemicals to avoid resistance.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes on the same field over time is recommended, e.g., intercropping/mixed cropping, or continuous monocropping.



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

MAIZE *Zea mays* ✓

Variety name:	CSIR-CRI Tintim
Local name:	Tintim
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	75 cm between rows, 45 cm between holes, 2 plants per hole; population per hectare: 59,259
Grain/flesh color:	White (flint type)
Planting/sowing time:	15 April–15 May: first season 15 July–15 August: second season
Production system:	Rainfed
Days from planting to maturity:	110-115
Potential yield:	7.9 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Moderately tolerant to drought
Nutritional quality:	—
Other qualities:	Very good for domestic purposes

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
 (Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
 (Sudan Savannah and Guinea Savannah)
 For farm specific recommendations, farmers should conduct soil testing.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	NPK: side placement. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, and biochar, lime, and rock phosphate to reduce soil acidity.
Water management:	Use supplementary irrigation where appropriate even during rainfed production, including water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms. Use Emamectin benzoate or Bacillus thuringiensis (or Bt) and rotate chemicals to avoid resistance.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes on the same field over time is recommended, e.g., intercropping/mixed cropping, or continuous monocropping.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha

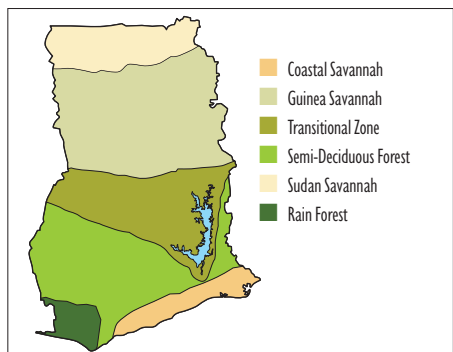
Sudan and Guinea Zones:

Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

MAIZE <i>Zea mays</i>	
Variety name:	CSIR-Aburohema
Local name:	Aburohema
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm between rows, 45 cm between hills, 2 seeds per hill; Population per hectare 59,259
Grain/flesh color:	White
Planting/sowing time:	15 April–15 May: first season 15 July–15 August: second season
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Quality protein maize
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
90 N - 60 P ₂ O ₅ - 60 K ₂ O +2.1 Zn	(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P ₂ O ₅ - 40 K ₂ O +2.1 Zn	(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.	

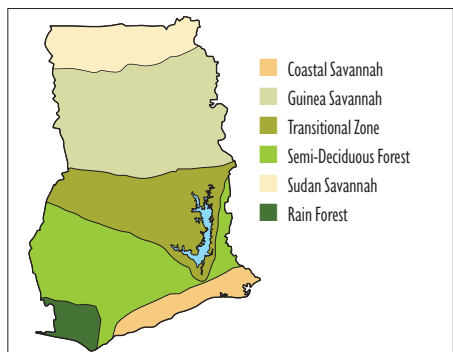
GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	NPK: side placement. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, and biochar, lime, and rock phosphate to reduce soil acidity.
Water management:	Use supplementary irrigation where appropriate even during rainfed production, including water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms. Use Emamectin benzoate or Bacillus thuringiensis (or Bt) and rotate chemicals to avoid resistance.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes on the same field over time is recommended, e.g., intercropping/mixed cropping, or continuous monocropping.

FERTILIZER RECOMMENDATION ①	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha




WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	CSiR-Sanzal-sima
Local name:	Sanzal-sima
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm between rows, 45 cm between hills, 2 seeds per hill; Population per hectare 59,259
Grain/flesh color:	White
Planting/sowing time:	15 April–15 May: first season 15 July–15 August: second season
Production system:	Rainfed
Days from planting to maturity:	110
Potential yield:	5.4 t/ha
Pest/disease resistance or other stress:	Tolerant of drought, lodging, rust, blight, maize streak virus and curvularia
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
90 N - 60 P ₂ O ₅ - 60 K ₂ O +2.1 Zn	(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P ₂ O ₅ - 40 K ₂ O +2.1 Zn	(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨	
Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	NPK: side placement. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, and biochar, lime, and rock phosphate to reduce soil acidity.
Water management:	Use supplementary irrigation where appropriate even during rainfed production, including water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms. Use Emamectin benzoate or Bacillus thuringiensis (or Bt) and rotate chemicals to avoid resistance.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes on the same field over time is recommended, e.g., intercropping/mixed cropping, or continuous monocropping.

FERTILIZER RECOMMENDATION ①	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1,2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

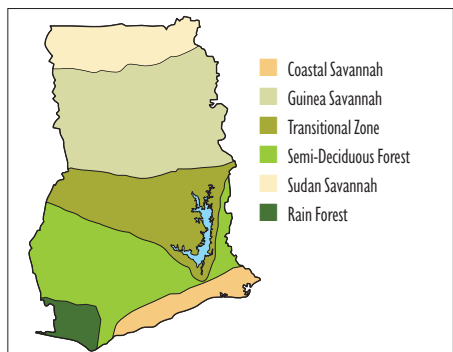
ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②	
Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

MILLET *Pennisetum glaucum* ✓

Variety name:	Kaanati
Local name:	Arrow Head
Variety type:	OPV
Quantity of seed:	7.5 kg/ha
Spacing:	75 cm x 30 cm
Grain/flesh color:	Ivory
Planting/sowing time:	June–July, immediately as rains start
Production system:	Rainfed
Days from planting to maturity:	70-80
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to Downy Mildew disease
Other stresses:	—
Nutritional quality:	Rich in grain iron and zinc.
Other qualities:	Excellent for porridge, foroforo, cakes and T-Zed

NUTRIENT RECOMMENDATIONS ↩

20-40 N - 40 P₂O₅ - 40 K₂O
 For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: Organic manure and compost highly recommended.



FERTILIZER RECOMMENDATION ①

Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2	180 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application period	Apply at planting
Comment 1	4 bags x 50 kg/ha
Comment 2	3.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate 1, or	25 kg/ha Urea
Application rate 2	50 kg/ha Urea
Application period	Point application
Comment 1	0.5 bags x 50 kg/ha
Comment 2	1 bag x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇳

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible, as well as water harvesting techniques.
Method of fertilizer application:	Band placement.
Amendments:	Compost and organic manure should be applied.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	IPM.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation (legumes). Intercropping with legumes in smallholdings.

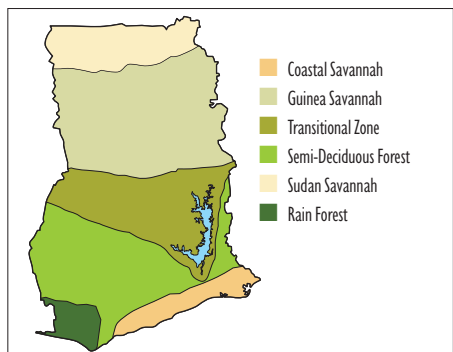




SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	Afribeh-Naara
Local name:	Tongo Yellow
Variety type:	OPV
Quantity of seed:	7.5 kg/ha
Spacing:	75 cm x 30 cm
Grain/flesh color:	Yellow
Planting/sowing time:	June–July
Production system:	Rainfed
Days from planting to maturity:	70-80 (early maturity)
Potential yield:	1.9 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to downy mildew
Other stresses:	—
Nutritional quality:	Rich in grain iron and zinc
Other qualities:	Excellent for Forofofo



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-20-20 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	180 kg/ha NPK 11-22-21 +5 S +0.7 Zn +.5 B
Application period:	At planting
Comment:	3.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	Urea: (1) 25 kg/ha or (2) 50 kg/ha
Application period:	Point application
Comment:	(1) 0.5 bags or (2) 1 bag x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Band placement.
Amendments:	Add organic manure when available.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	IPM.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation (legumes). Intercropping with legumes in smallholdings.

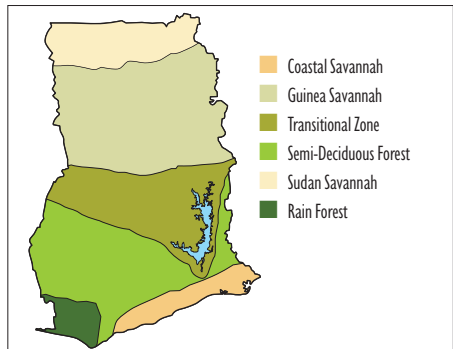
NUTRIENT RECOMMENDATIONS ↻	
20–40 N - 40 P ₂ O ₅ - 40 K ₂ O	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, and/or biostimulants.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

SORGHUM *Sorghum bicolor* ✓

Variety name:	WAAPP-Naara
Local name:	So x Sat
Variety type:	OPV
Quantity of seed:	7.5 kg/ha
Spacing:	75 cm x 30 cm
Grain/flesh color:	Grey
Planting/sowing time:	June–July, immediately the rains start
Production system:	Rainfed
Days from planting to maturity:	70-80 (early maturity)
Potential yield:	2.1 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to downy mildew
Other stresses:	Tolerant of drought
Nutritional quality:	Rich in grain iron and zinc
Other qualities:	Multipurpose (fodder, grain, fuel wood)

NUTRIENT RECOMMENDATIONS ↻

20–40 N - 40 P₂O₅ - 40 K₂O
 For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, compost, biofertilizers, and/or biostimulants.



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 15-20-20 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	180 kg/ha NPK 11-22-21 +5 S +0.7 Zn +.5 B
Application period:	At planting
Comment:	3.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	Urea: (1) 25 kg/ha or (2) 50 kg/ha
Application period:	Point application
Comment:	(1) 0.5 bags or (2) 1 bag x 50 kg/ha

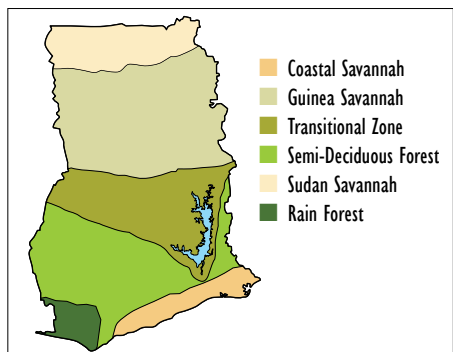
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Band placement.
Amendments:	Add organic manure must be applied.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	IPM.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation (legumes). Intercropping with legumes in smallholdings.




RICE *Oryza sativa* 

Variety name:	IR841
Local name:	AGRA Rice
Variety type:	Pure line
Quantity of seed:	15-20 kg transplanting; 20-30 kg direct seeding
Spacing:	
Grain/flesh color:	White
Planting/sowing time:	July (rainfed), December-January (off-season)
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	130
Potential yield:	8 t/ha
Pest resistance:	
Disease resistance:	Tolerant to rice blast
Other stresses:	
Nutritional quality:	Aromatic
Other qualities:	Long grain


WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SOUTH SUDAN (KARFIGUELA)
 Isohyet range mm/year

FERTILIZER RECOMMENDATION 

Application rate:	300 kg/ha NPK (NPK 15-20-20)
Application period:	NPK two (02) weeks after sowing/transplanting
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 

Application rate:	100kg /ha Uree
Application period:	NPK six (06) weeks after sowing/transplanting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 

Application rate:	
Application period:	
Comment:	


NUTRIENT RECOMMENDATIONS 

90 N - 30 P₂O₅ - 30 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 

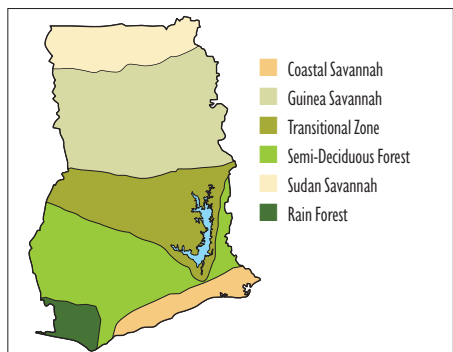
Application rate: When possible

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 

Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure as much as possible
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range 600-1,800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	CSIR-Malimali
Local name:	Malimali
Variety type:	Pure line
Quantity of seed:	50 kg/ha drilling/dibbling; 20 kg/ha for transplanting; 125 kg/ha broadcasting (for large farms with no planters)
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	June–July rainfed, Jan–Feb off-season
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	125-130
Potential yield:	7-8 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Long grain, slightly aromatic

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨

Soil and water conservation techniques:	Lowland: Plough, band, and rotovate. Upland: Plough, harrow, bund, use of cover crops, SAWAH technology. Irrigated: flush with fresh water to control salt and iron toxicity. Minimum/zero till.
Method of fertilizer application:	NPK: banding and broadcasting. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, gypsum and biochar. Upland: lime, biochar, and rock phosphate to reduce soil acidity.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Monitor and scare <i>Quelea quelea</i> , set traps for rodents. Seed treatment against blast, brown spot and bacteria leaf blight, control for rice yellow mottled virus (RYMV).
Weed control:	Good agricultural practices (Integrated weed management) and combinations of herbicides can be adopted (pre-emergence, early post- and post-emergence).
Cropping system:	Rotation with grain legumes and vegetables on the same field over time is recommended. Rice-fish culture.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

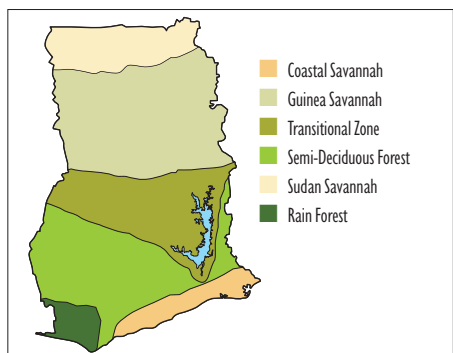
Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress, then 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags)
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range 600-800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	CSIR-Savanna
Local name:	Savanna
Variety type:	Pure line
Quantity of seed:	50 kg/ha drilling/dibbling; 20 kg/ha for transplanting; 125 kg/ha broadcasting (for big farms with no planters)
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	June–July rainfed, Jan–Feb off-season
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	125-130
Potential yield:	7-8 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to blast
Other stresses:	—
Nutritional quality:	Non-aromatic
Other qualities:	Long grain

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨

Soil and water conservation techniques: Lowland: Plough, band, and rotovate. Upland: Plough, harrow, bund, use of cover crops, SAWAH technology. Irrigated: flush with fresh water to control salt and iron toxicity. Minimum/zero till.

Method of fertilizer application: NPK: banding and broadcasting. Urea: deep placement (UDP).

Amendments: Add organic manure if possible, gypsum and biochar. Upland: lime, biochar, and rock phosphate to reduce soil acidity.

Water management: See “Soil and Water Conservation Techniques”.

Pest management: Monitor and scare *Quelea quelea*, set traps for rodents. Seed treatment against blast, brown spot and bacteria leaf blight, control for rice yellow mottled virus (RYMV).

Weed control: Good agricultural practices (Integrated weed management) and combinations of herbicides can be adopted

Cropping system: Rotation (legumes, vegetables). Rice-fish culture.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate 1, **or** 300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, **or** 275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3 400 kg/ha NPK 20-10-10 +3 S

Application period 1, 2 Apply at planting
Application period 3 Apply 6 bags at planting and 2 bags 4 weeks later

Comment 1 6 bags x 50 kg/ha
Comment 2 5.5 bags x 50 kg/ha
Comment 3 8 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, **or** 300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, **or** 200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, **or** 450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4 400 kg/ha NPK 20-10-10 +3 S

Application period 1, 2 Apply at planting
Application period 3 Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4 Apply 6 bags at planting and 2 bags 4 weeks later

Comment 1, 2 4 bags x 50 kg/ha
Comment 3 9 bags x 50 kg/ha
Comment 4 8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate: 100 kg/ha Urea
Application period 3-5 weeks after planting, or split application: first top dress, then 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment 2 bags x 50 kg/ha

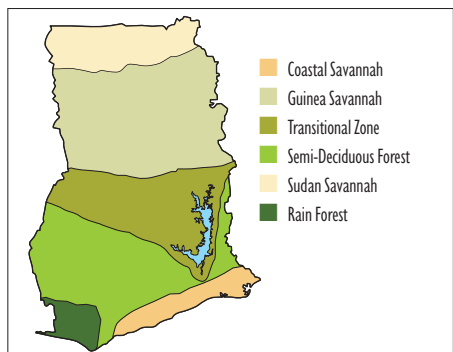
Sudan and Guinea Zones:

Application rate 1, **or** 150 kg/ha Urea
Application rate 2, **or** 175 kg/ha Urea
Application rate 3, **or** 10.5 kg/ha MOP
Application rate 4 50 kg/ha Urea

Application period 1 3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2 3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3 At planting (together with the first 6 bags).
Application period 4 6 weeks after planting
Comment 1 3 bags x 50 kg/ha
Comment 2 3.5 bags x 50 kg/ha
Comment 3 0.2 bags x 50 kg/ha
Comment 4 1 bag x 50 kg/ha



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range 600-1,800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Jasmine 85
Local name:	Gbewaa Rice
Variety type:	Pure line
Quantity of seed:	50 kg/ha transplanting; 20-30 kg/ha direct seeding; 125 kg/ha broadcasting (for large farms with no planters)
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	July rained, Jan–Feb off-season
Production system:	Rained lowland/irrigated, Upland
Days from planting to maturity:	110-115
Potential yield:	5-6 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to rice blast
Other stresses:	Drought, salinity, iron toxicity, etc.
Nutritional quality:	Protein, pro-vitamin A, micronutrients
Other qualities:	Aromatic, long grain, cooking quality

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
(Transition, Semi-Deciduous and Rain Forest)
100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
(Sudan Savannah and Guinea Savannah)
For farm specific recommendations, farmers should conduct soil testing.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇨

Soil and water conservation techniques:	Lowland: Plough, band, and rotovate. Upland: Plough, harrow, bund, use of cover crops, SAWAH technology. Irrigated: flush with fresh water to control salt and iron toxicity. Minimum/zero till.
Method of fertilizer application:	NPK: banding and broadcasting. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, gypsum and biochar. Upland: lime, biochar, and rock phosphate to reduce soil acidity.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Monitor and scare Quelea Quelea, set traps for rodents. Seed treatment against blast, brown spot and bacteria leaf blight, control for rice yellow mottled virus (RYMV).
Weed control:	Good agricultural practices (Integrated weed management) and combinations of herbicides can be adopted
Cropping system:	Rotation with grain legumes and vegetables on the same field over time is recommended. Rice-fish culture.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	8 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	200 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3, or	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application rate 4	400 kg/ha NPK 20-10-10 +3 S
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Application period 4	Apply 6 bags at planting and 2 bags 4 weeks later
Comment 1, 2	4 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha
Comment 4	8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

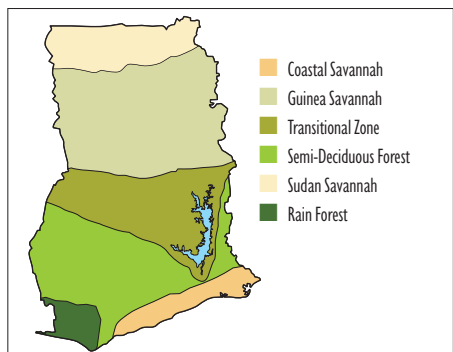
Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:	
Application rate:	100 kg/ha Urea
Application period	3-5 weeks after planting, or split application: first top dress, then 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Comment	2 bags x 50 kg/ha
Sudan and Guinea Zones:	
Application rate 1, or	150 kg/ha Urea
Application rate 2, or	175 kg/ha Urea
Application rate 3, or	10.5 kg/ha MOP
Application rate 4	50 kg/ha Urea
Application period 1	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting
Application period 2	3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting
Application period 3	At planting (together with the first 6 bags).
Application period 4	6 weeks after planting
Comment 1	3 bags x 50 kg/ha
Comment 2	3.5 bags x 50 kg/ha
Comment 3	0.2 bags x 50 kg/ha
Comment 4	1 bag x 50 kg/ha



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 600-1,800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	CSIR-Banse
Local name:	Banse
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting; 50 kg/ha direct seeding; 125 kg/ha broadcasting (for large farms with no planters)
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	June–July rainfed, Jan–Feb off-season
Production system:	Rainfed lowland/irrigated
Days from planting to maturity:	125-130
Potential yield:	7-8 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to rice blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Non-aromatic, medium grain

NUTRIENT RECOMMENDATIONS ↻

90 N - 60 P₂O₅ - 60 K₂O +2.1 Zn
 (Transition, Semi-Deciduous and Rain Forest)
 100 N - 40 P₂O₅ - 40 K₂O +2.1 Zn
 (Sudan Savannah and Guinea Savannah)
 For farm specific recommendations, farmers should conduct soil testing.

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🇸🇵

Soil and water conservation techniques:	Lowland: Plough, band, and rotovate. Upland: Plough, harrow, bund, use of cover crops, SAWAH technology. Irrigated: flush with fresh water to control salt and iron toxicity. Minimum/zero till.
Method of fertilizer application:	NPK: banding and broadcasting. Urea: deep placement (UDP).
Amendments:	Add organic manure if possible, gypsum and biochar. Upland: lime, biochar, and rock phosphate to reduce soil acidity.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Monitor and scare <i>Quelea Quelea</i> , set traps for rodents. Seed treatment against blast, brown spot and bacteria leaf blight, control for rice yellow mottled virus (RYMV).
Weed control:	Good agricultural practices (Integrated weed management) and combinations of herbicides can be adopted.
Cropping system:	Rotation with grain legumes and vegetables on the same field over time is recommended. Rice-fish culture.

FERTILIZER RECOMMENDATION ①

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate 1, **or** 300 kg/ha NPK 15-20-20 +0.7 Zn
 Application rate 2, **or** 275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
 Application rate 3 400 kg/ha NPK 20-10-10 +3 S

Application period 1, 2 Apply at planting
 Application period 3 Apply 6 bags at planting and 2 bags 4 weeks later

Comment 1 6 bags x 50 kg/ha
 Comment 2 5.5 bags x 50 kg/ha
 Comment 3 8 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, **or** 200 kg/ha NPK 15-20-20 +0.7 Zn
 Application rate 2, **or** 200 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
 Application rate 3, **or** 450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
 Application rate 4 400 kg/ha NPK 20-10-10 +3 S

Application period 1, 2 Apply at planting
 Application period 3 Apply 6 bags at planting and 3 bags 4 weeks later
 Application period 4 Apply 6 bags at planting and 2 bags 4 weeks later

Comment 1, 2 4 bags x 50 kg/ha
 Comment 3 9 bags x 50 kg/ha
 Comment 4 8 bags x 50 kg/ha

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost, biofertilizers, biostimulants, and inoculants.

FERTILIZER RECOMMENDATION ②

Transitional, Semi-deciduous, & Rain Forest Zones:

Application rate: 100 kg/ha Urea
 Application period 3-5 weeks after planting, or split application: first top dress, then 1 bag 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting

Comment 2 bags x 50 kg/ha

Sudan and Guinea Zones:

Application rate 1, **or** 150 kg/ha Urea
 Application rate 2, **or** 175 kg/ha Urea
 Application rate 3, **or** 10.5 kg/ha MOP
 Application rate 4 50 kg/ha Urea

Application period 1 3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1 bag 5-6 weeks after planting

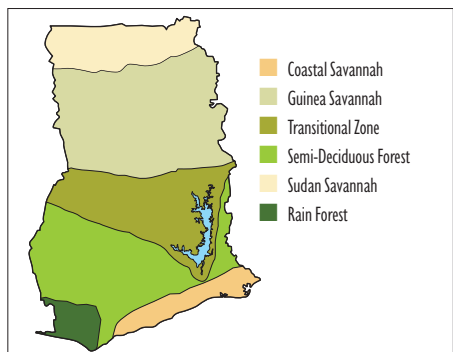
Application period 2 3-5 weeks after planting or split application; first top dress, 2 bags 3-4 weeks after planting and second top dress 1.5 bag 5-6 weeks after planting

Application period 3 At planting (together with the first 6 bags).
 Application period 4 6 weeks after planting

Comment 1 3 bags x 50 kg/ha
 Comment 2 3.5 bags x 50 kg/ha
 Comment 3 0.2 bags x 50 kg/ha
 Comment 4 1 bag x 50 kg/ha



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GUINEA SAVANNAH, SUDAN SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200, Semi-Deciduous Forest 1,200-1,600; Transitional Zone 1,100-1,600

SORGHUM *Sorghum bicolor* ✓

Variety name:	Kapaala
Local name:	—
Variety type:	Pure line
Quantity of seed:	10 kg/ha
Spacing:	75 cm x 30 cm
Grain/flesh color:	White with colorless glumes
Planting/sowing time:	June–July (early planting is always preferred)
Production system:	Rainfed
Days from planting to maturity:	100-110
Potential yield:	4 t/ha
Pest resistance:	—
Disease resistance:	Susceptible to head bug grain mould complex particularly if maturity coincides with heavy rainfall
Other stresses:	—
Nutritional quality:	—
Other qualities:	Very good malting and brewing qualities

NUTRIENT RECOMMENDATIONS ↻

80 N - 60 P₂O₅ - 60 K₂O +1.2 Zn
For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①

Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate 1, or	75 kg/ha Urea
Application rate 2, or	110 kg/ha Urea
Application rate 3	63 kg/ha MOP
Application period 1, 2	3-5 weeks after planting
Application period 3	At planting together with the first 6 bags
Comment 1	1.5 bags x 50 kg/ha
Comment 2	2.2 bags x 50 kg/ha
Comment 3	1.3 bags x 50 kg/ha

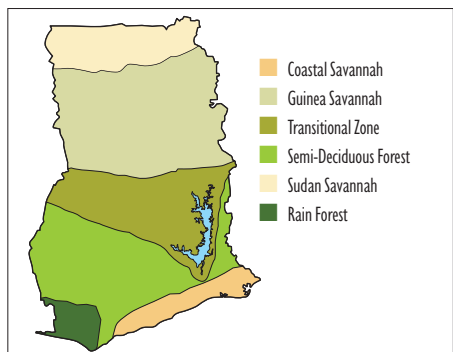
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	Side placement for NPK and burying for Urea fertilizers.
Amendments:	As needed, add organic manure and/or biochar, lime, and rock phosphate to manage soil acidity.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes is recommended (inter-cropping/mixed cropping/continuous monocropping on the same field over time).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-Deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

SORGHUM *Sorghum bicolor* ✓

Variety name:	Dorado
Local name:	—
Variety type:	Pure line
Quantity of seed:	10 kg/ha
Spacing:	75 cm x 30 cm
Grain/flesh color:	White with red glumes
Planting/sowing time:	June–July (early planting is always preferred)
Production system:	Rainfed
Days from planting to maturity:	110-115
Potential yield:	3.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Susceptible to head bug grain mould complex particularly if maturity coincides with heavy rainfall
Nutritional quality:	Very good
Other qualities:	Very good malting and brewing qualities

NUTRIENT RECOMMENDATIONS ↻

80 N - 60 P₂O₅ - 60 K₂O +1.2 Zn
For farm specific recommendations, farmers should conduct soil testing

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure and/or compost.



FERTILIZER RECOMMENDATION ①

Application rate 1, or	300 kg/ha NPK 15-20-20 +0.7 Zn
Application rate 2, or	275 kg/ha NPK 11-22-21 +5 S +0.7 Zn +0.5 B
Application rate 3	450 kg/ha NPK 23-10-5 +2 MgO +3 S +0.3 Zn
Application period 1, 2	Apply at planting
Application period 3	Apply 6 bags at planting and 3 bags 4 weeks later
Comment 1	6 bags x 50 kg/ha
Comment 2	5.5 bags x 50 kg/ha
Comment 3	9 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate 1, or	75 kg/ha Urea
Application rate 2, or	110 kg/ha Urea
Application rate 3	63 kg/ha MOP
Application period 1, 2	3-5 weeks after planting
Application period 3	At planting together with the first 6 bags.
Comment 1	1.5 bags x 50 kg/ha
Comment 2	2.2 bags x 50 kg/ha
Comment 3	1.3 bags x 50 kg/ha

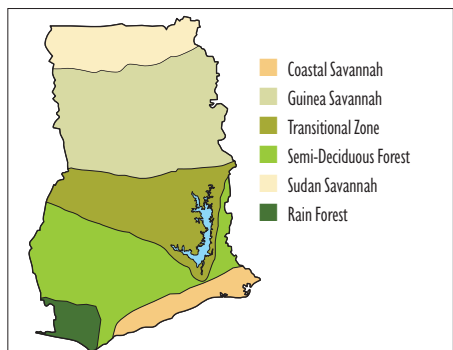
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible.
Method of fertilizer application:	Side placement for NPK and burying for Urea fertilizers.
Amendments:	As needed, add organic manure and/or biochar, lime, and rock phosphate to manage soil acidity.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	Scout for insects and apply pesticide (IPM) especially for Fall Army Worms.
Weed control:	Good agricultural practices (GAP, mechanical weeding) and combinations of herbicides can be adopted.
Cropping system:	Rotation with maize and legumes is recommended (inter-cropping/mixed cropping/continuous monocropping on the same field over time).





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITION ZONE

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

SOYBEAN *Glycine max* ✓

Variety name:	CSIR-Favour
Local name:	Favour
Variety type:	—
Quantity of seed:	40 kg/ha
Spacing:	60 cm x 5 cm (drilling is recommended)
Grain/flesh color:	Cream
Planting/sowing time:	July–August
Production system:	Rainfed
Days from planting to maturity:	115-118
Potential yield:	2-3.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to pod shattering (up to 5% shattering); fairly tolerant to common soybean pests and diseases.
Nutritional quality:	Contains up 43% protein, 18% oil content, and 39.9% carbohydrate.
Other qualities:	Excellent seed quality for soymilk; high and stable yield across many environments

NUTRIENT RECOMMENDATIONS ↻

20 N - 60 P₂O₅ - 30 K₂O +1.2 Zn
For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, apply organic manure, compost, biofertilizers, biostimulants, inoculants



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 12-30-17 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha NPK 4-18-13 +3S+3MgO +6CaO +0.1B
Application period:	At planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	150 kg/ha NPS 14-31-0 +9S +1Zn +1B
Application period:	At planting
Comment:	3 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible, e.g. irrigation, water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	IPM.
Weed control:	Good agricultural practices (Integrated weed management) and combinations of -re-emergence, early post- and post-emergence herbicides herbicides could be adopted.
Cropping system:	Rotation with cereals and intercropping with maize may be applicable. At the least, plant in 3-year rotations.





SOYBEAN <i>Glycine max</i> ✓	
Variety name:	Anidaso
Local name:	—
Variety type:	—
Quantity of seed:	40 kg/ha
Spacing:	60 cm x 5 cm (drilling is recommended)
Grain/flesh color:	Cream
Planting/sowing time:	July–August
Production system:	Rainfed
Days from planting to maturity:	105-115
Potential yield:	1.2-2.8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES

NUTRIENT RECOMMENDATIONS ↻	
20 N - 60 P ₂ O ₅ - 30 K ₂ O +1.2 Zn	
For farm specific recommendations, farmers should conduct soil testing.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, apply organic manure, compost, biofertilizers, biostimulants, inoculants



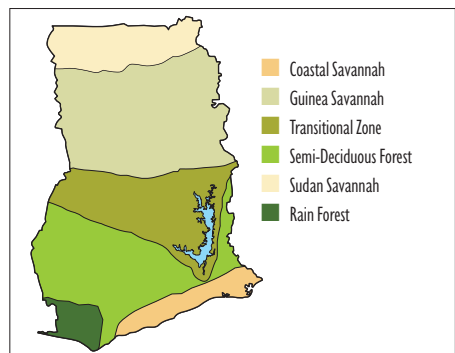
FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 12-30-17 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha NPK 4-18-13 +3S+3MgO +6CaO +0.1B
Application period:	At planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	150 kg/ha NPS 14-31-0 +9S +1Zn +1B
Application period:	At planting
Comment:	3 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏	
Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible, e.g. irrigation, water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See "Soil and Water Conservation Techniques".
Pest management:	IPM.
Weed control:	Good agricultural practices (Integrated weed management) and combinations of pre-emergence, early post- and post-emergence herbicides could be adopted.
Cropping system:	Rotation with cereals and intercropping with maize may be applicable. At the least, plant in 3-year rotations.

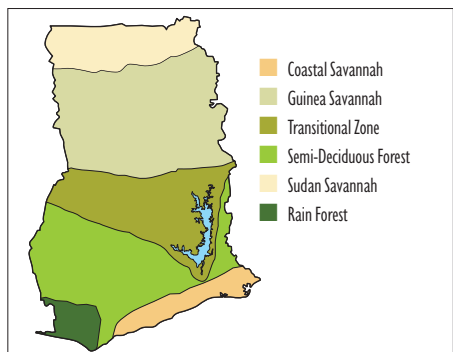


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITION ZONE
Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, GUINEA SAVANNAH, TRANSITION ZONE

Isohyet range 600-1,800 mm/year: Coastal Savannah 600-1,200; Semi-deciduous Forest 1,200-1,600; Transition Zone 1,100-1,600

SOYBEAN *Glycine max* ✓

Variety name:	Salintuya-1
Local name:	—
Variety type:	—
Quantity of seed:	40 kg/ha
Spacing:	60 cm x 5 cm (drilling is recommended)
Grain/flesh color:	Cream
Planting/sowing time:	July–August
Production system:	Rainfed
Days from planting to maturity:	115
Potential yield:	Over 2.5 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to bacterial pustule and <i>Cercospora</i> leaf spot
Other stresses:	—
Nutritional quality:	—
Other qualities:	Excellent seed quality; good trap-crop for <i>S. hermonthica</i>

NUTRIENT RECOMMENDATIONS ↻

20 N - 60 P₂O₅ - 30 K₂O +1.2 Zn
For farm specific recommendations, farmers should conduct soil testing.

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, apply organic manure, compost, biofertilizers, biostimulants, inoculants



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 12-30-17 +0.7 Zn
Application period:	At planting
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha NPK 4-18-13 +3S+3MgO +6CaO +0.1B
Application period:	At planting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	150 kg/ha NPK 14-31-0 +9S +1Zn +1B
Application period:	At planting
Comment:	3 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

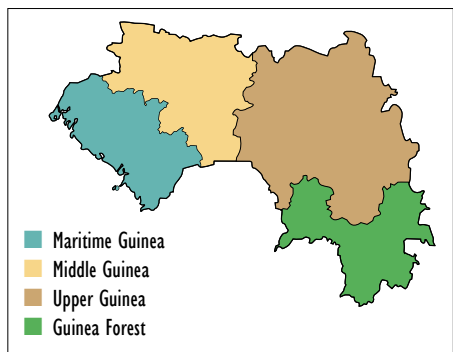
Soil and water conservation techniques:	Plough and harrow where applicable, mulching, use of cover crops. Minimum/zero tillage is also a recommended land preparation method when possible, e.g. irrigation, water harvesting techniques.
Method of fertilizer application:	Drilling along the row and band placement. Seed inoculation is recommended.
Amendments:	Compost, organic manure, rock phosphate, and TSP could be applied.
Water management:	See “Soil and Water Conservation Techniques”.
Pest management:	IPM.
Weed control:	Good agricultural practices (Integrated weed management) and combinations of pre-emergence, early post- and post-emergence herbicides herbicides could be adopted.
Cropping system:	Rotation with cereals and intercropping with maize may be applicable. At the least, plant in 3-year rotations.



GUINEA



RICE <i>Oryza sativa</i>	
Variety name:	CK 21
Local name:	CK 21
Variety type:	Improved
Quantity of seed:	60 kg/ha broadcasting and 40 kg/ha transplanting
Spacing:	Broadcasting
Grain/flesh color:	White
Planting/sowing time:	July and November
Production system:	Irrigated
Days from planting to maturity:	120
Potential yield:	4 t/ha
Pest resistance:	Good
Disease resistance:	Good
Other stresses:	Good
Nutritional quality:	Low demand for nutrients
Other qualities:	Weed-tolerant


WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 2000-4000 mm/year

NUTRIENT RECOMMENDATIONS
ORGANIC FERTILIZER RECOMMENDATION
 Application rate:

FERTILIZER RECOMMENDATION 1

Application rate:	150 kg/ha
Application period:	At soil preparation
Comment:	Base fertilizer

FERTILIZER RECOMMENDATION 2

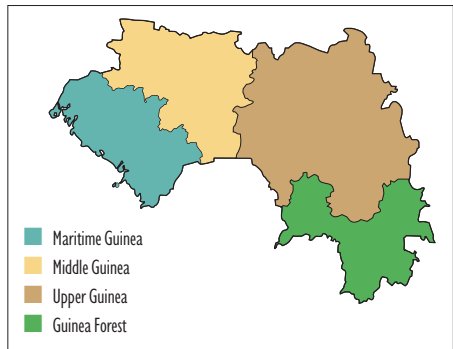
Application rate:	50 kg/ha
Application period:	At tillering (21 days)
Comment:	

FERTILIZER RECOMMENDATION 3

Application rate:	50 kg/ha
Application period:	Bolting (75 th day)
Comment:	


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Gravity-fed irrigation
Method of fertilizer application:	Broadcasting
Amendments:	Liming
Water management:	
Pest management:	Chemical
Weed control:	Chemical (herbicide)
Cropping system:	Pure irrigated cultivation


WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range 2,000-4,000 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	CK801
Local name:	—
Variety type:	Improved
Quantity of seed:	60 kg/ha by broadcasting, or 40 kg/ha by transplanting
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	July–November
Production system:	Irrigated/lowland
Days from planting to maturity:	120
Potential yield:	6 t/ha
Pest resistance:	Good
Disease resistance:	Good
Other stresses:	Resistant
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

—

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: —



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK
Application period:	Basal
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha NPK
Application period:	Tillering
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha NPK
Application period:	Bolting
Comment:	1 bag x 50 kg/ha


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	—
Method of fertilizer application:	Broadcast.
Amendments:	—
Water management:	Irrigation-drainage.
Pest management:	Chemical.
Weed control:	Chemical.
Cropping system:	Monoculture.



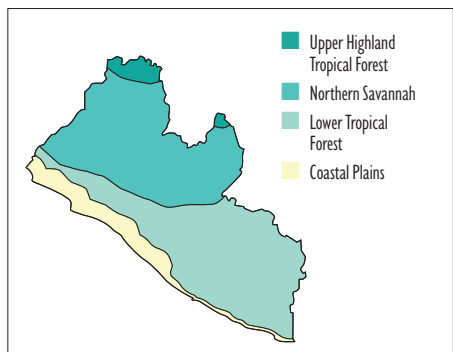
NOTES

Two columns of horizontal dotted lines for writing notes.

LIBERIA



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
UPPER HIGHLAND TROPICAL FOREST
Isohyet range 1,500-2,000 mm/year

CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	Bassa Girl
Local name:	—
Variety type:	OPV
Quantity of planting material:	—
Spacing:	1 m x 1 m
Skin color of root:	—
Planting/sowing time:	April–May
Production system:	Upland rainfed
Days from planting to maturity:	300-330
Potential yield:	8 t/ha
Pest resistance:	Low
Disease resistance:	Low
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
68 N - 12 P ₂ O ₅ - 88 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	148 kg/ha Urea
Application period:	2-6 weeks after planting
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	60 kg/ha SSP
Application period:	2-6 weeks after planting
Comment:	1.2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	147 kg/ha MOP
Application period:	2-6 weeks after planting
Comment:	3 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow, and/or minimum/zero tillage.
Method of fertilizer application:	Side placement, broadcasting.
Amendments:	—
Water management:	Upland rainfed.
Pest management:	Scout for insects and apply pesticide (IPM).
Weed control:	Good agricultural practices (manual weeding) and use of herbicide.
Cropping system:	Intercrop legumes.



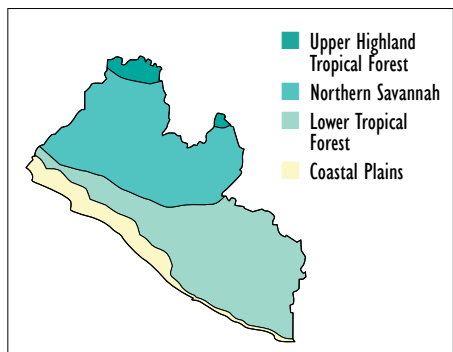


RICE <i>Oryza sativa</i>	
Variety name:	Nerica L19
Local name:	
Variety type:	OPV
Quantity of seed:	
Spacing:	25 cm x 25 cm
Grain/flesh color:	White
Planting/sowing time:	March-April
Production system:	Rainfed/irrigated
Days from planting to maturity:	90-100
Potential yield:	5 t/ha
Pest resistance:	Low
Disease resistance:	Low
Other stresses:	
Nutritional quality:	
Other qualities:	


 WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID

NUTRIENT RECOMMENDATIONS	
Application rate:	120 N - 50 P ₂ O ₅ - 30 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	


 COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
UPPER HIGHLAND TROPICAL FOREST
 Isohyet range 1500-2000 mm/year

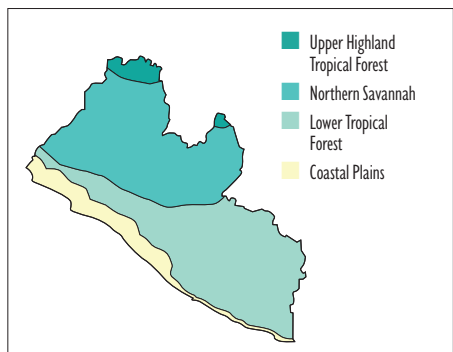
FERTILIZER RECOMMENDATION ①	
Application rate:	80 kg Urea
Application period:	During transplanting
Comment:	1.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg SSP
Application period:	During transplanting
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg MOP
Application period:	During transplanting
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	80 kg d Uree
Application period:	2 à 3 weeks after transplanting
Comment:	1.6 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow, puddling, leveling, bunding, minimum/zero tillage
Method of fertilizer application:	Side placement, broadcasting, urea deep placement (UDP)
Amendments:	
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (manual weeding) and use of herbicide
Cropping system:	Continous monocropping


WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
UPPER HIGHLAND TROPICAL FOREST
 Isohyet range 1,500-2,000 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Lac 23
Local name:	—
Variety type:	OPV
Quantity of seed:	—
Spacing:	25 cm x 25 cm
Grain/flesh color:	Red
Planting/sowing time:	March–April
Production system:	Upland rainfed
Days from planting to maturity:	120
Potential yield:	4 t/ha
Pest resistance:	Low
Disease resistance:	Low
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
120 N - 50 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION ↻	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	80 kg/ha Urea
Application period:	During planting
Comment:	1.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha SSP
Application period:	During planting
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha MOP
Application period:	During planting
Comment:	1 bag x 50 kg/ha

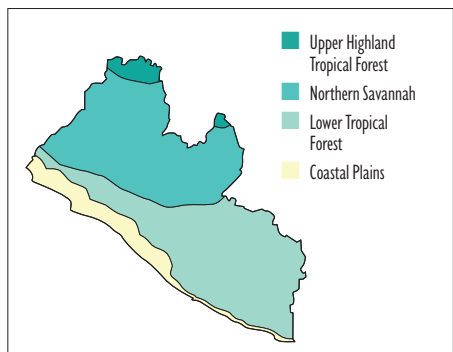
FERTILIZER RECOMMENDATION ④	
Application rate:	80 kg/ha Urea
Application period:	2-3 weeks after transplanting
Comment:	1.6 bag x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT ↻	
Soil and water conservation techniques:	Plough, harrow, and/or minimum/zero tillage.
Method of fertilizer application:	Side placement, broadcast.
Amendments:	—
Water management:	Upland rainfed.
Pest management:	Scout for insects and apply pesticide (IPM).
Weed control:	Good agricultural practices (manual weeding) and use of herbicides.
Cropping system:	Intercrop with cassava and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
UPPER HIGHLAND TROPICAL FOREST
Isohyet range 1,500-2,000 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica 14
Local name:	—
Variety type:	OPV
Quantity of seed:	—
Spacing:	25 cm x 25 cm
Grain/flesh color:	White
Planting/sowing time:	March–April
Production system:	Upland rainfed
Days from planting to maturity:	90-100
Potential yield:	5 t/ha
Pest resistance:	Low
Disease resistance:	Low
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
120 N - 50 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION ↻	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	80 kg/ha Urea
Application period:	During transplanting
Comment:	1.6 bags x 50 kg/ha

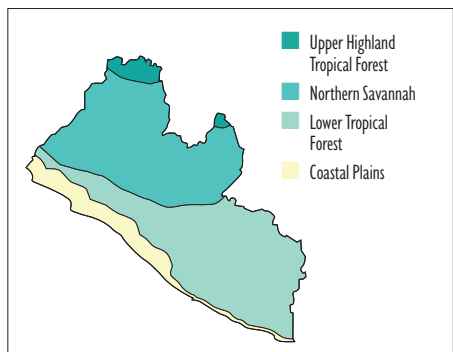
FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha SSP
Application period:	During transplanting
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha MOP
Application period:	During transplanting
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	80 kg/ha Urea
Application period:	2-3 weeks after transplanting
Comment:	1.6 bag x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT ↻	
Soil and water conservation techniques:	Plough, harrow, and/or minimum/zero tillage.
Method of fertilizer application:	Side placement, broadcast.
Amendments:	—
Water management:	Upland rainfed.
Pest management:	Scout for insects and apply pesticide (IPM).
Weed control:	Good agricultural practices (manual weeding) and use of herbicides.
Cropping system:	Intercrop with cassava and legumes.




WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
UPPER HIGHLAND TROPICAL FOREST
 Isohyet range 1,500-2,000 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Suakoko 8
Local name:	—
Variety type:	OPV
Quantity of seed:	—
Spacing:	25 cm x 25 cm
Grain/flesh color:	White
Planting/sowing time:	March–April
Production system:	Rainfed/irrigation
Days from planting to maturity:	120
Potential yield:	4 t/ha
Pest resistance:	Low
Disease resistance:	Low
Other stresses:	—
Nutritional quality:	—
Other qualities:	Resistant to lodging

NUTRIENT RECOMMENDATIONS ↻	
120 N - 50 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	80 kg/ha Urea
Application period:	During transplanting
Comment:	1.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha SSP
Application period:	During transplanting
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha MOP
Application period:	During transplanting
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ④	
Application rate:	80 kg/ha Urea
Application period:	2-3 weeks after transplanting
Comment:	1.6 bag x 50 kg/ha

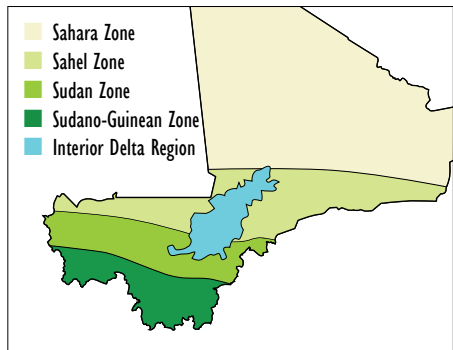
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough, harrow, puddling and leveling, bunding, and/or minimum/zero tillage.
Method of fertilizer application:	Side placement, broadcasting, UDP.
Amendments:	—
Water management:	Basin, alternate wetting and drying, drainage.
Pest management:	Scout for insects and apply pesticide (IPM).
Weed control:	Good agricultural practices (manual weeding) and use of herbicide.
Cropping system:	Continuous monocropping.



MALI



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (FANA, KOUTIALA, KOULIKORO, OUELESSEBOUGOU, KITA)
Isohyet range 600-800 mm/year (monomodal)

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	BRS 293
Local name:	
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) and 40 kg/ha (with fiber)
Spacing:	0.8 x 0.3 (46,734 plants par hectare)
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 May 20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (42.5%)
Pest resistance:	6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seed rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	51 N - 36 P ₂ O ₅ - 36 K ₂ O +12 S +3 B

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①	
Application rate:	150-200 kg/ha (NPKSB 14-18-18+6S+1B)
Application period:	15-20 days after sowing (DAS), apply with urea in case of late sowing
Comment:	3-4 sacs x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS, apply with NPK in case of late sowing
Comment:	1 bag x 50 kg/ha

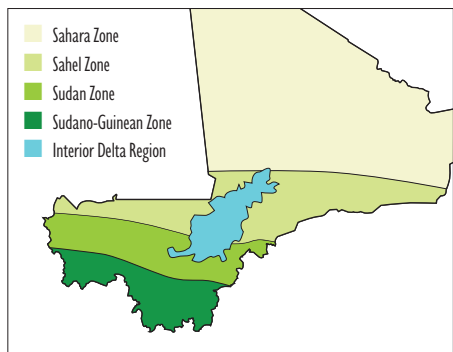
FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Stone lines, mulching, grass strips, minimum/zero tillage, direct seeding, scarification (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	In strip or in hill NPK (in strip) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues, natural phosphate (PNT) following availability and affordability
Water management:	No cotton doesn't like excess water
Pest management:	At least 6 insecticide treatments; for early sowing increase the number of treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-GUINEAN (SIKASSO, BOUGOUNI, KADIOLO, KOLONDJÉBA, YANFOLILA)
Isohyet range 800-1,200 mm/year

COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	NTA 93-15
Local name:	—
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted) and 40 kg/ha (with fiber)
Spacing:	80 cm x 30 cm
Grain/flesh color:	Brown (delinted) and gray
Planting/sowing time:	20 May–20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early and late sowing)
Potential yield:	Cottonseed 2.5-3 t/ha, fiber 42.5%
Pest resistance:	6 insecticide treatments needed
Disease resistance:	Fungicide treatment for seeds
Other stresses:	Drought and flooding
Nutritional quality:	Rich in oil (18-24% oil)
Other qualities:	Livestock feed (cake), quality fiber in length, micronaire, tenacity and grade

NUTRIENT RECOMMENDATIONS ↻	
51 N - 36 P ₂ O ₅ - 36 K ₂ O +12 S +3 B	
Provide K in seed production.	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5-6 t/ha every 2-3 years of manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	150-200 kg/ha NPKSB 14-18-18 +6 S +1 B
Application period:	15-20 DAS. Apply with the urea in case of late sowing.
Comment:	3-4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	50 kg/ha Urea 46%
Application period:	40 DAS. Apply with the NPK in case of late sowing.
Comment:	1 bag x 50 kg/ha

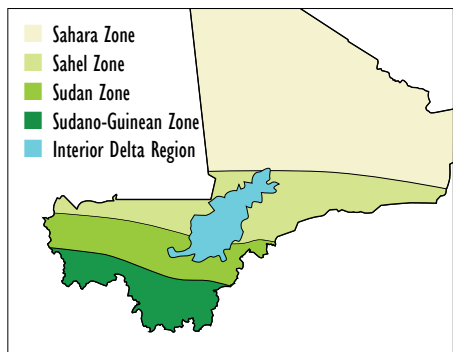
FERTILIZER RECOMMENDATION ③	
Application rate:	50 kg/ha KCl 60%
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Stone barriers, mulching, grass strips, minimum/zero tillage, direct seeding, and scarifiage, according to the type and occupation of the soil and rainfall.
Method of fertilizer application:	NPK (side-dressing) and urea (staking) followed by plowing.
Amendments:	Manure, compost, and crop residues, depending on availability and costs.
Water management:	Cotton does not like excess water.
Pest management:	At least 6 insecticide treatments, fungal seed treatments. For early sowing, increase the number of treatments.
Weed control:	Weeding and herbicide treatments (total, pre-emergence and post-emergence), Weeding and treating as needed.
Cropping system:	Cotton-cereal rotations, agriculture-livestock integration, recycling of crop residues and animal housing. Integration of agriculture and livestock is an essential requirement for cotton production.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KOULIKORO, SEGOU, KAYES)
Isohyet range 600-900 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	PRL73
Local name:	Yèrè wolo
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	
Grain/flesh color:	Red
Planting/sowing time:	1 15 July
Production system:	Rainfed
Days from planting to maturity:	70
Potential yield:	1.5 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	
Nutritional quality:	Protein
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻	
9 N - 9 P ₂ O ₅ - 0 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible

FERTILIZER RECOMMENDATION ①	
Application rate:	50kg/ha DAP
Application period:	At germination
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	



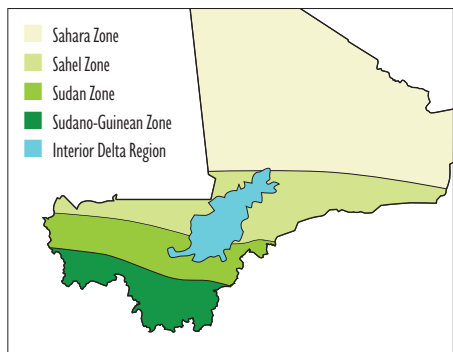
GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Side dressing or broadcast (the fertilizer is buried during soil preparation or applied after the first weeding)
Amendments:	Add organic manure as much as possible
Water management:	Rain, water retention techniques
Pest management:	Seed treatment with fungicides, scout for insects (<i>Maruca vitrata</i>) and treat with pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cereals)



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	IT89KD-374
Local name:	Korobalen
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	1-15 July
Production system:	Rainfed
Days from planting to maturity:	70
Potential yield:	1.5 t/ha
Pest resistance:	Resistant to <i>Striga</i>
Disease resistance:	—
Other stresses:	Drought-resistant
Nutritional quality:	—
Other qualities:	High quality protein



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL ZONE (KOULIKORO, SÉGOU, KAYES,)
Isohyet range 600-800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha DAP
Application period:	At germination
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
Application rate:	9 N - 9 P ₂ O ₅ - 0 K ₂ O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough and harrow.
Method of fertilizer application:	Lateral placement during soil preparation or broadcast after the first weed control.
Amendments:	Added organic fertilizer as much as possible.
Water management:	Water retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide.
Cropping system:	Rotation (cereals).

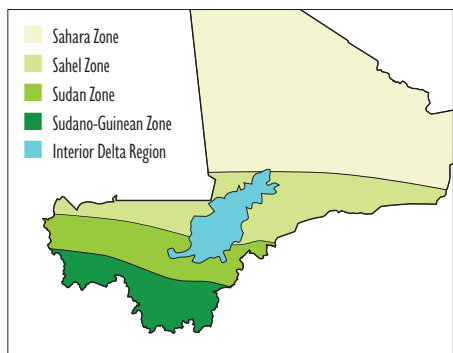




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	IT89KD-245
Local name:	Sangaraka
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	1–15 July
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	2 t kg/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KOULIKORO, SÉGOU, KAYES)
Isohyet range 600–800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha DAP
Application period:	At germination
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
9 N - 9 P₂O₅ - 0 K₂O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

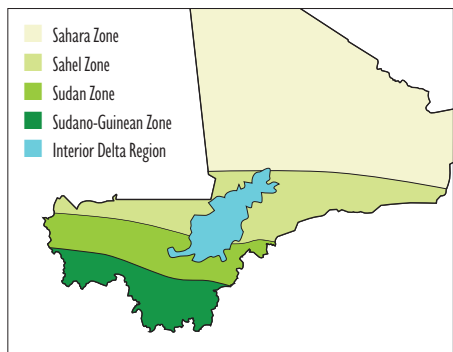


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough and harrow.
Method of fertilizer application:	Side placement or broadcast. Fertilizer is placed during soil preparation or after first weeding.
Amendments:	Added organic fertilizer as much as possible.
Water management:	Water retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide.
Cropping system:	Rotation (cereals).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KOULIKORO, SÉGOU, KAYES)
Isohyet range 600-800 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	IT90KD-372-1-2
Local name:	Wilibali
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	1–15 July
Production system:	Rainfed
Days from planting to maturity:	70
Potential yield:	1.5 t kg/ha
Pest resistance:	Striga
Disease resistance:	—
Other stresses:	Drought-resistant
Nutritional quality:	Protein content
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
9 N - 9 P ₂ O ₅ - 0 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha DAP
Application period:	At germination
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough and harrow.
Method of fertilizer application:	Side placement or broadcast. Fertilizer is placed during soil preparation or after first weeding.
Amendments:	Added organic fertilizer as much as possible.
Water management:	Water retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide.
Cropping system:	Rotation (cereals).

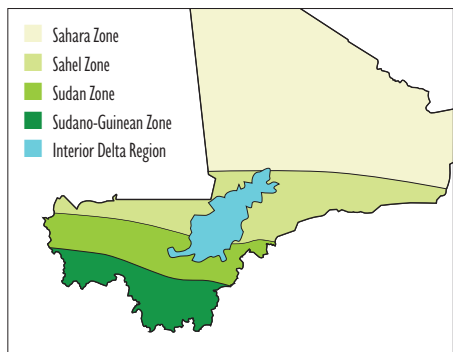




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	CZ06-2-17
Local name:	Simbo
Variety type:	Pure line
Quantity of seed:	10-12 kg/ha
Spacing:	—
Grain/flesh color:	White
Planting/sowing time:	1-15 July
Production system:	Rainfed
Days from planting to maturity:	75
Potential yield:	1.5 t/ha
Pest resistance:	Resistant to <i>Striga</i>
Disease resistance:	—
Other stresses:	Drought-resistant
Nutritional quality:	Protein
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL ZONE (KOULIKORO, SÉGOU, KAYES)
Isohyet range 600-800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha DAP
Application period:	At germination
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
9 N - 9 P₂O₅ - 0 K₂O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

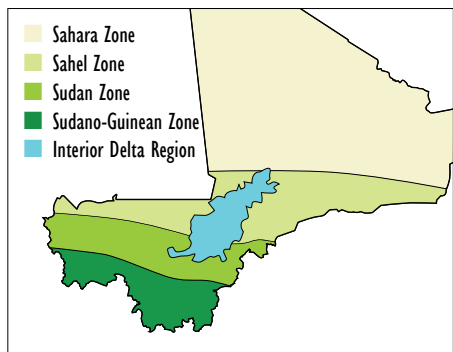


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough and harrow.
Method of fertilizer application:	Lateral placement during soil preparation or broadcast after the first weed control.
Amendments:	Added organic fertilizer as much as possible.
Water management:	Water retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide.
Cropping system:	Rotation (cereals).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (KOULIKORO, SIKASSO)
 Isohyet range 400-800 mm/year

GROUNDNUT *Arachis hypogaea*



Variety name:	ICIAR 19BT
Local name:	
Variety type:	Pure line
Quantity of seed:	50-80 kg/ha
Spacing:	50 cm x 10 cm
Grain/flesh color:	Pale pink
Planting/sowing time:	11 June 15 July
Production system:	Rainfed/irrigated
Days from planting to maturity:	90
Potential yield:	2.5 t/ha
Pest resistance:	Aphid
Disease resistance:	Rosette
Other stresses:	Drought tolerant
Nutritional quality:	Oil content 54%
Other qualities:	

NUTRIENT RECOMMENDATIONS



9 N - 23 P₂O₅

ORGANIC FERTILIZER RECOMMENDATION



Application rate: When possible; 2.5 t/ha

FERTILIZER RECOMMENDATION



Application rate:	200 kg/ha NPK (7-30-7 +4S +0,3B ₂ O ₃ +1,5Mg +12CaO +0,3Zn)
Application period:	At sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION



Application rate:	
Application period:	
Comment:	



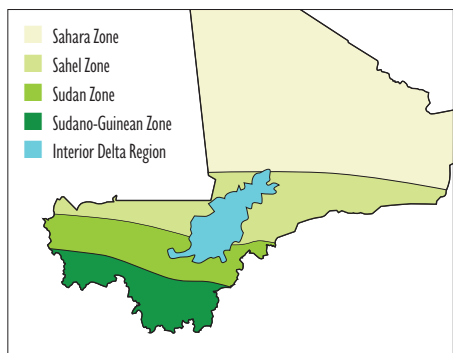
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Side dressing the fertilizer is placed during soil preparation or applied after the first weeding
Amendments:	Add organic material as much as possible
Water management:	Water retention techniques
Pest management:	Seed treatment with fungicides; screening for insects (<i>Maruca vitrata</i>), and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cereal crops)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KOULIKORO, SÉGOU, KAYES)
 Isohyet range 400-700 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	ICGV 86 015
Local name:	Yiriwa tiga
Variety type:	Pure line
Quantity of seed:	50-80 kg/ha
Spacing:	Pale pink
Grain/flesh color:	1 June–15 July
Planting/sowing time:	–
Production system:	Rainfed/irrigated
Days from planting to maturity:	90
Potential yield:	2 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Drought-tolerant
Nutritional quality:	Oil content 52.2%
Other qualities:	Large, long, and aromatic seed, suitable for cooking and good for processing

NUTRIENT RECOMMENDATIONS ↩	
9 N - 23 P ₂ O ₅ - 0 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2.5 t/ha – When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha DAP
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

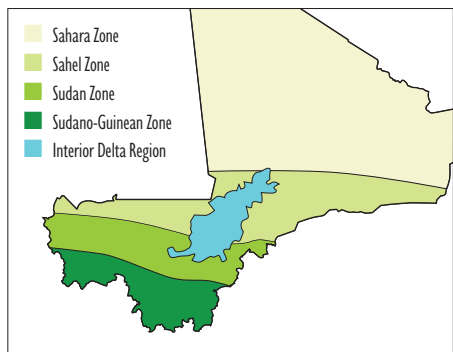
FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏	
Soil and water conservation techniques:	Plough, harrow.
Method of fertilizer application:	Side-dressing. Fertilizer is applied during soil preparation or after the first weeding.
Amendments:	Add organic fertilizer as much as possible.
Water management:	Water-retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cereals).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-GUINEAN (KAYES, SIKASSO)
 Isohyet range 800-1,200 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	ICG 78 78
Local name:	Waliyar tiga
Variety type:	Pure line
Quantity of seed:	50-80 kg/ha
Spacing:	50 cm x 20 cm
Grain/flesh color:	Pale pink
Planting/sowing time:	1 June–15 July
Production system:	Rainfed/irrigated
Days from planting to maturity:	120
Potential yield:	2 t/ha
Pest resistance:	–
Disease resistance:	Yes, early leaf spot
Other stresses:	Drought-tolerant
Nutritional quality:	Oil content 49.0%
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
14 N - 60 P ₂ O ₅ - 14 K ₂ O +0.6 B +3 Mg +24 CaO +0.6 Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2.5 t/ha – When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha DAP
Application period:	At sowing.
Comment:	2 bags x 50 kg/ha

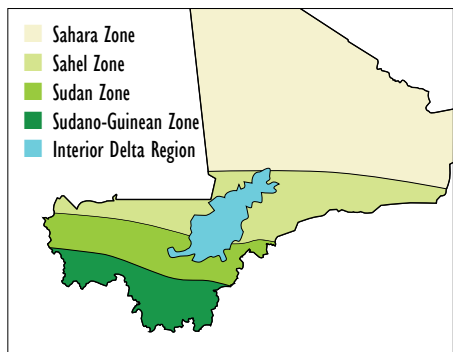
FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow.
Method of fertilizer application:	Side-dressing. Fertilizer is applied during soil preparation or after the first weeding.
Amendments:	Add organic fertilizer as much as possible.
Water management:	Water-retention techniques.
Pest management:	Seed treatment with fungicides; insect screening (<i>Maruca vitrata</i>) and pesticide application (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cereals).




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANIAN (SIKASSO, DIOILA, KITA)
 Isohyet range 600-800 mm/year

MAIZE *Zea mays*


Variety name:	PVAsyn13
Local name:	Kodialan (name of the village which greatly appreciates the variety)
Variety type:	OPV
Quantity of seed:	20-25 kg/ha, taking into account resowing
Spacing:	75 cm x 40 cm, 2 plants per hill
Grain/flesh color:	Orange
Planting/sowing time:	25 June - 15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3-5 t/ha
Pest resistance:	
Disease resistance:	Resistant to rust
Other stresses:	Resistant to drought and striga
Nutritional quality:	Rich in pro-vitamin A
Other qualities:	

NUTRIENT RECOMMENDATIONS

ORGANIC FERTILIZER RECOMMENDATION


Application rate: 10-20 t/ha, when available

FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 17-17-17
Application period:	NPK at germination
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	150 kg/ha Urea
Application period:	Urea at germination (50 kg/ha) and at 30-40 days after sowing (100 kg/ha)
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

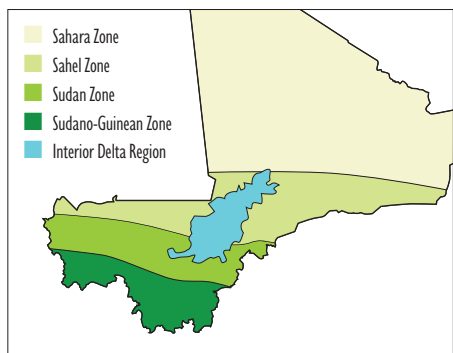
Application rate:	
Application period:	
Comment:	


GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Punch and side placement (direct seeding)
Amendments:	
Water management:	Drainage, bunding, ridged partitions
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cotton, legumes)



MAIZE <i>Zea mays</i>		✓
Variety name:	Sotubaka x CLRCY034	
Local name:	Farako	
Variety type:	Hybrid	
Quantity of seed:	20-25 kg/ha	
Spacing:	80 cm x 50 cm	
Grain/flesh color:	Yellow	
Planting/sowing time:	26 June–15 July	
Production system:	Rainfed	
Days from planting to maturity:	90-100	
Potential yield:	8 t/ha	
Pest resistance:	–	
Disease resistance:	–	
Other stresses:	Resistant to striga and drought	
Nutritional quality:	–	
Other qualities:	–	


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
PRE-GUINEAN
 Isohyet range ≥800 mm/year

NUTRIENT RECOMMENDATIONS

–

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 10-20 t/ha if available



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 17-17-17
Application period:	At germination
Comment:	20 bags x 50 kg/ha

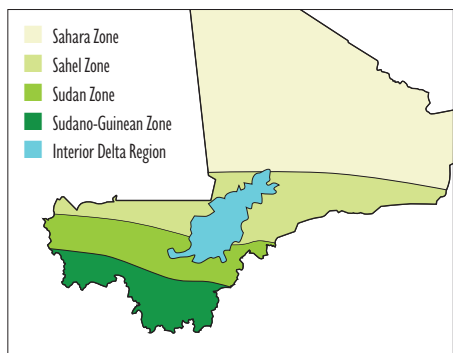
FERTILIZER RECOMMENDATION ②	
Application rate:	150 kg/ha Urea
Application period:	At germination (50 kg/ha) and at 30-40 DAS (100 kg/ha)
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, hoeing, harrowing.
Method of fertilizer application:	Punching and side placement (direct sowing).
Amendments:	–
Water management:	Drainage, bunding.
Pest management:	Scout for Fall Armyworm and apply pesticides (IPM).
Weed control:	GAPs (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes).




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
PRE-GUINEAN
 Isohyet range ≥ 800 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	CLRCY017, CML451, CLRCY034
Local name:	Wassolo
Variety type:	Hybrid
Quantity of seed:	20-25 kg/ha
Spacing:	80 cm x 50 cm
Grain/flesh color:	Yellow
Planting/sowing time:	25 June–15 July
Production system:	Rainfed
Days from planting to maturity:	100-115
Potential yield:	9-10 kg/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Resistant to striga
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
–	–

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	10-20 t/ha if available.



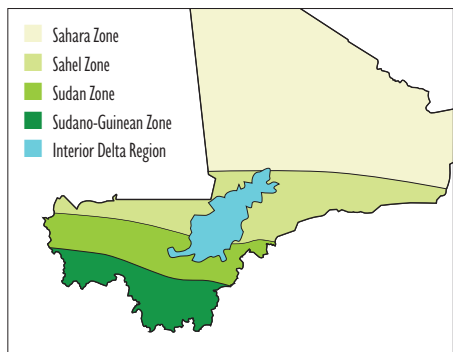
FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 17-17-17
Application period:	At germination
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	150 kg/ha Urea
Application period:	50 kg/ha at germination and 100 kg/ha 30-40 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, till, harrow.
Method of fertilizer application:	Punch and side placement.
Amendments:	–
Water management:	Drainage, bunding.
Pest management:	Scout for fall army worm and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes).




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
INLAND DELTA REGION
 Isohyet range ≥ 600 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	TZEE-Y POP DTSTR
Local name:	Brico
Variety type:	OPV
Quantity of seed:	20-25 kg/ha
Spacing:	75 cm x 40 cm
Grain/flesh color:	Yellow
Planting/sowing time:	25 June–15 July
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3-4 kg/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Resistant to drought and striga
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
–	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	10-20 t/ha if available.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 17-17-17
Application period:	At germination
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	150 kg/ha Urea
Application period:	50 kg/ha at germination and 100 kg/ha 30-40 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, till, harrow.
Method of fertilizer application:	Punch and side placement (direct seeding).
Amendments:	–
Water management:	Drainage, bunding.
Pest management:	Scout for fall army worm and apply pesticides (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides.
Cropping system:	Rotation (cotton, legumes).



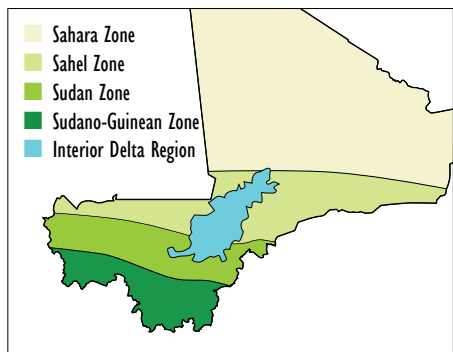


MILLET *Pennisetum glaucum* ✓

Variety name:	Cinzana Mil Aristé
Local name:	
Variety type:	OPV
Quantity of seed:	8-10 kg/ha
Spacing:	1 m x 1 m
Grain/flesh color:	Grey
Planting/sowing time:	15 July
Production system:	Rainfed
Days from planting to maturity:	100
Potential yield:	2.3 t/ha
Pest resistance:	Resistant to head borers <i>Heliocheilus albipunctella</i>
Disease resistance:	Resistant to mildew
Other stresses:	Tolerant to bird attacks
Nutritional quality:	
Other qualities:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KAYES, SEGOU, KOULIKORO, MOPTI)
Isohyet range 400-800 mm/year

NUTRIENT RECOMMENDATIONS ↻

8 N - 9 P₂O₅

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate:

FERTILIZER RECOMMENDATION ①

Application rate:	20 kg DAP
Application period:	At sowing
Comment:	0.4 ba x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	10 kg Urea
Application period:	At sowing
Comment:	0.2 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③


Application rate:	
Application period:	
Comment:	

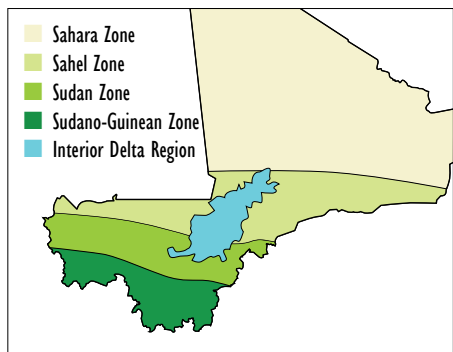
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍


Soil and water conservation techniques:	Zaï holes, stone lines, mulching, grass strip, bunding
Method of fertilizer application:	Strip or point of application
Amendments:	5 t/ha manure, when available
Water management:	Zaï holes, mulching, bunding, water harvesting techniques
Pest management:	Integrated pest management (IPM)
Weed control:	Mechanical weeding
Cropping system:	Rotation, intercropping or mixed cropping with legumes (cowpea or groundnut) or cotton







RICE <i>Oryza sativa</i> 	
Variety name:	DKA-P17
Local name:	Donkafa-P17
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	Light brown
Planting/sowing time:	15 June 15 July
Production system:	Rainfed upland
Days from planting to maturity:	103
Potential yield:	4 t/ha
Pest resistance:	Yes
Disease resistance:	Pyricularia
Other stresses:	Resistant to drought and lodging
Nutritional quality:	
Other qualities:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (SIKASSO, DIOILA, KITA)
 Isohyet range 600-800 mm/year


NUTRIENT RECOMMENDATIONS 	
Application rate:	80 N - 34 P ₂ O ₅ - 34 K ₂ O +0 S +0 B +0 Mn +0 Ca +0 Mg +0 Zn

ORGANIC FERTILIZER RECOMMENDATION 	
Application rate:	5 t/ha manure per year

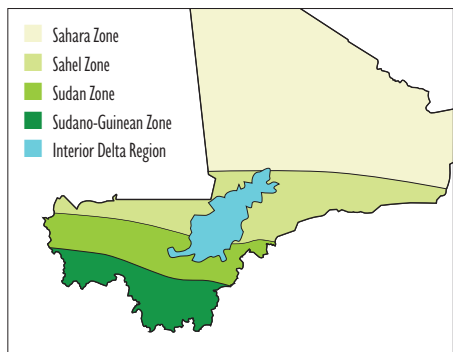
FERTILIZER RECOMMENDATION 	
Application rate:	200 kg/ha NPK 17-17-17
Application period:	15 days after sowing (upon raising)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 	
Application rate:	100 kg/ha urea (in two parts)
Application period:	Two parts: 15 days after sowing and panicular initiation (at tillering and at panicular initiation)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 	
Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 	
Soil and water conservation techniques:	ploughing, harrow, puddling, leveling
Method of fertilizer application:	Urea deep placement (UDP) one granule between 4 plants at 7cm deep
Amendments:	5000 kg/ha of organic manure (if necessary)
Water management:	leveling, alternative wetting and drying
Pest management:	Integrated pest management (IPM) pesticides only if necessary
Weed control:	IWP
Cropping system:	Rotation with potato or sweet potato




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (SIKASSO, DIOÏLA, KITA)
 Isohyet range 600-800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica8
Local name:	NERICA8 ML
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 x 20
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed/Upland
Days from planting to maturity:	90 DAS
Potential yield:	4 t/ha
Pest resistance:	Cecidomyie, foreurs de tige
Disease resistance:	Pyriculariose
Other stresses:	Resistant to drought and lodging
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
80 N - 34 P ₂ O ₅ - 34 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure per year (manure, compost, bio-fertilizers, biostimulants, inoculants)



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 17-17-17
Application period:	15 days after sowing (at emergence)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea (in two doses)
Application period:	2 doses: 15 days after sowing and at panicular initiation (at tillering and at panicular initiation)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

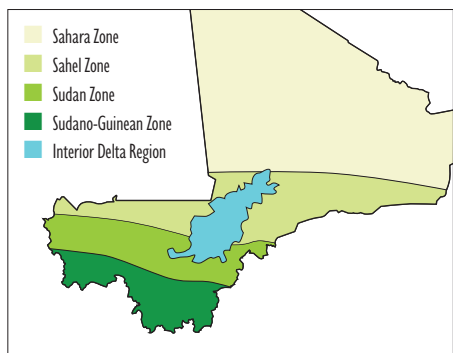


GOOD AGRICULTURAL PRACTICES & MANAGEMENT ↻	
Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Urea deep placement (UDP): 1 granule between 4 plants, at 7 cm depth.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) — pesticides only if necessary.
Weed control:	—
Cropping system:	Rotation with potato or sweet potato.





RICE <i>Oryza sativa</i> ✓	
Variety name:	PSBRC 96
Local name:	Nenekala
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Irrigation
Days from planting to maturity:	110
Potential yield:	8 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Resistant to cold
Nutritional quality:	–
Other qualities:	Long grain


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (OFFICE OF NIGER)
 Isohyet range 200-800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 16-26-12 +5 S +0.3 Zn
Application period:	15 days after transplanting (at tillering)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	200 kg/ha Urea (in two equal doses)
Application period:	2 doses: 50% at tillering (15 DAS) and 50% at panicular initiation
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–



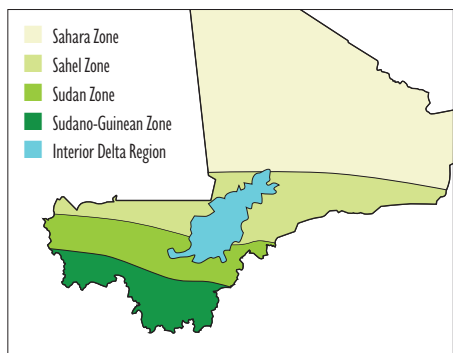
NUTRIENT RECOMMENDATIONS ↻	
80 N - 34 P₂O₅ - 34 K₂O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure per year (manure, compost, bio-fertilizers, biostimulants, inoculants).



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Broadcast.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) and pesticides if necessary.
Weed control:	–
Cropping system:	Rotation with vegetables.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (BAGUINEDA)
 Isohyet range 200-800 mm/year

RICE *Oryza sativa*

Variety name:	08 FAN2
Local name:	Yiriwa Malo
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Irrigated
Days from planting to maturity:	110-115
Potential yield:	8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to cold
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS
80 N - 34 P₂O₅ - 34 K₂O +S +B +Mn +Ca +Mg +Zn
ORGANIC FERTILIZER RECOMMENDATION

Application rate: 5 t/ha organic manure.


FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha DAP
Application period:	At tillering, 7-15 days after transplanting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	222 kg/ha Urea
Application period:	2 doses: half at tillering (17-20 days after transplanting) and half at panicle initiation
Comment:	4.4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

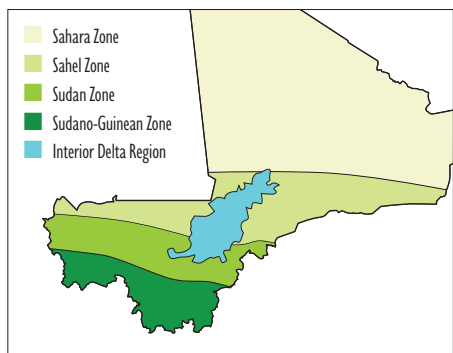

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Broadcast.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) — pesticides only if necessary.
Weed control:	—
Cropping system:	Rotation with vegetables.





RICE <i>Oryza sativa</i>	
Variety name:	WAS 200 B-B-1-1-1
Local name:	Arica10
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed
Days from planting to maturity:	125
Potential yield:	8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to cold
Nutritional quality:	—
Other qualities:	—


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL-SUDAN (SIKASSO, DIOÏLA, KITA)
 Isohyet range 600–800 mm/year

NUTRIENT RECOMMENDATIONS	
80 N - 34 P ₂ O ₅ - 34 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	5 t/ha organic manure per year



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 16-26-12 +5 S +0.3 Zn
Application period:	7-15 days after transplanting (at tillering)
Comment:	4 bags x 50 kg/ha

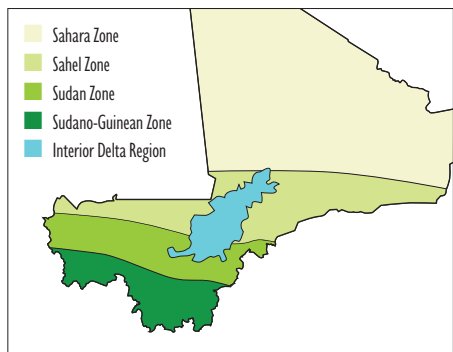
FERTILIZER RECOMMENDATION ②	
Application rate:	200 kg/ha Urea
Application period:	2 doses: half at tillering (7-20 days after planting) and the other half at panicular initiation
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Broadcast.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) — pesticides if needed.
Weed control:	—
Cropping system:	Rotation with vegetables.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN, SUDANO-GUINEAN (SIKASSO)
 Isohyet range 800-1,200 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	DKA 1
Local name:	Doukafa 1
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Rainfed/Lowland
Days from planting to maturity:	115
Potential yield:	8 t/ha
Pest resistance:	–
Disease resistance:	Pyricularia, RYMV (rice yellow mosaic virus)
Other stresses:	Resistant to gnats and drought
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	80 N - 34 P ₂ O ₅ - 34 K ₂ O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure per year



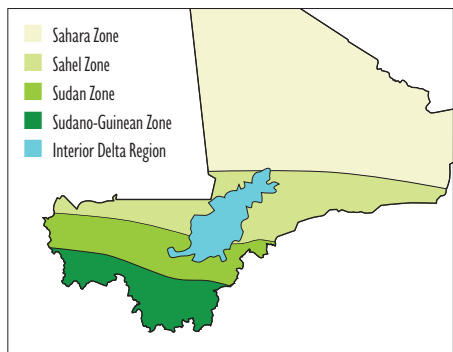
FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 17-17-17
Application period:	7-15 days after transplanting (at tillering)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea (in two doses)
Application period:	7-10 days after transplanting (at tillering)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Urea deep placement (UDP): 1 granule between 4 plants, at 7 cm depth.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) – pesticides only if necessary.
Weed control:	–
Cropping system:	Rotation with potato or sweet potato.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-GUINEAN
 Isohyet range 600-800 mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Swarna2
Local name:	—
Variety type:	Hybrid
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July
Production system:	Irrigation
Days from planting to maturity:	126
Potential yield:	10 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to cold
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
80 N - 34 P ₂ O ₅ - 34 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure per year



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha DAP
Application period:	7-15 days after transplanting (at tillering)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	222 kg/ha Urea
Application period:	2 doses: half at tillering (7-20 days after planting) and the other half at panicular initiation
Comment:	4.4 bags x 50 kg/ha

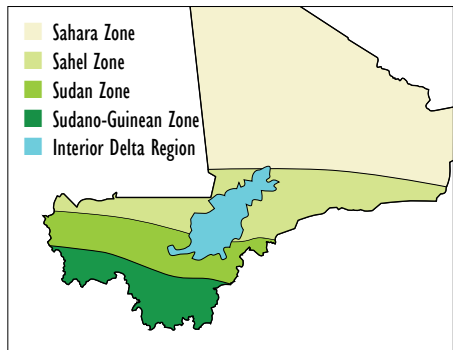
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, leveling.
Method of fertilizer application:	Broadcast.
Amendments:	5 t/ha organic manure.
Water management:	Leveling, alternate wetting and drying.
Pest management:	Integrated pest management (IPM) – pesticides if needed.
Weed control:	—
Cropping system:	Rotation with vegetables.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (KAYES, KOULIKORO, SIKASSO)
 Isohyet range 700-1000 mm/year

SORGHUM *Sorghum bicolor*

Variety name:	06-SB-F5DT-15
Local name:	
Variety type:	Pure line
Quantity of seed:	6 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	June July
Production system:	Rainfed/irrigated
Days from planting to maturity:	70-75
Potential yield:	2 t/ha
Pest resistance:	
Disease resistance:	Anthrax streak
Other stresses:	
Nutritional quality:	
Other qualities:	Non-photosensitive

NUTRIENT RECOMMENDATIONS

41 N - 46 P₂O₅ - 0 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: Organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate: 100 kg/ha NPK 18-46-0
 Application period: 2 weeks after sowing
 Comment: 2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate: 50 kg/ha Urea
 Application period: 30-35 days after sowing (at panicular initiation)
 Comment: 1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:
 Application period:
 Comment:

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Zai holes, stone lines, mulching, grass strip, bunding
Method of fertilizer application:	Strip or point of application
Amendments:	5 t/ha organic manure
Water management:	Zai holes, mulching, bunding, water retention techniques
Pest management:	Integrated pest management (IPM)
Weed control:	Mechanical weeding
Cropping system:	Rotation, intercropping with legumes (cowpea or groundnut) or cotton


SORGHUM *Sorghum bicolor* ✓

Variety name:	Soubatimi
Local name:	—
Variety type:	Pure line
Quantity of seed:	6 kg/ha
Spacing:	80 cm x 40 cm
Grain/flesh color:	White
Planting/sowing time:	June–July
Production system:	Rainfed and irrigated
Days from planting to maturity:	85
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	Striga
Other stresses:	—
Nutritional quality:	—
Other qualities:	Not photosensitive

NUTRIENT RECOMMENDATIONS ↻

41 N - 46 P₂O₅ - K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha organic manure, compost, biofertilizers, biostimulants, and/or inoculants.


FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 17-17-17
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

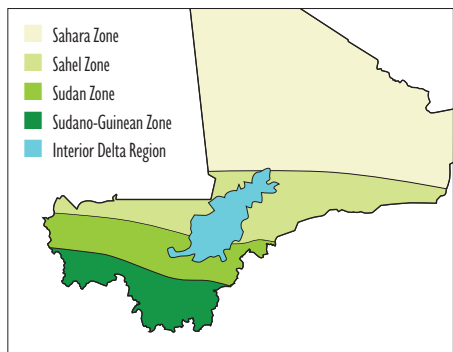
Application rate:	50 kg/ha Urea
Application period:	30-35 DAS, at panicular initiation
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (KAYES, KOULIKORO, SIKASSO)
 Isohyet range 800-1,000 mm/year

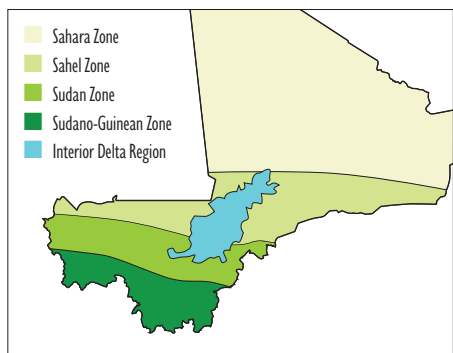
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Zai method, stone lines, mulch, grass strips, ridging.
Method of fertilizer application:	In a band or localised.
Amendments:	5 t/ha manure.
Water management:	Zai method, stone lines, mulch, ridging, water harvesting techniques.
Pest management:	Integrated pest management (IPM).
Weed control:	Mechanical weeding.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut) or cotton.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (KAYES, KOULIKORO, SIKASSO)
Isohyet range 200-600 mm/year

WHEAT *Triticum aestivum* ✓

Variety name:	Diré 12
Local name:	Alkama
Variety type:	Pure line
Quantity of seed:	100 kg/ha
Spacing:	20 cm between rows
Grain/flesh color:	Brown
Planting/sowing time:	15 November–15 December
Production system:	Irrigated
Days from planting to maturity:	90
Potential yield:	4 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	–
Nutritional quality:	Flour contains 11.5% protein
Other qualities:	Good baking quality

NUTRIENT RECOMMENDATIONS ↻

–

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: If available.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha DAP
Application period:	At tillage
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	150 kg/ha Urea
Application period:	Half at tillage and half at panicular initiation
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Tillage, bunding.
Method of fertilizer application:	Broadcast on sufficiently wet ground.
Amendments:	Organic fertilizer.
Water management:	Irrigation: 50 mm every 7 days on well draining soil. Make ridges 80 cm apart if there is a risk of blockage. Avoid waterlogging or prolonged water stress.
Pest management:	IPM.
Weed control:	IWM, herbicides and good agricultural practices.
Cropping system:	Rotation with rice.



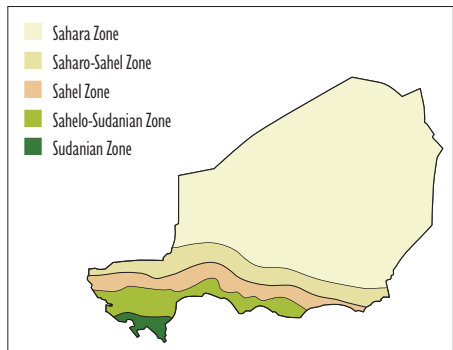
NIGER



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	TN5-78
Local name:	Dan Louma, Jan waké, Jan néra
Variety type:	Self-pollinating
Quantity of seed:	15 kg/ha in monoculture
Spacing:	80 cm x 80/60 cm in monoculture
Grain/flesh color:	Red
Planting/sowing time:	June–July
Production system:	Rainfed
Days from planting to maturity:	75
Potential yield:	2.5 kg/ha (real-world yield 1.5 kg/ha ⁻¹)
Pest resistance:	–
Disease resistance:	–
Other stresses:	Drought-resistant
Nutritional quality:	–
Other qualities:	–



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ADER-DOUTCHI MAGGIA, EASTERN PLAIN, WESTERN PLATEAUS (OUALLAM, TERA, TILLABÉRI, DOSSO, KONNI, MARADI, DAKORO)
 Isohyet range 400-800 mm/year

NUTRIENT RECOMMENDATIONS ↻	
15 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	–



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

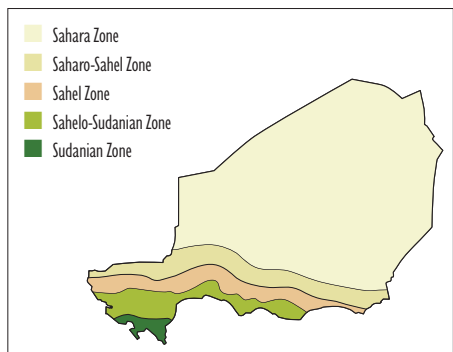


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Scarification before sowing.
Method of fertilizer application:	Spreading before scarification.
Amendments:	Add organic matter if necessary.
Water management:	Scarification.
Pest management:	IPM.
Weed control:	–
Cropping system:	Rotation after cereal, or monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ADER-DOUTCHI MAGGIA, EASTERN PLAIN, WESTERN PLATEAUS (ZINDER, MAGARIA, MARADI, DAKORO)
Isohyet range 400-600 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	UAM09-1055-6
Local name:	Dan Hadjia
Variety type:	Self-pollinating
Quantity of seed:	15 kg/ha in monoculture
Spacing:	80 cm x 80/60 cm in monoculture
Grain/flesh color:	White
Planting/sowing time:	June–July
Production system:	Rainfed
Days from planting to maturity:	65
Potential yield:	2 kg/ha (real-world yield 0.8 kg/ha ¹)
Pest resistance:	Resistant to striga
Disease resistance:	–
Other stresses:	Drought-resistant
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
15 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic materials if needed.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Scarification before sowing.
Method of fertilizer application:	Spreading before scarification.
Amendments:	Add organic matter if necessary.
Water management:	Scarification.
Pest management:	IPM.
Weed control:	–
Cropping system:	Rotation after cereal, or monoculture.

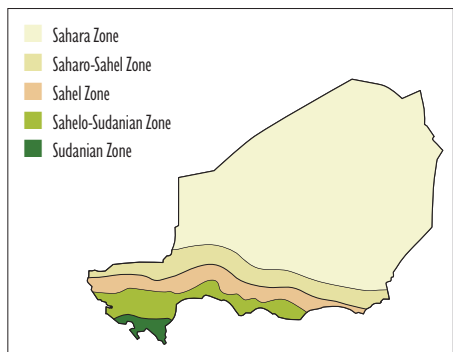




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	KVX30-309-6G
Local name:	—
Variety type:	Self-pollinating
Quantity of seed:	15 kg/ha in monoculture
Spacing:	80 cm x 80/60 cm in monoculture
Grain/flesh color:	White
Planting/sowing time:	June–July
Production system:	Rainfed
Days from planting to maturity:	75
Potential yield:	2 t/ha (real-world yield kg/ha ¹ is 1 t/ha)
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ADER-DOUTCHI MAGGIA, EASTERN PLAIN, WESTERN PLATEAUS (ZINDER, MAGARIA, MARADI, DAKORO, TAHOUA, DOSSO)
 Isohyet range 400-600 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
Application rate:	15 N - 15 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic materials if needed.

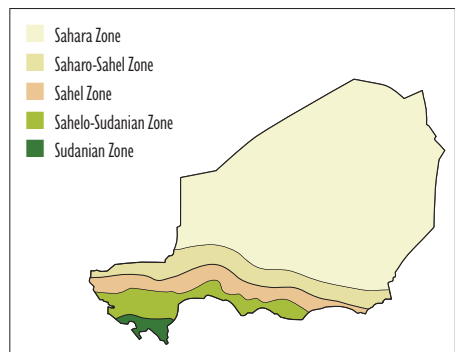


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Scarification before sowing.
Method of fertilizer application:	Spreading before scarification.
Amendments:	Add organic matter if necessary.
Water management:	Scarification.
Pest management:	IPM.
Weed control:	—
Cropping system:	Rotation after cereal, or monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

ADER-DOUTCHI MAGGIA, WESTERN PLATEAU, EASTERN PLAIN (MAGARIA, MARADI, DOSSO, GAYA, DOUTCHI)

Isohyet range 400-600 mm/year

GROUNDNUT *Arachis hypogaea*

Variety name:	RRB
Local name:	—
Variety type:	Self-pollinating
Quantity of seed:	50 kg/ha in monoculture
Spacing:	60 cm x 40 cm in monoculture
Grain/flesh color:	Red
Planting/sowing time:	June
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	2,5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought-resistant
Nutritional quality:	Yes
Other qualities:	—

NUTRIENT RECOMMENDATIONS

15 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate: Add organic materials if needed.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

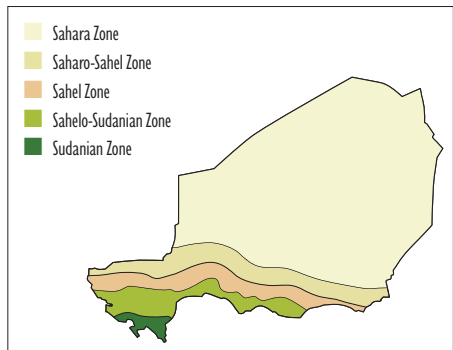
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Scarification before sowing.
Method of fertilizer application:	Spreading before scarification.
Amendments:	Add organic matter if necessary.
Water management:	Scarification.
Pest management:	IPM.
Weed control:	—
Cropping system:	Rotation after cereal, or monoculture.





MAIZE <i>Zea mays</i>		✓
Variety name:	Nagode	
Local name:	—	
Variety type:	Hybrid	
Quantity of seed:	15 kg/ha, monoculture	
Spacing:	80 cm x 80 or 60 cm	
Grain/flesh color:	Yellow-orange	
Planting/sowing time:	June–July	
Production system:	Mixed/rainfed and irrigated	
Days from planting to maturity:	88	
Potential yield:	7 t/ha	
Pest resistance:	—	
Disease resistance:	—	
Other stresses:	—	
Nutritional quality:	Yes	
Other qualities:	—	


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GOULBIS, DALLO, LAC (MARADI, GAYA, KOLLO)
 Isohyet range 400-600 mm/year

NUTRIENT RECOMMENDATIONS		↻
106.5 N - 37 P ₂ O ₅ - 37 K ₂ O		

ORGANIC FERTILIZER RECOMMENDATION		🌿
Application rate:	—	



FERTILIZER RECOMMENDATION		①
Application rate:	250 kg/ha NPK 15-15-15	
Application period:	Before sowing	
Comment:	5 bags x 50 kg/ha	

FERTILIZER RECOMMENDATION		②
Application rate:	150 kg/ha Urea	
Application period:	20-30 DAS	
Comment:	3 bags x 50 kg/ha	

FERTILIZER RECOMMENDATION		③
Application rate:	—	
Application period:	—	
Comment:	—	

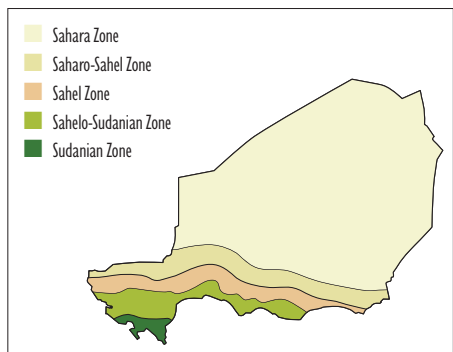


GOOD AGRICULTURAL PRACTICES & MANAGEMENT		👍
Soil and water conservation techniques:	Mulching, ploughing, water and soil conservation (CES).	
Method of fertilizer application:	Side-dressing and staking.	
Amendments:	5 t/ha organic matter.	
Water management:	Drainage, bunding.	
Pest management:	IPM.	
Weed control:	Manual and mechanical weeding.	
Cropping system:	Rotation, inter-cropping/associated crops.	





MAIZE <i>Zea mays</i> ✓	
Variety name:	P3Kollo
Local name:	—
Variety type:	OPV
Quantity of seed:	15 kg/ha, monoculture
Spacing:	80 cm x 80 or 80 cm x 60 cm
Grain/flesh color:	Yellow
Planting/sowing time:	June–July
Production system:	Mixed/rainfed and irrigated
Days from planting to maturity:	90
Potential yield:	4 t/ha
Pest resistance:	—
Disease resistance:	Smut
Other stresses:	—
Nutritional quality:	Yes
Other qualities:	—


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GOULBIS, DALLO, LAC (MARADI, GAYA, KOLLO)
 Isohyet range 400-600 mm/year

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure, when available.



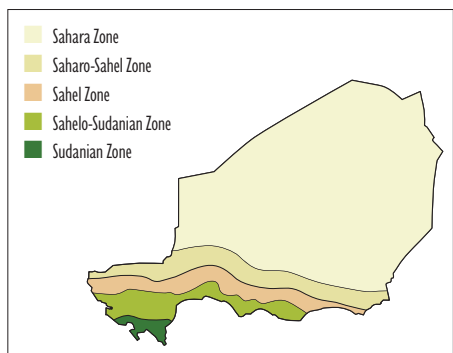
FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	20-30 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, ploughing, water and soil conservation (CES).
Method of fertilizer application:	Side-dressing and staking.
Amendments:	5 t/ha organic matter.
Water management:	Drainage, bunding.
Pest management:	IPM.
Weed control:	Manual and mechanical weeding.
Cropping system:	Rotation, inter-cropping/associated crops.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
BASINS OF MAINÉ SOROA (MARADI, GAYA, KOLLO, DIFFA)
 Isohyet range 200-300 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Maka
Local name:	—
Variety type:	OPV
Quantity of seed:	15 kg/ha, monoculture
Spacing:	80 cm x 80 or 60 cm, en monoculture
Grain/flesh color:	Yellow
Planting/sowing time:	June–July
Production system:	Mixed/rainfed and irrigated
Days from planting to maturity:	85
Potential yield:	6 t/ha
Pest resistance:	Helminthosporia
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Yes
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
70 N - 30 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure, when available



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15
Application period:	Before sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	20-30 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Mulching, ploughing, water and soil conservation (CES).
Method of fertilizer application:	Side-dressing and staking.
Amendments:	5 t/ha organic matter.
Water management:	Mulching, ploughing, water and soil conservation (CES).
Pest management:	IPM.
Weed control:	Manual and mechanical weeding.
Cropping system:	Rotation, inter-cropping/associated crops.




MILLET *Pennisetum glaucum*


Variety name:	Moro
Local name:	Moro
Variety type:	OPV
Quantity of seed:	8 cm x 10 cm (monoculture)
Spacing:	1 m x 1 m (monoculture)
Grain/flesh color:	Light brown
Planting/sowing time:	1 31 July
Production system:	Rainfed
Days from planting to maturity:	40-45
Potential yield:	2.5 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS


61 - N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION


Application rate:

FERTILIZER RECOMMENDATION 1

Application rate:	100 kg NPK 15-15-15
Application period:	15 days after sowing (DAS)
Comment:	2 bag x 50 kg/ha

FERTILIZER RECOMMENDATION 2

Application rate:	100 kg Urea
Application period:	45 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 3

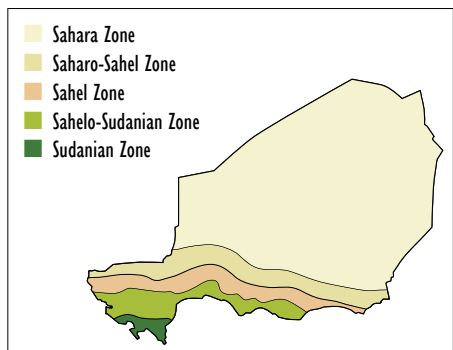
Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Zai holes, stone lines, mulching, grass strips
Method of fertilizer application:	Broadcasting or in hill
Amendments:	5 t/ha organic material
Water management:	Zai holes, mulching, bunding, CES
Pest management:	Integrated pest management (IPM)
Weed control:	Mechanical/manual weed control
Cropping system:	Rotation, intercropping or mixed cropping with legumes or cereals



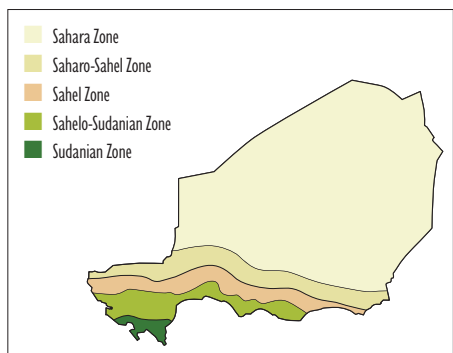
WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (DIFFA)
 Isohyet range 300-400 mm/year



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
EASTERN PLAIN (TANOUT, DAKORO)
 Isohyet range 200-300 mm/year

MILLET *Pennisetum glaucum*

Variety name:	Ankoutess
Local name:	Ankoutass
Variety type:	OPV
Quantity of seed:	8-10 kg/ha, monoculture
Spacing:	1 m x 1 m, monoculture
Grain/flesh color:	Light brown
Planting/sowing time:	June
Production system:	Rainfed
Days from planting to maturity:	85
Potential yield:	1 t/ha
Pest resistance:	Yes
Disease resistance:	Smut/mildew
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS

61 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 5 t/ha organic matter.


FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 15-15-15
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	45 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

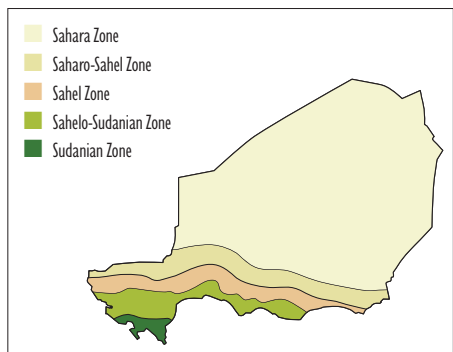

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Zai method, stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic matter.
Water management:	Zai method, mulching, ridging, water and soil conservation (CES).
Pest management:	IPM.
Wind control:	Manual or mechanical wind control.
Cropping system:	Rotation, intercropping or in association with legumes or other cereals.





MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	ICMV IS 89305
Local name:	Doubani
Variety type:	OPV
Quantity of seed:	8-10 kg/ha (monoculture)
Spacing:	75 cm x 1 m (monoculture)
Grain/flesh color:	—
Planting/sowing time:	1 June–15 July
Production system:	Rainfed
Days from planting to maturity:	100
Potential yield:	2 t/ha
Pest resistance:	Moderate
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (DOSSO, TILLABÉRI)
 Isohyet range 400-800 mm/year

NUTRIENT RECOMMENDATIONS ↻	
61 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

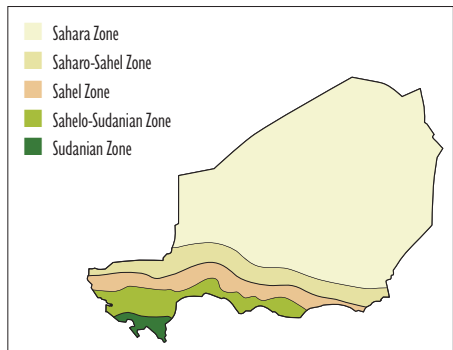


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Zai method, stone lines, mulching, grass strips.
Method of fertilizer application:	Spraying or in pocket.
Amendments:	5 t/ha of organic matter if available.
Water management:	Zai method, mulching, ridging, water and soil conservation (CES).
Pest management:	IPM
Wind controls:	Manual/mechanical methods of wind control.
Cropping system:	Rotation, intercropping or intercropping with legumes or other cereals.





MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	Chakti
Local name:	—
Variety type:	OPV
Quantity of seed:	8-10 kg/ha (monoculture)
Spacing:	75 cm x 1 m (monoculture)
Grain/flesh color:	Light brown
Planting/sowing time:	1 June–15 July
Production system:	Rainfed
Days from planting to maturity:	100
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	Mildew
Other stresses:	—
Nutritional quality:	Rich in iron and zinc
Other qualities:	—


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (TERA, DOSSO, ZINDER, MARADI, TAHOUA, KONNI, DAKORO, TILLABÉRI)
 Isohyet range 400-800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
61 N - 15 P₂O₅ - 15 K₂O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha organic manure

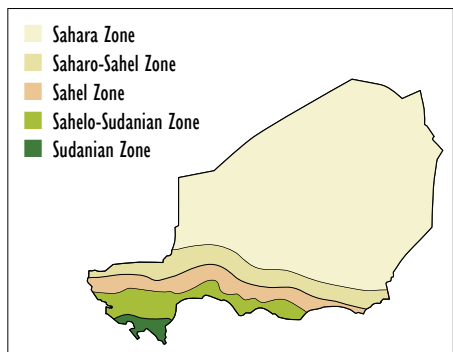


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Zai method, stone lines, mulching, grass strips.
Method of fertilizer application:	Spraying or in pocket.
Amendments:	5 t/ha of organic matter if available.
Water management:	Zai method, mulching, ridging, water and soil conservation (CES).
Pest management:	IPM
Wind controls:	Manual/mechanical methods of wind control.
Cropping system:	Rotation, intercropping or intercropping with legumes or other cereals.





RICE <i>Oryza sativa</i>	
Variety name:	IR 1529
Local name:	
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm; 1-2 plants/pods
Grain/flesh color:	White
Planting/sowing time:	15 June 15 July/15 Nov 15 Dec
Production system:	Irrigation
Days from planting to maturity:	
Potential yield:	6 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Resistant to lodging
Nutritional quality:	
Other qualities:	


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
RIVER ZONE (OFFICE OF NIGER RIVER)
 Isohyet range mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	400 kg/ha of 15-15-15
Application period:	At tillering (7-15 days after transplanting)
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	Two applications: Half at tillering (7-20 days after transplanting) and half at PI (75 DAP)
Comment:	2 bags x 50 kg/ha

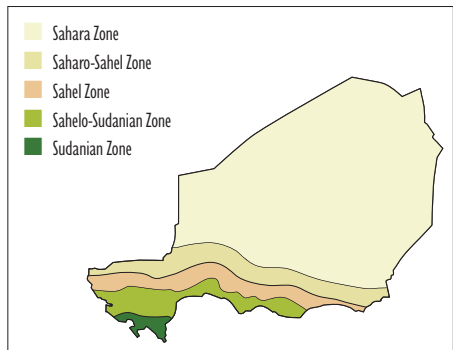
FERTILIZER RECOMMENDATION ③	
Application rate:	
Application period:	
Comment:	



NUTRIENT RECOMMENDATIONS	
106 N - 60 P ₂ O ₅ - 60 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, haarrow, puddling, leveling
Method of fertilizer application:	Broadcasting
Amendments:	5 t/ha manure
Water management:	Leveling, alternate wetting and drying
Pest management:	Integrated pest management (IPM) pesticides only if necessary
Weed control:	Irrigation water productivity (IWP)
Cropping system:	Continous monocropping, rotation with vegetables


WEST AFRICA AGRO-ECOLOGICAL ZONE
ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
NIGER RIVER, LAKE CHAD (AHA DU FLEUVE, KOMADOUGOU)
 Isohyet range – mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Nerica L-49 (synonym: Nerica)
Local name:	—
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July/15 Nov.–15 Dec.
Production system:	Irrigation
Days from planting to maturity:	120-140
Potential yield:	8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought-resistant
Nutritional quality:	Quality protein, pro-vitamin A, micronutrients
Other qualities:	Aromatic, long grain, good preparation quality

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	106 N - 60 P ₂ O ₅ - 60 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha: Add organic materials, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	400 kg/ha NPK 15-15-15
Application period:	At ploughing, 7-15 days after transplanting
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	2 doses: 50% after ploughing (7-20 days after transplanting) and 50% at panicle initiation (75 days after planting)
Comment:	2 bags x 50 kg/ha

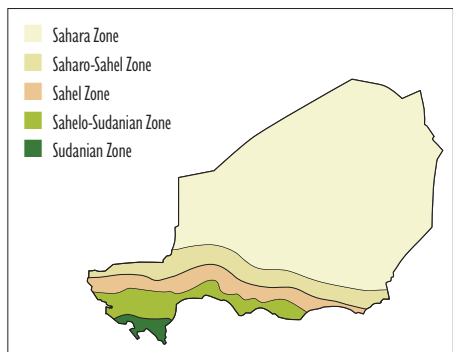
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, mixing, levelling.
Method of fertilizer application:	Broadcasting, UPD/FDP, microdose, fertigation.
Amendments:	5 t/ha organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Soil leveling, soaking and drying of soil as needed (irrigation and techniques de gestion de l'eau).
Pest management:	IPM (pesticides only if necessary) e.g., fungicides, insecticides, seed treatments.
Weed control:	Lutte intégrée contre les mauvaises herbes (IWP).
Cropping system:	Continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (DALLOLS, LAKE CHAD, GOULBIS, RIVER ZONE)
Isohyet range – mm/year

RICE <i>Oryza sativa</i> ✓	
Variety name:	Kogoni 91-1 (syn. Gambiaka)
Local name:	—
Variety type:	Pure line
Quantity of seed:	25-40 kg/ha
Spacing:	20 cm x 20 cm, 1-2 plants/hill
Grain/flesh color:	White
Planting/sowing time:	15 June–15 July/15 Nov.–15 Dec.
Production system:	Irrigation
Days from planting to maturity:	160
Potential yield:	8 t/ha
Pest resistance:	No
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
	106 N - 60 P ₂ O ₅ - 60 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	5 t/ha: Add organic materials, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	400 kg/ha NPK 15-15-15
Application period:	At ploughing, 7-15 days after transplanting
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	2 doses: 50% after ploughing (7-20 days after transplanting) and 50% at panicular initiation (75 days after planting)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

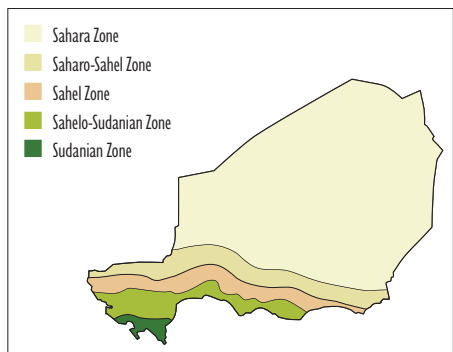


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, mixing, levelling.
Method of fertilizer application:	Broadcasting, UPD/FDP, microdose, fertigation.
Amendments:	5 t/ha organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Soil leveling, soaking and drying of soil as needed (irrigation and techniques de gestion de l'eau).
Pest management:	IPM (pesticides only if necessary) e.g., fungicides, insecticides, seed treatments.
Weed control:	Lutte intégrée contre les mauvaises herbes (IWP).
Cropping system:	Continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

GOULBIS, LAKE CHAD, RIVER AND TRIBUTARIES, WESTERN PLATEAUS (ZINDER, MARADI, TAHOUA, DOSSO, TILLABÉRI)

Isohyet range 300-500 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	Mota Maradi
Local name:	—
Variety type:	Line
Quantity of seed:	15 kg/ha (monoculture)
Spacing:	80 cm x 80 cm or 80 cm x 60 cm
Grain/flesh color:	White
Planting/sowing time:	June–July
Production system:	Rainfed and irrigated
Days from planting to maturity:	75-80
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	Panicle smut
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Non-photosensitive. Bread-making, flour, etc. Tannins, anthocyanins

NUTRIENT RECOMMENDATIONS ↩

61 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: Add organic material when needed.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 15-15-15
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	30-35 DAS at panicular initiation
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Ploughing, harrowing, sowing on the side of ridges.
Method of fertilizer application:	Spreading and localized application.
Amendments:	Add organic manure if needed.
Water management:	Ploughing, partitioned ridges, furrows.
Pest management:	Monitor for pests and apply pesticides (IPM) if needed.
Weed/wind control:	Good agricultural practices (dense seeding, windbreaks, etc.).
Cropping system:	Rotation and crop association with millet.

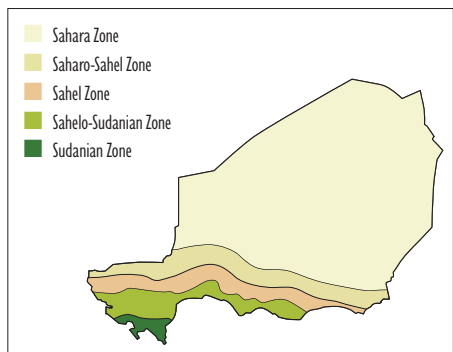




SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	NE223A x 90SN1
Local name:	—
Variety type:	Hybrid
Quantity of seed:	15 kg/ha (monoculture)
Spacing:	80 cm x 60 cm (monoculture)
Grain/flesh color:	White
Planting/sowing time:	June–July
Production system:	Rainfed and irrigated
Days from planting to maturity:	90
Potential yield:	5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Non-photosensitive



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ADER-DOUTCHI MAGGIA, EASTERN PLAIN, WESTERN PLATEAU (TAHOUA, ZINDER, MARADI, DOSSO, TILLABÉRI)
Isohyet range 400-600 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha NPK 15-15-15
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	30-35 DAS at panicular initiation
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS ↻	
83.5 N - 37 P₂O₅ - 37 K₂O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic material as needed (compost, manure, etc.)



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing, sowing on the side of ridges.
Method of fertilizer application:	Spreading and localized application.
Amendments:	Add organic manure if needed.
Water management:	Ploughing, partitioned ridges, furrows.
Pest management:	Monitor for pests and apply pesticides (IPM) if needed.
Weed/wind control:	Good agricultural practices (dense seeding, windbreaks, etc.).
Cropping system:	Rotation and crop association with millet.



NOTES

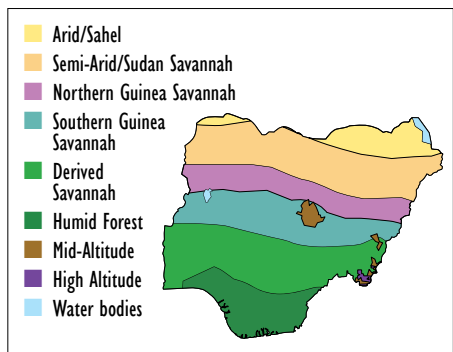
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

NIGERIA



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



CASSAVA *Manihot esculenta* ✓

Variety name:	NICASS 20
Local name:	TME419
Variety type:	
Quantity of seed:	60 bundles/ha (vegetative propagation)
Spacing:	1 m x 1 m (plant 25 cm long cuttings in a slanted position)
Grain/flesh color:	White
Planting/sowing time:	10 April 15 August (bimodal)
Production system:	Rainfed
Days from planting to maturity:	300
Potential yield:	35 t/ha
Pest resistance:	
Disease resistance:	Cassava mosaic disease (CMD)
Other stresses:	
Nutritional quality:	
Other qualities:	High yielding

NUTRIENT RECOMMENDATIONS ↻

90 N - 46 P₂O₅ - 75 K₂O +15 Mg

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: As possible, add one of the following elements: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate:	750 kg/ha NPK 12-12-17 +2 MgO
Application period:	8 weeks after sowing
Comment:	15 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

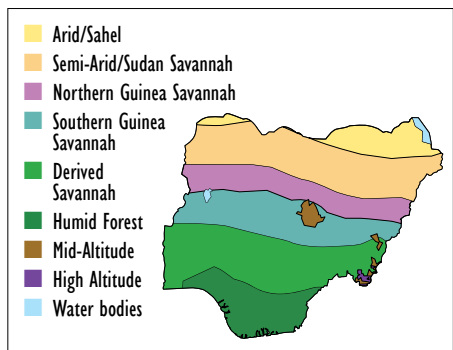


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough, harrow, and ridging across slopes
Method of fertilizer application:	In strips, side dressing, and cover
Amendments:	Add organic manure as necessary
Water management:	Bunding
Pest management:	Control of mealybugs (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (shallow-rooted crops)



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



CASSAVA *Manihot esculenta* ✓

Variety name:	UMUCASS 36
Local name:	IITA TMS 1011368
Variety type:	
Quantity of seed:	60 bundles/ha (vegetative propagation)
Spacing:	1 m x 1 m (plant 25 cm long cuttings in a slanted position)
Grain/flesh color:	White
Planting/sowing time:	10 April 15 August (bimodal)
Production system:	Rainfed
Days from planting to maturity:	300
Potential yield:	46.5 t/ha
Pest resistance:	
Disease resistance:	Cassava mosaic disease (CMD)
Other stresses:	
Nutritional quality:	High quality cassava flour, high beta carotene content, suitable for Gari and Fufu
Other qualities:	High yield

NUTRIENT RECOMMENDATIONS

90 N - 46 P₂O₅ - 75 K₂O + 15 Mg

ORGANIC FERTILIZER RECOMMENDATION

Application rate: As possible, add one of the following elements: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate:	750 kg/ha NPK 12-12-17 +2 MgO
Application period:	8 weeks after sowing
Comment:	15 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

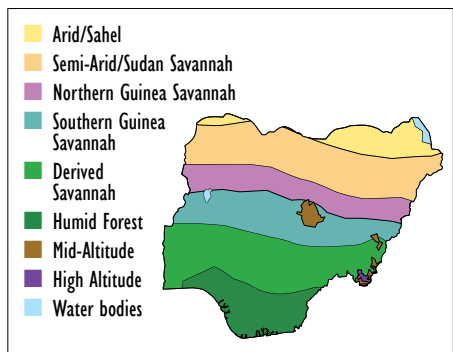


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, and ridging across slopes
Method of fertilizer application:	In strips, side dressing, and cover
Amendments:	Add organic manure as necessary
Water management:	Bunding
Pest management:	Control of mealybugs (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (shallow-rooted crops)



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
NORTHERN GUINEA SAVANNAH
Isohyet range 900-1500 mm/year

CASSAVA *Manihot esculenta* ✓

Variety name:	UMUCASS 43
Local name:	IITATMS 101 I206
Variety type:	Hybrid or OPV
Quantity of seed:	60 bundles/ha (vegetative propagation)
Spacing:	
Grain/flesh color:	White
Planting/sowing time:	10 April - 15 August (unimodal)
Production system:	Rainfed
Days from planting to maturity:	300
Potential yield:	53 t/ha
Pest resistance:	
Disease resistance:	Cassava mosaic disease (CMD)
Other stresses:	Drought tolerant
Nutritional quality:	High quality cassava flour and starch content
Other qualities:	High root yield

NUTRIENT RECOMMENDATIONS

90 N - 46 P₂O₅ - 75 K₂O +S +B +Mn +Ca +15 Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: As possible, add one of the following elements: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate: 750 kg/ha NPK 12-12-17 +2 MgO
Application period: 8 weeks after sowing
Comment: 15 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:
Application period:
Comment:

FERTILIZER RECOMMENDATION ③

Application rate:
Application period:
Comment:

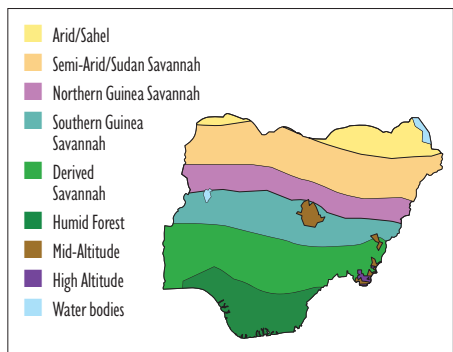
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, and ridging across slopes
Method of fertilizer application:	In strips, side dressing, and cover
Amendments:	Add organic manure as necessary
Water management:	Construct bundings
Pest management:	Control of mealybugs (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (shallow-rooted crops)





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



CASSAVA *Manihot esculenta* ✓

Variety name:	NICASS2
Local name:	TMS-4(2)-1425
Variety type:	Improved
Quantity of cuttings:	60 bundles/ha
Spacing:	1 m x 1 m or 1 m x 80 cm. Plant 25 cm long cuttings in a slanting position 15-16 cm deep.
Flesh color of root:	White
Planting/sowing time:	Forest Zone: 1 st season: 1 April–1 August 2 nd season: 1 August–30 October Savannah Zone: 1 st season: 1 June–30 July 2 nd season: 1 August–30 October
Production system:	Pluvial
Days from planting to maturity:	300
Potential yield:	>35 t/ha
Pest resistance:	–
Disease resistance:	Moderately resistant to CMD
Other stresses:	–
Nutritional quality:	Low cyanide content.
Other qualities:	Early bulking, high-yielding. High dry matter and high starch content.

NUTRIENT RECOMMENDATIONS ↻

90 N - 47 P₂O₅ - 90 K₂O +15 MgO

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

FERTILIZER RECOMMENDATION ①

Application rate:	750 kg/ha NPK 12-12-17 +2 MgO
Application period:	8 weeks after sowing (one application makes best economic sense for farmers)
Comment:	15 bags x 50 kg/ha (best grade recommended)

FERTILIZER RECOMMENDATION ②

Application rate:	600 kg/ha NPK 15-15-15
Application period:	8 weeks after sowing (note as above)
Comment:	12 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	450 kg/ha NPK 20-10-10
Application period:	8 weeks after sowing (note as above)
Comment:	9 bags x 50 kg/ha (most available grade)

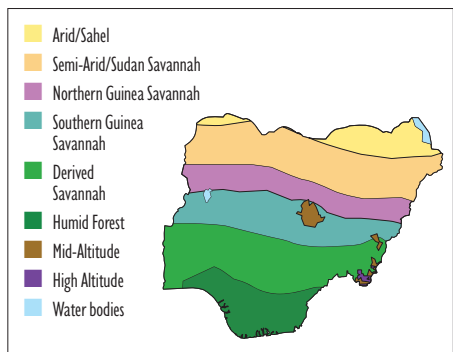
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Plough, harrow, and ridge across slopes or construct mounds. Stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Band, side place, and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	–
Pest management:	Control mealybugs and apply pesticide (IPM) if needed, e.g. fungicides, insecticides, and/or seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (pre-planting: Glyphosate and Paraquat).
Cropping system:	Rotation with shallow-rooted crops such as maize, sorghum, and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



CASSAVA <i>Manihot esculenta</i> ✓	
Variety name:	NICASS1
Local name:	TMS 3572 (syn. Idi-oshe)
Variety type:	Improved
Quantity of cuttings:	60 bundles/ha
Spacing:	1 m x 1 m or 1 m x 80 cm. Plant 25 cm long cuttings in a slanting position 15-16 cm deep.
Flesh color of root:	White
Planting/sowing time:	Forest Zone: 1 st season: 1 April–1 August 2 nd season: 1 August–30 October Savannah Zone: 1 st season: 1 June–30 July 2 nd season: 1 August–30 October
Production system:	Pluvial
Days from planting to maturity:	300
Potential yield:	>35 t/ha
Pest resistance:	–
Disease resistance:	Moderately resistant to CMD
Other stresses:	–
Nutritional quality:	–
Other qualities:	Early bulking, high-yielding. High dry matter and high starch content.

NUTRIENT RECOMMENDATIONS ↻	
	90 N - 47 P ₂ O ₅ - 90 K ₂ O +15 MgO

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.

FERTILIZER RECOMMENDATION ①	
Application rate:	750 kg/ha NPK 12-12-17 +2 MgO
Application period:	8 weeks after sowing (one application makes best economic sense for farmers)
Comment:	15 bags x 50 kg/ha (best grade recommended)

FERTILIZER RECOMMENDATION ②	
Application rate:	600 kg/ha NPK 15-15-15
Application period:	8 weeks after sowing (note as above)
Comment:	12 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	450 kg/ha NPK 20-10-10
Application period:	8 weeks after sowing (note as above)
Comment:	9 bags x 50 kg/ha (most available grade)

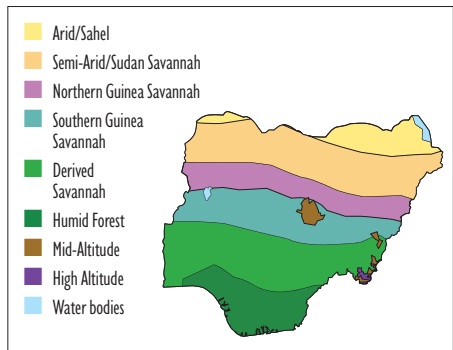
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow, and ridge across slopes or construct mounds. Stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Band, side place, and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	–
Pest management:	Control mealybugs and apply pesticide (IPM) if needed, e.g. fungicides, insecticides, and/or seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (pre-planting: Glyphosate and Paraquat).
Cropping system:	Rotation with shallow-rooted crops such as maize, sorghum, and legumes.



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
HUMID FOREST, DERIVED SAVANNAH, SOUTHERN AND NORTHERN GUINEA SAVANNAH (ADO EKITI, ILE IFE, ENUGU, CALABAR, KADUNA, KAFANCHAN, LAFIA, MINNA, MUBI, LOKOJA, MAKURDI)
 Isohyet range 1,000-3,000 mm/year



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

HUMID FOREST, DERIVED SAVANNAH (ADO EKITI, ILE IFE, ENUGU, IKOM, UMUAHIA, LOKOJA, MAKURDI, IBADAN, AKURE)

Isohyet range 2,000-3,000 mm/year

COCOA <i>Theobroma cacao</i> ✓	
Variety name:	CRINT c1
Local name:	NGTC-10-7
Variety type:	Improved
Quantity of seed:	1,111 kg/ha
Spacing:	3 m x 3 m = 1,111 trees per hectare
Fresh, mature pod color:	Yellow/red
Planting/sowing time:	Perennial
Production system:	Rainfed
Days from planting to maturity:	3 years
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	High in magnesium
Other qualities:	Early maturity and acceptable cocoa base quality

NUTRIENT RECOMMENDATIONS ↩	
60 N - 139 P ₂ O ₅ - 199 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, and if available add any of the following: organic manure, compost, biofertilizers, biostimulants, and inoculants



FERTILIZER RECOMMENDATION ①	
Application rate:	860 kg/ha NPK 20-10-10
Application period:	Once a year at the beginning of the rainy season
Comment:	17.2 bags x 50 kg/ha. Apply in banding around the tree canopy for old crops.

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

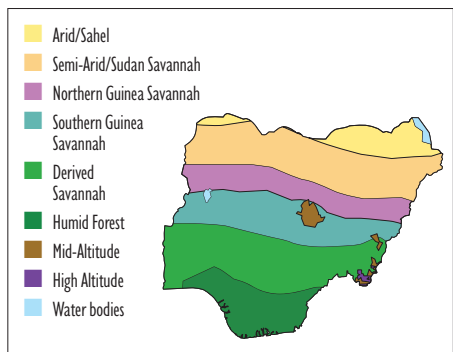
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough and harrow. Stone lines, mulching, grass strips, and minimum/zero tillage are recommended.
Method of fertilizer application:	Banding around the tree canopy for old crops, side place and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	Mulching
Pest management:	Control mealybugs, pod millers (IPM), capsids. Potential use: fungicides, insecticides, seed treatment.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide. Glyphosate and Paraquat pre-planting.
Cropping system:	Provide shade for about-to-be-transplanted cocoa seedlings. Prune matured trees. Plantain trees or natural trees can be used to provide shade.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COTTON <i>Gossypium hirsutum</i> ✓	
Variety name:	SAMCOT 12
Local name:	PIMAS
Variety type:	—
Quantity of seed:	15-20 kg/ha
Spacing:	90 cm x 45 cm, 4-6 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	15 May–30 June (unimodal)
Production system:	Rainfed
Days from planting to maturity:	100-130
Potential yield:	1.5-2 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Long staple

NUTRIENT RECOMMENDATIONS ↻	
60 N - 25 P ₂ O ₅ - 20 K ₂ O +S +0.75 B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 20-10-10
Application period:	2-3 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plow, harrow, and ridge across slopes. Stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Band, side place and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	Bunding.
Pest management:	Control cotton boll worms, leaf rollers, leaf miners, and suckers by integrated pest management (IPM).
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate).
Cropping system:	Rotation with cereals.

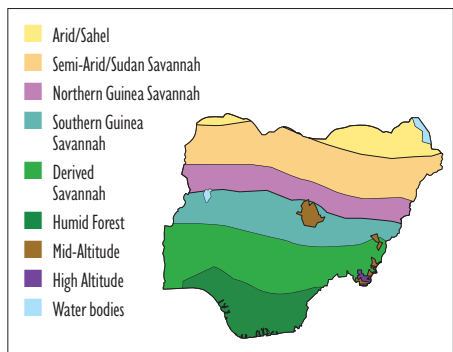




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Ife Brown (synonym: Irawo)
Local name:	—
Variety type:	OPV, hybrid
Quantity of seed:	25-30 kg/ha
Spacing:	25 cm x 75 cm
Grain/flesh color:	Brown
Planting/sowing time:	15–30 July
Production system:	Rainfed
Days from planting to maturity:	90-105
Potential yield:	3.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



NUTRIENT RECOMMENDATIONS ↻	
Application rate:	201 kg/ha NPK - 36 kg/ha P ₂ O ₅ - 20 kg/ha K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic manure when available.



FERTILIZER RECOMMENDATION ①	
Application rate:	22 kg/ha Urea +200 kg/ha SSP +33 kg/ha Muriate of potash (MOP)
Application period:	At sowing
Comment:	0.5 bags x 50 kg/ha Urea 4 bags x 50 kg/ha SSP 0.66 bags x 50 kg/ha MOP

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

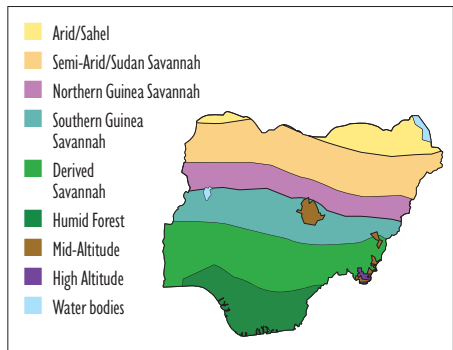


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 📌	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Broadcast, punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, stone lining and drainage.
Pest management:	For pest control, use 50 g a.i. Sherperplus (1.25 litres Cymbush Cypermethrin) 10% EC +3 litres Dimethoate (Rogor or Perfekthion), 40% EC) ha ⁻¹ . For disease use, apply Dithane M-45 (Mancozeb), Calizin-m, BAS-350 to control leaf spot rust.
Weed control:	<ul style="list-style-type: none"> 1.5 kg a.i. Metolachlor +1.0 kg a.i. Prometyne (3 litres Dual 500 EC +2 litres Gesagard 500FW (4 litres Codal 400 EC)/ha. 1.5 kg a.i. Metolachlor +0.8 kg a.i. Diuron (3 litres Dual 500 EC +1 kg Karmex 80 WP)/ha
Cropping system:	Rotation (cereals), monocropping, mixed, or relay cropping.

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN, NORTHERN AND SOUTHERN GUINEA SAVANNAH (ZARIA, DAURA, MICHIKA, KUMBO, CHIROMAWA, FASKARI, BAGUDO, Isohyet range 500-1,200 mm/year)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	SAMPEA 1
Local name:	—
Variety type:	OPV, hybrid
Quantity of seed:	25-30 kg/ha
Spacing:	25 cm x 75 cm
Grain/flesh color:	—
Planting/sowing time:	15–30 July
Production system:	Rainfed
Days from planting to maturity:	73-78
Potential yield:	1.7-2.4 t/ha
Pest resistance:	—
Disease resistance:	Resistant to anthracnose (brown blotch)
Other stresses:	—
Nutritional quality:	Good palatability, grains cook in 40-45 minutes
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	210 kg/ha NPK - 36 kg/ha P ₂ O ₅ - 20 kg/ha K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic manure when available.



FERTILIZER RECOMMENDATION ①	
Application rate:	22 kg/ha Urea +200 kg/ha SSP +33 kg/ha Muriate of potash (MOP)
Application period:	Apply before planting
Comment:	0.5 bags x 50 kg/ha Urea 4 bags x 50 kg/ha SSP 0.66 bags x 50 kg/ha MOP

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

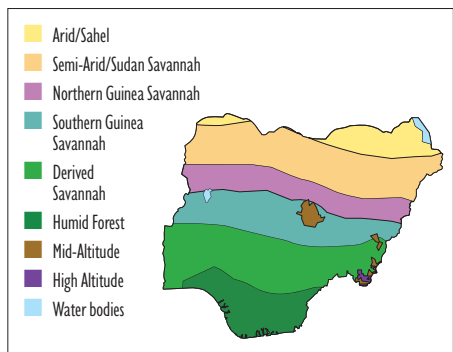
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 📌	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Broadcast and incorporated into the seedbeds before ridging.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, stone lining and drainage.
Pest management:	For pest control, use 50 g a.i. Sherperplus (1.25 litres Cymbush Cypermethrin) 10% EC +3 litres Dimethoate (Rogor or Perfekthion), 40% EC) ha ⁻¹ . For disease use, apply Dithane M-45 (Mancozeb), Calizin-m, BAS-350 to control leaf spot rust.
Weed control:	<ul style="list-style-type: none"> 1.5 kg a.i. Metolachlor +1.0 kg a.i. Prometyne (3 litres Dual 500 EC +2 litres Gesagard 500FW (4 litres Codal 400 EC)/ha. 1.5 kg a.i. Metolachlor +0.8 kg a.i. Diuron (3 litres Dual 500 EC +1 kg Karmex 80 WP)/ha
Cropping system:	Rotation (cereals), monocropping, mixed, or relay cropping.



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	SAMPEA 7
Local name:	I.A.R.-48
Variety type:	OPV, Hybrid
Quantity of seed:	25-30 kg/ha
Spacing:	25 cm x 75 cm
Grain/flesh color:	Light brown
Planting/sowing time:	15–30 July
Production system:	Rainfed
Days from planting to maturity:	70-75
Potential yield:	1.5-2.5 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	–
Nutritional quality:	–
Other qualities:	High yielding, good palatability, grains cook in 40-45 minutes

NUTRIENT RECOMMENDATIONS ↻	
20 NPK - 36 P ₂ O ₅ - 20 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	Add organic manure when available.



FERTILIZER RECOMMENDATION ①	
Application rate:	22 kg/ha Urea +200 kg/ha SSP +33 kg/ha Muriate of potash (MOP)
Application period:	Apply before planting
Comment:	0.44 bags x 50 kg/ha Urea 4 bags x 50 kg/ha SSP 0.66 bags x 50 kg/ha MOP

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 📌	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Broadcast and incorporated into the seedbeds before ridging.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, stone lining and drainage.
Pest management:	For pest control, use 50 g a.i. Sherperplus (1.25 litres Cymbush Cypermethrin) 10% EC +3 litres Dimethoate (Rogor or Perfekthion), 40% EC) ha ⁻¹ . For disease use, apply Dithane M-45 (Mancozeb), Calizin-m, BAS-350 to control leaf spot rust.
Weed control:	<ul style="list-style-type: none"> 1.5 kg a.i. Metolachlor +1.0 kg a.i. Prometyne (3 litres Dual 500 EC +2 litres Gesagard 500FW (4 litres Codal 400 EC)/ha. 1.5 kg a.i. Metolachlor +0.8 kg a.i. Diuron (3 litres Dual 500 EC +1 kg Karmex 80 WP)/ha
Cropping system:	Rotation (cereals), monocropping, mixed, or relay cropping.

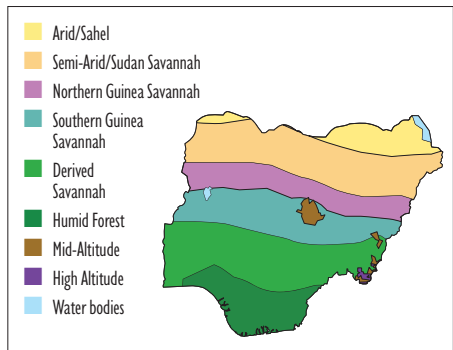
COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN, NORTHERN AND SOUTHERN GUINEA SAVANNAH (ZARIA, DAURA, MICHIKA, KUMBO, CHIROMAWA, FASKARI, BAGUDO, ISOHYET RANGE 500-1,200 mm/year)



GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Samnut 23
Local name:	ICCGV-1596894
Variety type:	Improved
Quantity of seed:	33-45 kg/ha depending on seed size and spacing
Spacing:	20 cm x 90 cm ridges (55,000 plants/ha), and 60 cm x 16 cm or 60 cm x 10 cm on flat ground (100,000-150,000 plants/ha)
Grain/flesh color:	Tan
Planting/sowing time:	1 June–30 July; sowing is delayed in areas of higher rainfall
Production system:	Rainfed/irrigation
Days from planting to maturity:	75-90 (very early maturing)
Potential yield:	2.5-3 t/ha
Pest resistance:	—
Disease resistance:	Rosette resistant
Other stresses:	—
Nutritional quality:	—
Other qualities:	High oil content, small to medium seed size



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



SAHEL, SUDAN SAVANNAH, NORTHERN GUINEA SAVANNAH (BUNDUGU, DAMBOA, GEREI, GWARMAI, NINGI, TAFAWA BALEWA, ZARIA, ZURU)
 Isohyet range 600-1,200 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha SSP + 42 kg/ha MOP
Application period:	At land preparation or 2 weeks after sowing
Comment:	6 bags x 50 kg/ha SSP / 1 bag x 50 kg/ha MOP

FERTILIZER RECOMMENDATION ②	
Application rate:	540 kg/ha NPK 20-10-10
Application period:	At land preparation or 2 weeks after sowing; use when simple fertilizers SSP/MOP are unavailable
Comment:	11 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, stone barriers, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Broadcast, punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, stone lining and drainage.
Pest management:	For pest control including aphids, use 50 g a.i. Sherperplus (1.25 litres Cymbush Cypermethrin) 10% EC + 3 litres Dimethoate (Rogor or Perfekthion), 40% EC) ha-1. For disease use, apply Dithane M-45 (Mancozeb), Calizin-m, BAS-350 to control leaf spot rust.
Weed control:	1.5 kg a.i. Metolachlor or 3.0 kg. a.i Alachlor (3 litres Dual 500EC or 6 litres Lasso ha ⁻¹ , followed by 1.5 kg. Bentazone (3 litres Basagran). Conduct supplementary hoe-weeding and/or earthing up, especially at pegging.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.



NUTRIENT RECOMMENDATIONS ↻	
0 N - 54 P ₂ O ₅ - 25 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.





GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Samnut 25
Local name:	ICGX-SM00020/P5/P10
Variety type:	Improved
Quantity of seed:	33-45 kg/ha depending on seed size and spacing
Spacing:	20 cm x 90 cm ridges (55,000 plants/ha), and 60 cm x 16 cm or 60 cm x 10 cm on flat ground (100,000-150,000 plants/ha)
Grain/flesh color:	Tan
Planting/sowing time:	1 June–30 July; sowing is delayed in areas of higher rainfall
Production system:	Rainfed/irrigation
Days from planting to maturity:	Early maturing
Potential yield:	3.8 t/ha
Pest resistance:	—
Disease resistance:	Highly rosette resistant
Other stresses:	—
Nutritional quality:	—
Other qualities:	High yield and early maturity

NUTRIENT RECOMMENDATIONS ↻	
0 N - 54 P ₂ O ₅ - 25 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, add organic manure, compost, biofertilizers, biostimulants, and/or innoculants.



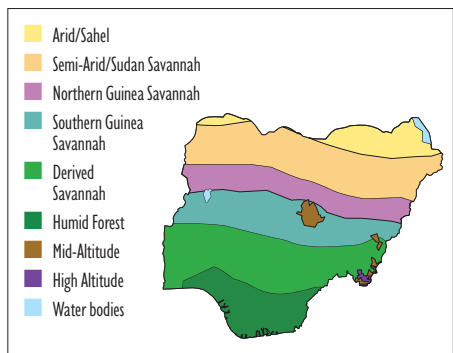
FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha SSP + 42 kg/ha MOP
Application period:	At land preparation or 2 weeks after sowing
Comment:	6 bags x 50 kg/ha SSP / 1 bag x 50 kg/ha MOP

FERTILIZER RECOMMENDATION ②	
Application rate:	540 kg/ha NPK 20-10-10
Application period:	At land preparation or 2 weeks after sowing; use when simple fertilizers SSP/MOP are unavailable
Comment:	11 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, stone barriers, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Broadcast, or punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, stone lining and drainage.
Pest management:	For pest control including aphids, use 50 g a.i. Sherperplus (1.25 litres Cymbush Cypermethrin) 10% EC + 3 litres Dimethoate (Rogor or Perfekthion), 40% EC) ha-1. For disease use, apply Dithane M-45 (Mancozeb), Calizin-m, BAS-350 to control leaf spot rust.
Weed control:	1.5 kg a.i. Metolachlor or 3.0 kg. a.i Alachlor (3 litres Dual 500EC or 6 litres Lasso ha ⁻¹ , followed by 1.5 kg. Bentazone (3 litres Basagran). Conduct supplementary hoe-weeding and/or earthing up, especially at pegging.
Cropping system:	Rotation (cereals), intercropping or mixed cropping, continuous monoculture.



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



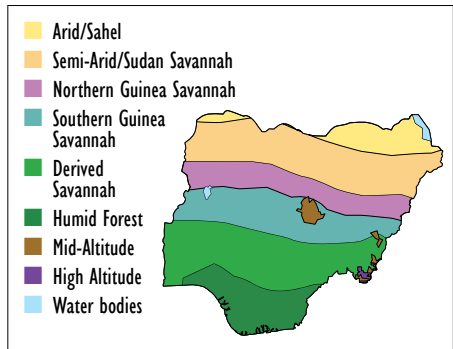
COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH, NORTHERN GUINEA SAVANNAH (BUNDUGU, DAMBOA, GEREI, GWARMAI, NINGI, TAFAWA BALEWA, ZARIA, ZURU)

Isohyet range 800-1,300 mm/year



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DERIVED SAVANNAH
Isohyet range 1500-2500 mm/year

MAIZE <i>Zea mays</i>	
Variety name:	BR9943DMSR
Local name:	BR9943DMSR
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	
Grain/flesh color:	White
Planting/sowing time:	10 April and 15 August (bimodal)
Production system:	Rainfed
Days from planting to maturity:	110
Potential yield:	4 t/ha
Pest resistance:	
Disease resistance:	MSV, DMR, resistant to downy mildew
Other stresses:	Sensitive to lodging
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS	
Application rate:	120 N - 60 P ₂ O ₅ - 60 K ₂ O +2 S +I B +I Ca +2 Mg +2 Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, add one of the following elements: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION	
Application rate:	300 kg/ha NPK 20-10-10 or 200 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha or 4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

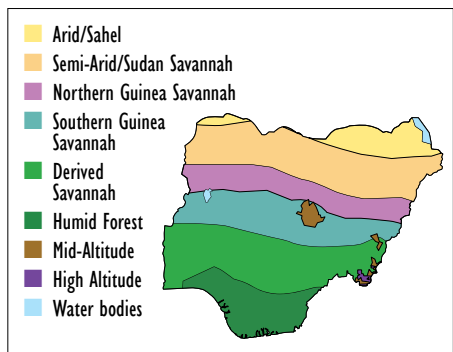
FERTILIZER RECOMMENDATION	
Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough and harrow, +/- ridging across slopes, and in addition, it is recommended to use stone lines, mulching, grass strips, bales, and minimum/zero tillage are recommended
Method of fertilizer application:	Punch, side place, and cover
Amendments:	Add organic material when available
Water management:	Drainage, bunding, ridged partitions
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (cotton, legumes)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN SAVANNAH (GUSAU, FUNTUA DAUDAWA, IKARA)

Isohyet range 700-900 mm/year

MAIZE *Zea mays* ✓

Variety name:	SAMMAZ 32
Local name:	99 TZEE-Ypop STR
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 20 cm (one seed) 5 cm x 40 cm (two seeds) 66,666 plants/ha
Grain/flesh color:	Yellow
Planting/sowing time:	5-20 June
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	6 t/ha
Pest resistance:	Striga
Disease resistance:	MSV
Other stresses:	Lodging, drought
Nutritional quality:	Quality protein maize
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻

120 N - 60 P₂O₅ - 60 K₂O + 2 S + I B + I Ca + 2 Mg + 2 Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add one of the following elements: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION ①

Application rate:	300 kg/ha NPK 20-10-10 or 200 kg/ha NPK 27:13:13
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha or 4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes; in addition, it is recommended to use stone lines, mulching, grass strips, and minimum/zero tillage are recommended
Method of fertilizer application:	Punch, side place, and cover
Amendments:	Add organic manure if available
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (cotton, legumes)

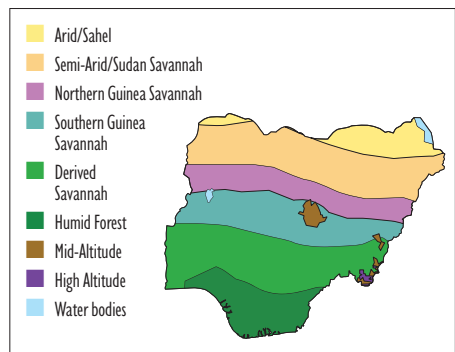




MAIZE <i>Zea mays</i>	
Variety name:	Sammaz 15
Local name:	IWD C2 Syn F2
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 25 cm, 1 plant per hill 75 cm x 50 cm, 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	5–20 June (medium maturity)
Production system:	Rainfed
Days from planting to maturity:	100-110
Potential yield:	6.9 t/ha
Pest resistance:	Tolerant to striga
Disease resistance:	Maize streak virus
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



NUTRIENT RECOMMENDATIONS	
120 N - 60 P ₂ O ₅ - 60 K ₂ O + 2 S + 1 B + 1 Ca + 2 Mg + 2 Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, biofortifiers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	400 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha



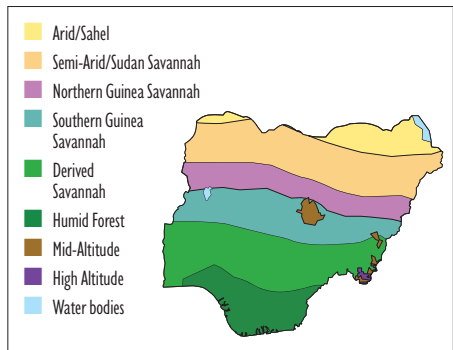
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when possible.
Water management:	Bunding, tie-ridging, drainage.
Pest management:	Scout for Fall Army Worm and apply pesticide (IPM) if needed, e.g. Caterpillar Force (cheaper option), Sharpshooter by Walcott Find active ingredient, Ambigo Syngenta 1 sachet per CP20 sprayer x10 for one hectare, Emamectin - 20g /20L .
Weed control:	Good agricultural practices (mechanical weeding) and herbicides. Pre-plant herbicide: Glyphosate and Paraquat. Selective for maize: Nicosurforone.
Cropping system:	Rotation (cotton, soybean, legumes).





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

NORTHERN GUINEA SAVANNAH, SOUTHERN GUINEA SAVANNAH, DERIVED SAVANNAH (MOKWA, ABUJA MINNA, LAFIA, KEFFI, SAMINAKA, ZURU, SABUWA)

Isohyet range 1,500-2,500 mm/year

MAIZE *Zea mays*



Variety name:	Sammaz 30
Local name:	LNTP_xLNTP-w-C3
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 25 cm, 1 plant per hill 75 cm x 50 cm, 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	10 April and 15 August (bimodal)
Production system:	Rainfed
Days from planting to maturity:	110-120
Potential yield:	3.5-4 t/ha
Pest resistance:	—
Disease resistance:	Maize streak virus
Other stresses:	Low N tolerance
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS



120 N - 60 P₂O₅ - 60 K₂O + 2 S + 1 B + 1 Ca + 2 Mg + 2 Zn

ORGANIC FERTILIZER RECOMMENDATION



Application rate: If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①



Application rate:	300 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②



Application rate:	250 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③



Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when possible.
Water management:	Bunding, tie-ridging, drainage.
Pest management:	Scout for Fall Army Worm and apply pesticide (IPM) if needed, e.g. Caterpillar Force (cheaper option), Sharpshooter by Walcott Find active ingredient, Ambigo Syngenta 1 sachet per CP20 sprayer x10 for one hectare, Emamectin - 20g /20L .
Weed control:	Good agricultural practices (mechanical weeding) and herbicides. Pre-plant herbicide: Glyphosate and Paraquat. Selective for maize: Nicosurforone.
Cropping system:	Rotation (cotton, soybean, legumes).





MAIZE <i>Zea mays</i>	
Variety name:	Sammaz 33
Local name:	2000Syn EE-WSTR
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 25 cm, 1 plant per hill 75 cm x 50 cm, 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	30 June–30 July
Production system:	Rainfed/irrigation
Days from planting to maturity:	80-85
Potential yield:	3.9 t/ha
Pest resistance:	Tolerant to striga
Disease resistance:	Maize streak virus
Other stresses:	—
Nutritional quality:	Quality protein maize (QPM)
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
	120 N - 60 P ₂ O ₅ - 60 K ₂ O + 2 S + 1 B + 1 Ca + 2 Mg + 2 Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

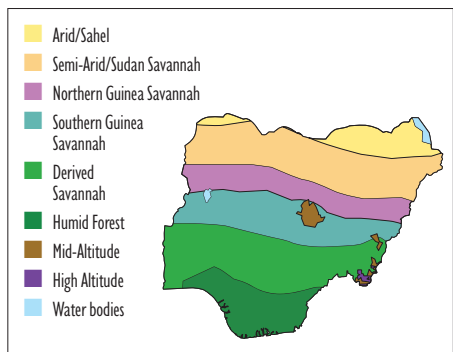
FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when possible.
Water management:	Bunding, tie-ridging, drainage.
Pest management:	Scout for Fall Army Worm and apply pesticide (IPM) if needed, e.g. Caterpillar Force (cheaper option), Sharpshooter by Walcott Find active ingredient, Ambigo Syngenta 1 sachet per CP20 sprayer x10 for one hectare, Emamectin - 20g /20L .
Weed control:	Good agricultural practices (mechanical weeding) and herbicides. Pre-plant herbicide: Glyphosate and Paraquat. Selective for maize: Nicosurforone.
Cropping system:	Rotation (cotton, soybean, legumes).



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

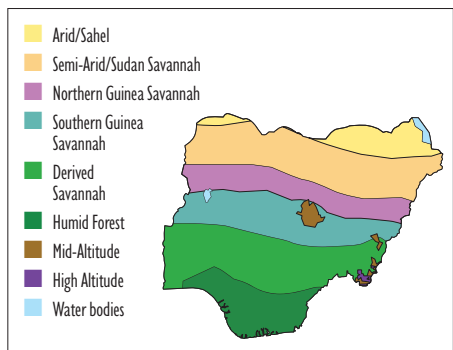
NORTHERN & SOUTHERN GUINEA SAVANNAHS, SEMI-ARID/SUDAN SAVANNAH (GUSAU, FUNTUA, DAUDAWA, IKARA)

Isohyet range 900-1,600 mm/year





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



MAIZE <i>Zea mays</i>	
Variety name:	Sammaz 52
Local name:	PVA Syn 13
Variety type:	OPV
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 25 cm, 1 plant per hill 75 cm x 50 cm, 2 plants per hill
Grain/flesh color:	Orange
Planting/sowing time:	10 April and 15 August (bimodal)
Production system:	Rainfed
Days from planting to maturity:	110
Potential yield:	6 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to striga, rust, maize streak virus (MSV), leaf blight, curvularia leaf spot
Other stresses:	—
Nutritional quality:	Rich in pro-vitamin A
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
	120 N - 60 P ₂ O ₅ - 60 K ₂ O + 2 S + 1 B + 1 Ca + 2 Mg + 2 Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

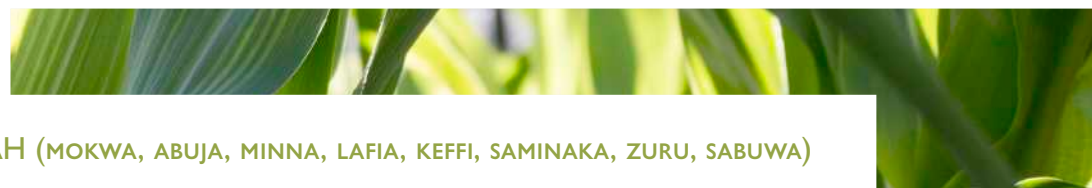
FERTILIZER RECOMMENDATION ②	
Application rate:	200 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when possible.
Water management:	Bunding, tie-ridging, drainage.
Pest management:	Scout for Fall Army Worm and apply pesticide (IPM) if needed, e.g. Caterpillar Force (cheaper option), Sharpshooter by Walcott Find active ingredient, Ambigo Syngenta 1 sachet per CP20 sprayer x10 for one hectare, Emamectin - 20g /20L .
Weed control:	Good agricultural practices (mechanical weeding) and herbicides. Pre-plant herbicide: Glyphosate and Paraquat. Selective for maize: Nicosulfuron.
Cropping system:	Rotation (legumes, cotton, soybean).





MAIZE <i>Zea mays</i>	
Variety name:	SC719
Local name:	—
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	75 cm x 25 cm, 1 plant per hill 75 cm x 50 cm, 2 plants per hill
Grain/flesh color:	White
Planting/sowing time:	5–20 June (medium maturity)
Production system:	Rainfed
Days from planting to maturity:	100-110
Potential yield:	6.9 t/ha
Pest resistance:	—
Disease resistance:	Maize streak virus (MSV), leaf spot
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS	
150 N - 60 P ₂ O ₅ - 60 K ₂ O + 2 S + 1 B + 1 Ca + 2 Mg + 2 Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	400 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha NPK 27-13-13
Application period:	2 weeks after sowing
Comment:	5 bags x 50 kg/ha

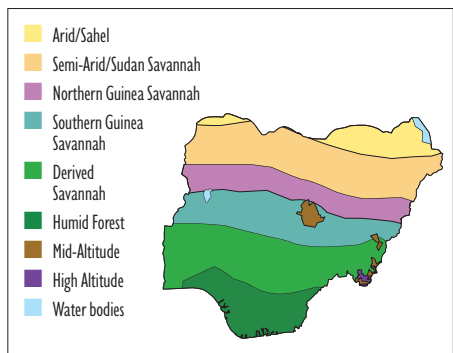
FERTILIZER RECOMMENDATION ③	
Application rate:	100 kg/ha Urea
Application period:	6 weeks after sowing
Comment:	2 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Ploughing, harrowing +/- ridging against the slope. In addition, the Zai method, stone barriers, mulching, grass strips, bunds, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when possible.
Water management:	Bunding, tie-ridging, drainage.
Pest management:	Scout for Fall Army Worm and apply pesticide (IPM) if needed, e.g. Caterpillar Force (cheaper option), Sharpshooter by Walcott Find active ingredient, Ambigo Syngenta 1 sachet per CP20 sprayer x10 for one hectare, Emamectin - 20g /20L .
Weed control:	Good agricultural practices (mechanical weeding) and herbicides. Pre-plant herbicide: Glyphosate and Paraquat. Selective for maize: Nicosurforone.
Cropping system:	Rotation (legumes, cotton, soybean).



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
NORTHERN AND SOUTHERN GUINEA SAVANNAHS (SAMINAKA, ZARIA, LERE, MAIGANA, JOS, SABUWA)
 Isohyet range 900-1,600 mm/year

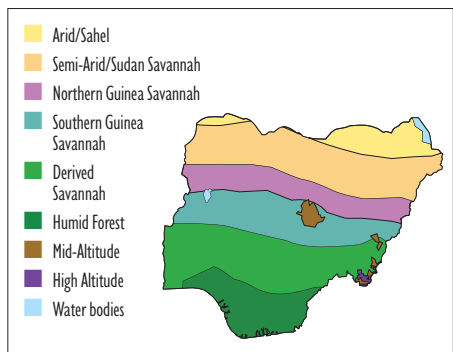




SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	PEO5532 (synonym: Supersosat)
Local name:	LCICMV-3
Variety type:	OPV
Quantity of seed:	10-15 kg/ha
Spacing:	75 cm x 25 cm one plant per hill, 75 cm x 50 cm two plants per hill
Grain/flesh color:	Yellow
Planting/sowing time:	May–June
Production system:	Rainfed
Days from planting to maturity:	90 (early maturity)
Potential yield:	5 t/ha
Pest resistance:	–
Disease resistance:	Resistant to downy mildew
Other stresses:	–
Nutritional quality:	–
Other qualities:	High yielding; stout stalk for fencing



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN, SAHEL (JIBIA, GASHUWA, HADEJA, MALUMFASHI, GWARMAI, TSAFE, DOGON KUKA, POTISKUM)
Isohyet range 600-1,000 mm/year

NUTRIENT RECOMMENDATIONS ↻	
62 N - 30 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION ♻️	
Application rate:	When possible, add organic manure, compost, biofertilizers, and/or biostimulants.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 20-10-10
Application period:	2 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	4 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, drainage. Zai and half-moon on degraded lands.
Pest management:	Scout for FAW, Stem Borer and apply IPM.
Weed control:	1 kg/ha Atrazine (=2 litres Gesaprim 500 FW). Mechanical or manual weeding where applicable can supplement applied herbicides. Pre-plant Herbicide: Glyphosate and Paraquat to eradicate emerged weeds before land preparation.
Cropping system:	Rotation (legumes, cotton).

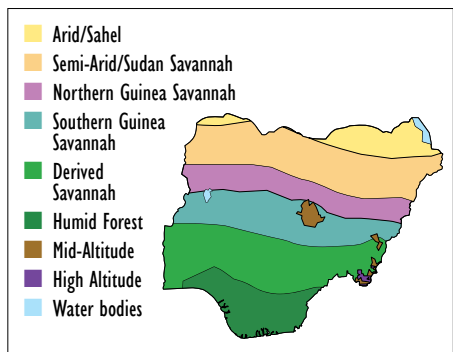




RICE <i>Oryza sativa</i>	
Variety name:	FARO 44
Local name:	
Variety type:	Pure line
Quantity of seed:	20 kg transplanting; 40 kg direct seeding
Spacing:	Transplant 1-2 plants 20 cm x 20 cm or plant in small hills of 20 cm x 20 cm for upland; 21-28 days-old seedlings or dibble 4-6 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	25 April 30 June
Production system:	Rainfed lowland
Days from planting to maturity:	
Potential yield:	6 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
FOREST TRANSITION/DERIVED SAVANNAH, HUMID FOREST
Isohyet range >800 mm/year

NUTRIENT RECOMMENDATIONS	
Application rate:	100 N - 50 P ₂ O ₅ - 40 K ₂ O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION 1	
Application rate:	250 kg/ha NPK 20-10-10
Application period:	At transplanting or 2-3 weeks after planting (WAP)
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 2	
Application rate:	250 kg/ha NPK 20-10-10
Application period:	Side dress 4-6 WAP
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 3	
Application rate:	109 kg/ha Urea
Application period:	At transplanting or 2-3 WAP and side dress the same quantity 5-6 WAP
Comment:	



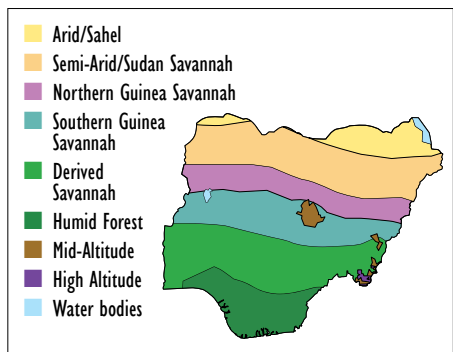
GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure when necessary
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)



RICE <i>Oryza sativa</i>	
Variety name:	FARO 52 (synonym WITA 4)
Local name:	
Variety type:	Hybrid
Quantity of seed:	20 kg transplanting; 40 kg direct seeding
Spacing:	Transplant 1-2 seedlings 20 cm x 20 cm or transplant/plant 20 cm x 20 cm for upland; 21-28 days-old seedling or grain 4-6 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	25 April 30 June
Production system:	Rainfed lowland
Days from planting to maturity:	125-130
Potential yield:	7 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Lodging, Fe toxicity, and drought
Nutritional quality:	
Other qualities:	



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
FOREST TRANSITION/DERIVED SAVANNAH
Isohyet range >800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	250 kg/ha NPK 20-10-10
Application period:	At planting or 2-3 weeks after planting (WAP)
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	250 kg/ha NPK 20-10-10
Application period:	Side dress 4-6 WAP
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	109 kg/ha Urea
Application period:	At planting or 2-3 WAP and side dress the same quantity 5-6 WAP
Comment:	



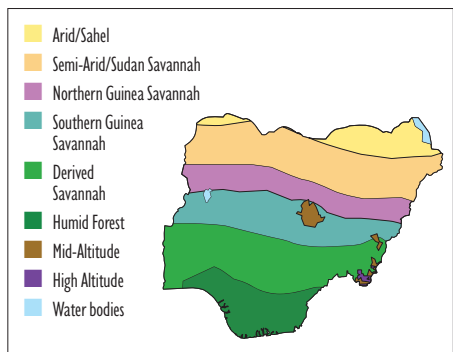
NUTRIENT RECOMMENDATIONS	
Application rate:	100 N - 50 P ₂ O ₅ - 40 K ₂ O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure when necessary
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN, FOREST TRANSITION/DERIVED SAVANNAH, SOUTHERN GUINEA SAVANNAH, NORTHERN GUINEA SAVANNAH, HUMID FOREST

Isohyet range >800 mm/year: grown under irrigation all over the country

RICE *Oryza sativa* ✓

Variety name:	Faro 57
Local name:	TOX4004-43-1-2-1
Variety type:	Pure line, OPV
Quantity of seed:	20 kg/ha transplanting, 40 kg/ha direct seeding
Spacing:	20 cm x 20 cm for transplanting 1-2 seedlings at 14-21 days old; or (for upland) dibble 4-6 seeds per hill at the same spacing
Grain/flesh color:	White
Planting/sowing time:	—
Production system:	Irrigation, rainfed, lowland, mangrove
Days from planting to maturity:	110-115 (medium maturity)
Potential yield:	6 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Lodging, drought, iron toxicity, blast, RYMV
Nutritional quality:	—
Other qualities:	Aromatic, long grain, good cooking quality

NUTRIENT RECOMMENDATIONS

100 N - 50 P₂O₅ - 50 K₂O +2 S +1 B +1 Mn +2 Ca +2 Mg +1 Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible, add organic manure, r compost, biofertilizers, biostimulants, and/or innoculants.

FERTILIZER RECOMMENDATION ①

Application rate:	250 kg/ha NPK 20-10-10
Application period:	Apply as basal fertilizer at transplanting or 2-3 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	2-3 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha Urea
Application period:	6-7 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha



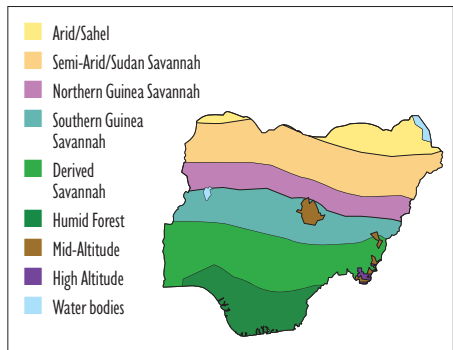
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, puddling and leveling. Recommended : bunding, and/or minimum/zero tillage.
Method of fertilizer application:	Punch and side placement (direct seeding), Broadcasting, UDP.
Amendments:	When necessary, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) if needed, e.g. fungicides (Delsane M45, Apron Plus), insecticides, and/or seed treatments.
Weed control:	GAP (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted. Pre-plant Herbicide: Glyphosate and Paraquat. Pre-emergence herbicides: butachlor. Selective for rice: Propanil and 2-4-D.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN, FOREST TRANSITION/DERIVED SAVANNAH, SOUTHERN GUINEA SAVANNAH, NORTHERN GUINEA SAVANNAH, HUMID FOREST

Isohyet range >800 mm/year: grown under irrigation all over the country.

RICE *Oryza sativa* ✓

Variety name:	Gawal R1
Local name:	Chaotan
Variety type:	Hybrid (pure line?)
Quantity of seed:	20 kg/ha transplanting, 40 kg/ha direct seeding
Spacing:	20 cm x 20 cm for transplanting 1-2 seedlings at 14-21 days old; or (for upland) dibble 4-6 seeds per hill at the same spacing
Grain/flesh color:	White
Planting/sowing time:	—
Production system:	Rainfed lowland, irrigated lowland
Days from planting to maturity:	100-105 (early maturity)
Potential yield:	10 t/ha
Pest resistance:	—
Disease resistance:	Resistant to blast
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	High-yielding, long grain, good cooking quality

NUTRIENT RECOMMENDATIONS ↻

100 N - 50 P₂O₅ - 50 K₂O +2 S +1 B +1 Mn +2 Ca +2 Mg +1 Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, r compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	250 kg/ha NPK 20-10-10
Application period:	Apply as basal fertilizer at transplanting or 2-3 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	2-3 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha Urea
Application period:	6-7 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha

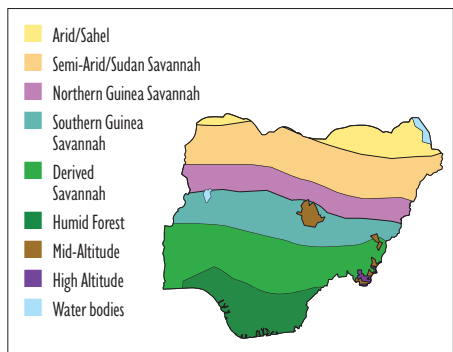


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

Soil and water conservation techniques:	Plough, harrow, puddling and leveling. Recommended : bunding, and/or minimum/zero tillage.
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, UDP.
Amendments:	When necessary, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) if needed, e.g. fungicides (Delsane M45, Apron Plus), insecticides, and/or seed treatments.
Weed control:	GAP (mechanical or manual weeding where applicable) and use of herbicides. Pre-plant Herbicide: Glyphosate and Paraquat. Pre-emergence herbicides: butachlor. Selective for rice: Propanil and 2-4-D.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN, FOREST TRANSITION/DERIVED SAVANNAH, SOUTHERN GUINEA SAVANNAH, NORTHERN GUINEA SAVANNAH, HUMID FOREST

Isohyet range >800 mm/year: grown under irrigation all over the country

RICE *Oryza sativa* ✓

Variety name:	Faro 32
Local name:	FAROX 228-4-1-1
Variety type:	Pure line
Quantity of seed:	20 kg/ha transplanting, 40-50 kg/ha direct seeding
Spacing:	20 cm x 20 cm for transplanting 1-2 seedlings at 14-21 days old; or (for upland) dibble 4-6 seeds per hill at the same spacing
Grain/flesh color:	White
Planting/sowing time:	—
Production system:	Rainfed and irrigated lowland
Days from planting to maturity:	110
Potential yield:	5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Medium grain, good cooking quality

NUTRIENT RECOMMENDATIONS ↻

100 N - 50 P₂O₅ - 50 K₂O +2 S +1 B +1 Mn +2 Ca +2 Mg +1 Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, r compost, biofertilizers, biostimulants, and/or innoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	250 kg/ha NPK 20-10-10
Application period:	Apply as basal fertilizer at transplanting or 2-3 weeks after sowing
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha Urea
Application period:	2-3 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha Urea
Application period:	6-7 weeks after transplanting or sowing
Comment:	1 bag x 50 kg/ha

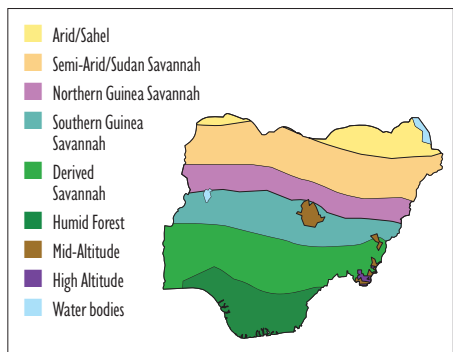


GOOD AGRICULTURAL PRACTICES & MANAGEMENT ↻

Soil and water conservation techniques:	Plough, harrow, puddling and leveling. Recommended : bunding, and/or minimum/zero tillage.
Method of fertilizer application:	Punch and side placement (direct seeding), Broadcasting, UDP.
Amendments:	When necessary, add organic manure such as rock phosphate, lime, organic matter, organic manure and/or compost.
Water management:	Basin, flooding and alternate drying, drainage, e.g., irrigation, water harvesting techniques.
Pest management:	Scout for insects and apply pesticide (IPM) if needed, e.g. fungicides (Delsane M45, Apron Plus), insecticides, and/or seed treatments.
Weed control:	GAP (mechanical or manual weeding where applicable) and combinations of herbicides can be adopted. Pre-plant Herbicide: Glyphosate and Paraquat. Pre-emergence herbicides: butachlor. Selective for rice: Propanil and 2-4-D.
Cropping system:	Rotation (sweet potato, potato, vegetables), intercropping or mixed cropping, continuous monoculture.



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



SESAME <i>Sesamum indicum</i> ✓	
Variety name:	NCRIBEN-01M
Local name:	530-6-10
Variety type:	OPV
Quantity of seed:	4-5 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	Cream
Planting/sowing time:	Early July–August
Production system:	Rainfed
Days from planting to maturity:	100-110
Potential yield:	600-750 kg/ha
Pest resistance:	–
Disease resistance:	Moderate resistance to leaf rot and collar rot
Other stresses:	–
Nutritional quality:	High quality oil suited to pharmaceutical and industrial uses
Other qualities:	–

NUTRIENT RECOMMENDATIONS ↻	
60 N - 30 P ₂ O ₅ - 30 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If available, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 20-10-10
Application period:	At sowing
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

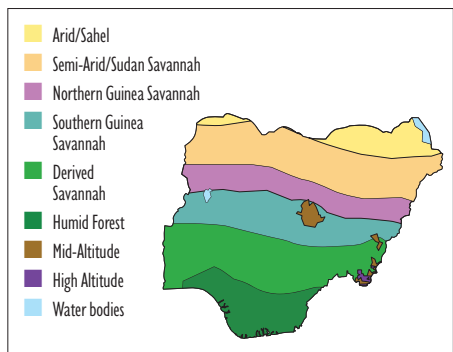


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plant on level land, thin to 2 stands per hills and regular weeding.
Method of fertilizer application:	Broadcasting.
Amendments:	Add organic manure when available.
Water management:	–
Pest management:	Scout for pests and diseases, and apply treatments as needed.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate and Paraquat).
Cropping system:	Rotation with maize and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN SAVANNAH, NORTHERN GUINEAN SAVANNAH, SOUTHERN GUINEAN SAVANNAH
Isohyet range 900-1,000 mm/year

SESAME <i>Sesamum indicum</i> ✓	
Variety name:	NCRIBEN-03L
Local name:	Goza-25
Variety type:	OPV
Quantity of seed:	4-5 kg/ha
Spacing:	60 cm x 10 cm
Grain/flesh color:	Cream
Planting/sowing time:	Early July–August
Production system:	Rainfed
Days from planting to maturity:	100-110
Potential yield:	500-550 kg/ha
Pest resistance:	–
Disease resistance:	Moderate resistance to leaf rot and collar rot
Other stresses:	Drought resistant
Nutritional quality:	High quality oil suited to pharmaceutical and industrial uses
Other qualities:	Good seed quality

NUTRIENT RECOMMENDATIONS ↻	
	60 N - 30 P ₂ O ₅ - 30 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	If available, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	300 kg/ha NPK 20-10-10
Application period:	At sowing
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	–
Application period:	–
Comment:	–

FERTILIZER RECOMMENDATION ③	
Application rate:	–
Application period:	–
Comment:	–

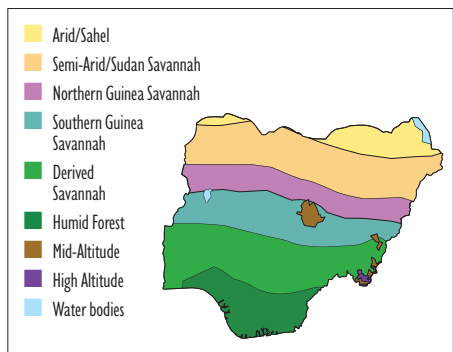


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plant on level land, thin to 2 stands per hills and regular weeding.
Method of fertilizer application:	Broadcasting.
Amendments:	Add organic manure when available.
Water management:	–
Pest management:	Scout for pests and diseases, and apply treatments as needed.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides (Glyphosate and Paraquat).
Cropping system:	Rotation with maize and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
ARID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDAN, SAHEL (GASHUWA, DAMBOA, JIBIA, GORONYO, ARGUNGU, BUNGUDU, MUBI, SHUWA)
 Isohyet range 700-900 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	Samsorg 40
Local name:	ICSV 400
Variety type:	OPV
Quantity of seed:	10-20 kg/ha
Spacing:	75 cm x 25 cm one plant per hill, 75 cm x 50 cm two plants per hill
Grain/flesh color:	Cream
Planting/sowing time:	20 June–20 July
Production system:	Rainfed
Days from planting to maturity:	70-85 (early maturity)
Potential yield:	2-2.5 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Lodging; tolerant of drought
Nutritional quality:	Good food and malting quality
Other qualities:	Good response to fertilizer

NUTRIENT RECOMMENDATIONS ↩

64 N - 32 P₂O₅ - 30 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, compost, biofertilizers, and/or biostimulants.



FERTILIZER RECOMMENDATION ①

Application rate:	220 kg/ha NPK 20-10-10
Application period:	2-3 weeks after sowing
Comment:	4.4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	8-10 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	–
Application period:	–
Comment:	–

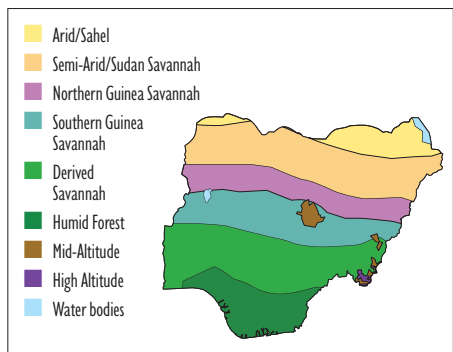
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, drainage. Zai and half-moon on degraded lands.
Pest management:	Scout for FAW, Stem Borer and apply IPM.
Weed control:	1 kg/ha Atrazine (=2 litres Gesaprim 500 FW). Mechanical or manual weeding where applicable can supplement applied herbicides. Pre-plant Herbicide: Glyphosate and Paraquat to eradicate emerged weeds before land preparation.
Cropping system:	Rotation (legumes, cotton).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



SORGHUM *Sorghum bicolor* ✓

Variety name:	Samsorg 45 (syn. Deko)
Local name:	12NICSV-188
Variety type:	OPV
Quantity of seed:	10-20 kg/ha
Spacing:	75 cm x 25 cm one plant per hill
Grain/flesh color:	White
Planting/sowing time:	20 June–20 July
Production system:	Rainfed
Days from planting to maturity:	70-85 (early maturity)
Potential yield:	4.2 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to major diseases
Other stresses:	Drought tolerant
Nutritional quality:	Good malting quality and used in the production of beverages
Other qualities:	Early maturity, high yielding, good grains

NUTRIENT RECOMMENDATIONS ↻

64 N - 32 P₂O₅ - 30 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, add organic manure, compost, biofertilizers, and/or biostimulants.



FERTILIZER RECOMMENDATION ①

Application rate:	220 kg/ha NPK 20-10-10
Application period:	2-3 weeks after sowing
Comment:	4.4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	8-10 weeks after sowing
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

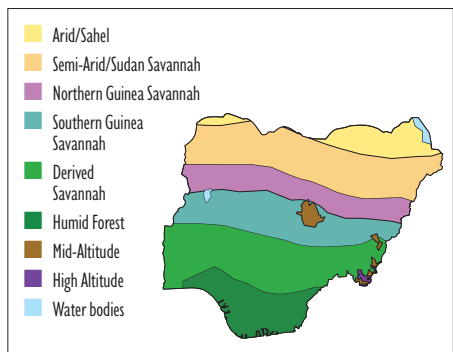
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Plough, harrow +/- ridging across slopes. In addition, stone lines, mulching, grass strips, bunding, and/or minimum/zero tillage are recommended.
Method of fertilizer application:	Punch, side place, and cover.
Amendments:	Add organic manure when available.
Water management:	Bunding, tie-ridging, drainage. Zai and half-moon on degraded lands.
Pest management:	Scout for FAW, Stem Borer and apply IPM.
Weed control:	1 kg/ha Atrazine (=2 litres Gesaprim 500 FW). Mechanical or manual weeding where applicable can supplement applied herbicides. Pre-plant Herbicide: Glyphosate and Paraquat to eradicate emerged weeds before land preparation.
Cropping system:	Rotation (legumes, cotton).





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
HUMID FOREST, DERIVED SAVANNAH, SOUTHERN AND NORTHERN GUINEA SAVANNAH (YAM ZONES OF NIGERIA)
Isohyet range 1,000-3,000 mm/year

YAM *Dioscorea cayenensis-rotundata* ✓

Variety name:	UMUDr-20
Local name:	TDR98/00933
Variety type:	Hybrid
Quantity of seed:	10,000 seeds per hectare; at least 250 g yam sett size
Spacing:	1 m x 1 m
Grain/flesh color:	White
Planting/sowing time:	Bimodal: plant by November in Savannah Zone, in Forest Zone plant by March
Production system:	Rainfed; can also be grown during dry season
Days from planting to maturity:	300-330
Potential yield:	39.8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	High-yielding

NUTRIENT RECOMMENDATIONS ↻

90 N - 120 P₂O₅ - 90 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible and if available add any of the following: organic manure, compost, biofertilizers, biostimulants, inoculants



FERTILIZER RECOMMENDATION ①

Application rate:	600 kg/ha NPK 15-15-15
Application period:	8 weeks after planting
Comment:	12 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	450 kg/ha NPK 20-10-10
Application period:	8 weeks after planting
Comment:	9 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



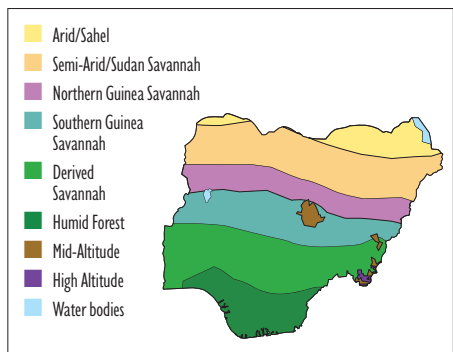
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough, harrow, and ridge across slopes or construct mounds. Stone lines, mulching, grass strips, bunding, and minimum/zero tillage are recommended.
Method of fertilizer application:	Band, side-dressing, and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	—
Pest management:	IPM, e.g. fungicides, insecticides, and/or seed treatment.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if needed. Glyphosate and Paraquat pre-planting (note Gramazone banned in the country). Pre-emergence: fluometuron+Metalachlor, Atrazine+Pendimethalin.
Cropping system:	Rotation (shallow rooted crops, such as maize, sorghum, and legumes).





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



YAM *Dioscorea cayenensis-rotundata* ✓

Variety name:	UMUDr-18
Local name:	TDR89/02475
Variety type:	Hybrid
Quantity of seed:	10,000 seeds per hectare, at least 250 g yam sett size
Spacing:	1 m x 1 m
Grain/flesh color:	White
Planting/sowing time:	Bimodal: plant by November in Savannah Zone, in Forest Zone plant by March
Production system:	Rainfed, can also be grown during dry season
Days from planting to maturity:	300-330
Potential yield:	31 t/ha
Pest resistance:	Tolerant
Disease resistance:	Tolerant
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	High-yielding, good for pounded yam, frying and boiling

NUTRIENT RECOMMENDATIONS ↻

90 N - 120 P₂O₅ - 90 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible and if available add any of the following: organic manure, compost, biofertilizers, biostimulants, inoculants



FERTILIZER RECOMMENDATION ①

Application rate:	600 kg/ha NPK 15-15-15
Application period:	8 weeks after planting
Comment:	12 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	450 kg/ha NPK 20-10-10
Application period:	8 weeks after planting
Comment:	9 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

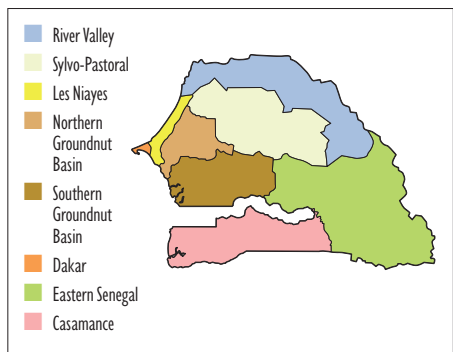
Soil and water conservation techniques:	Plough, harrow, and ridge across slopes or construct mounds. Stone lines, mulching, grass strips, bunding, and minimum/zero tillage are recommended.
Method of fertilizer application:	Band, side-dressing, and cover.
Amendments:	Add organic manure when available and necessary.
Water management:	—
Pest management:	IPM, e.g. fungicides, insecticides, and/or seed treatment.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if needed. Glyphosate and Paraquat pre-planting (note Gramazone banned in the country). Pre-emergence: fluometuron+Metalachlor, Atrazine+Pendimethalin.
Cropping system:	Rotation (shallow rooted crops, such as maize, sorghum, and legumes).



SENEGAL



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (LOUGA, THIÈS, DIOURBEL, NORD)
 Isohyet range 300-400 mm/year

COWPEA *Vigna unguiculata* ✓

Variety name:	Mouride (synonym: ISRA 86-275)
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-25 kg/ha
Spacing:	50 cm x 25 cm (seeding disc: 8 holes)
Grain/flesh color:	Creamy white
Planting/sowing time:	1-25 July (sow after a rainfall)
Production system:	Rainfed
Days from planting to maturity:	58-61 (early maturity)
Potential yield:	1 t/ha
Pest resistance:	Seed beetle (<i>Callosobruchus maculatus</i>)
Disease resistance:	Bacterial canker
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

69 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 2-5 t/ha manure or compost, if possible



FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha NPK 6-20-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Minimum/zero tillage.
Method of fertilizer application:	Side-dressing, bands: localized input along the seed line and then buried at 15 JAS.
Amendments:	Basal phosphate: 400 kg/ha every 3 years with phosphate rock.
Water management:	Follows the pattern of rainfall.
Pest management:	Scout for armyworms and apply insecticide.

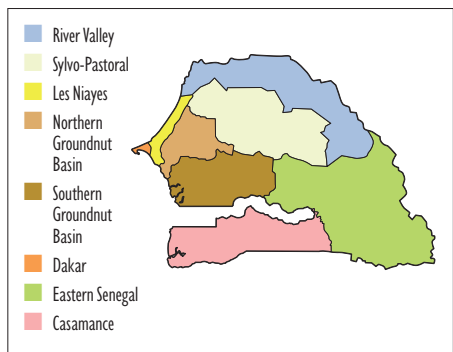
Bacterial canker	Symptoms: Necrotic spots, orange ochre with yellow halo on crack or cankers on stem.	Control: Healthy seeds and resistant varieties (58-57, Mougne, Mouride, Diongoma).
Cowpea aphid-borne mosaic virus (CABMV)	Symptoms: Mosaics and distortion of leaves; stunting of the plant.	Control: Healthy seeds and resistant varieties (Bambey 21, CB5, Mouride, Diongoma, Melakh).
Amsacta caterpillars	Damage: Defoliation.	Control: Décis 250 cc/sprayer of 15 l capacity.
Aphids	Damage: Defoliation, plant stunting.	Control: Resistant varieties (Mélakh, SAM).
Thrips	Damage: Abcission of flower buds, no pod formation.	Control: Décis 1 st treatment: appearance of flower buds, 2 nd treatment 7-10 days later of 40 cc/sprayer.

Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: First weeding: 10-15 days after emergence. Second weeding: 15-20 days after the first. Other weeding: as needed. Striga control: uproot before flowering by removing the underground part. Resistant varieties: Mouride, Diongoma. Harvest as soon as pods are mature, in one or more passages.
---------------	--

Cropping system:	Rotation with associated crops (cereals).
------------------	---



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (LOUGA, THIÈS, DIOURBEL, NORD)
Isohyet range 300-600 mm/year

COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Yacine (synonym: ISRA 819)
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-25 kg/ha
Spacing:	50 cm x 25 cm (seeding disc: 8 holes)
Grain/flesh color:	Creamy white
Planting/sowing time:	1-25 July (sow after a rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	62 (early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	Aphids
Disease resistance:	Bacterial canker, CPMV
Other stresses:	—
Nutritional quality:	—
Other qualities:	Well-appreciated by consumers

NUTRIENT RECOMMENDATIONS ↻	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha manure or compost, if possible.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

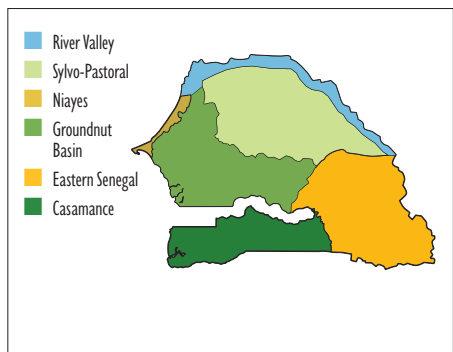
Soil and water conservation techniques:	Minimum/zero tillage.	
Method of fertilizer application:	Side-dressing, bands: localized input along the seed line and then buried at 15 JAS.	
Amendments:	Basal phosphate: 400 kg/ha every 3 years with phosphate rock.	
Water management:	Follows the pattern of rainfall.	
Pest management:	Scout for armyworms and apply insecticide.	
Bacterial canker	Symptoms: Necrotic spots, orange ochre with yellow halo on crack or cankers on stem	Control: Healthy seeds and resistant varieties (58-57, Mougne, Mouride, Diongoma)
Cowpea aphid-borne mosaic virus (CABMV)	Symptoms: Mosaics and distortion of leaves; stunting of the plant	Control: Healthy seeds and resistant varieties (Bambey 21, CB5, Mouride, Diongoma, Melakh)
Amsacta caterpillars	Damage: Defoliation	Control: Décis 250 cc/sprayer of 15 l capacity
Aphids	Damage: Defoliation, plant stunting	Control: Resistant varieties (Mélakh, SAM)
Thrips	Damage: Abcission of flower buds, no pod formation	Control: Décis 1 st treatment: appearance of flower buds, 2 nd treatment 7-10 days later of 40 cc/sprayer
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: First weeding: 10-15 days after emergence / Second weeding: 15-20 days after the first / Other weeding: as needed. Striga control: uproot before flowering by removing the underground part of resistant varieties (Mouride, Diongoma). Harvest as soon as pods are mature, in one or more passages.	
Cropping system:	Rotation with associated crops (cereals)	



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Mougne
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-25 kg/ha
Spacing:	50 cm x 25 cm (seeding disc: 8 holes)
Grain/flesh color:	Gray-blue
Planting/sowing time:	1-25 July (sow after a rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	61-64 (early maturity)
Potential yield:	0.9-1.4 t/ha
Pest resistance:	—
Disease resistance:	Bacterial canker, CPMV
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Important dry matter production



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (REGIONS OF DIOURBEL ET THIÈS)
 Isohyet range 300-600 mm/year

NUTRIENT RECOMMENDATIONS ↻	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha manure or compost, if possible.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

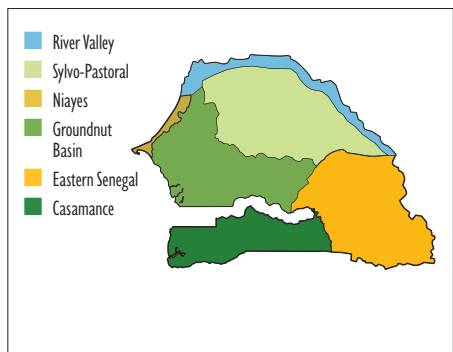
Soil and water conservation techniques:	Minimum/zero tillage.	
Method of fertilizer application:	Side-dressing, bands: localized input along the seed line and then buried at 15 JAS.	
Amendments:	Basal phosphate: 400 kg/ha every 3 years with phosphate rock.	
Water management:	Follows the pattern of rainfall.	
Pest management:	Scout for armyworms and apply insecticide.	
Bacterial canker	Symptoms: Necrotic spots, orange ochre with yellow halo on crack or cankers on stem	Control: Healthy seeds and resistant varieties (58-57, Mougne, Mouride, Diongoma)
Cowpea aphid-borne mosaic virus (CABMV)	Symptoms: Mosaics and distortion of leaves; stunting of the plant	Control: Healthy seeds and resistant varieties (Bambey 21, CB5, Mouride, Diongoma, Melakh)
Amsacta caterpillars	Damage: Defoliation	Control: Décis 250 cc/sprayer of 15 l capacity
Aphids	Damage: Defoliation, plant stunting	Control: Resistant varieties (Mélakh, SAM)
Thrips	Damage: Abcission of flower buds, no pod formation	Control: Décis 1 st treatment: appearance of flower buds, 2 nd treatment 7-10 days later of 40 cc/sprayer
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: First weeding: 10-15 days after emergence / Second weeding: 15-20 days after the first / Other weeding: as needed. Striga control: uproot before flowering by removing the underground part of resistant varieties (Mouride, Diongoma). Harvest as soon as pods are mature, in one or more passages.	
Cropping system:	Rotation with associated crops (cereals)	



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Thieye (synonym: ISRA 3201)
Local name:	—
Variety type:	Pure line
Quantity of seed:	15-25 kg/ha
Spacing:	50 cm x 25 cm (seeding disc: 8 holes)
Grain/flesh color:	White
Planting/sowing time:	1-25 July (sow after a rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	59 (early maturity)
Potential yield:	3 t/ha
Pest resistance:	Aphids, thrips
Disease resistance:	Bacterial canker, CPMV
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Excellent for baking, pastry or enriched flours



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (NORTHERN REGION, LOUGA, THIÈS, DIOURBEL)
Isohyet range 300-600 mm/year

NUTRIENT RECOMMENDATIONS ↻	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha manure or compost, if possible.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Minimum/zero tillage.
Method of fertilizer application:	Side-dressing, bands: localized input along the seed line and then buried at 15 JAS.
Amendments:	Basal phosphate: 400 kg/ha every 3 years with phosphate rock.
Water management:	Follows the pattern of rainfall.

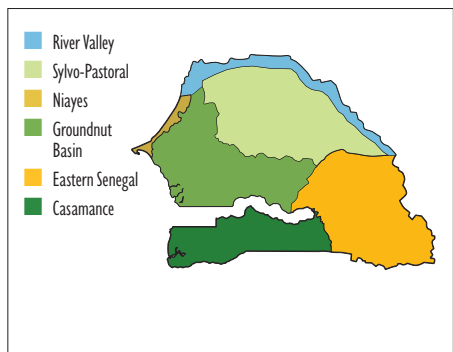
Pest management:	Scout for armyworms and apply insecticide.
Bacterial canker	Symptoms: Necrotic spots, orange ochre with yellow halo on crack or cankers on stem Control: Healthy seeds and resistant varieties (58-57, Mougne, Mouride, Diongoma)
Cowpea aphid-borne mosaic virus (CABMV)	Symptoms: Mosaics and distortion of leaves; stunting of the plant Control: Healthy seeds and resistant varieties (Bambey 21, CB5, Mouride, Diongoma, Melakh)
Amsacta caterpillars	Damage: Defoliation Control: Décis 250 cc/sprayer of 15 l capacity
Aphids	Damage: Defoliation, plant stunting Control: Resistant varieties (Mélakh, SAM)
Thrips	Damage: Abcission of flower buds, no pod formation Control: Décis 1 st treatment: appearance of flower buds, 2 nd treatment 7-10 days later of 40 cc/sprayer

Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: First weeding: 10-15 days after emergence / Second weeding: 15-20 days after the first / Other weeding: as needed. Striga control: uproot before flowering by removing the underground part of resistant varieties (Mouride, Diongoma). Harvest as soon as pods are mature, in one or more passages.
---------------	---

Cropping system:	Rotation with associated crops (cereals)
------------------	--



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

GROUNDNUT BASINS, NIAYES, EASTERN SENEGAL, RIVER VALLEY (DIOURBEL, KAOLACK, KAFFRINE, FATICK, THIÈS, TAMBACOUNDA, Isohyet range 300-1,200 mm/year

EGGPLANT *Solanum melongena* ✓

Variety name:	Keur Mbir Ndao
Local name:	Jaxatu
Variety type:	—
Quantity of seed:	0.2-0.25 kg/ha
Spacing:	50 cm x 50 cm
Grain/flesh color:	Light green
Planting/sowing time:	March: Niayes. All year: Groundnut basins, Eastern Senegal, River Valley. Plants should be raised in nursery and transplanted 4-6 weeks after germination (6-8 leaves stage)
Production system:	Winter and off season when irrigated
Days from planting to maturity:	65-70
Potential yield:	25-30 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Large fruit

NUTRIENT RECOMMENDATIONS ↻

28 N - 28 P₂O₅ - 56 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 15-20 t/ha organic manure or compost.



FERTILIZER RECOMMENDATION ①

Application rate:	280 kg/ha NPK 10-10-20
Application period:	50% (140 kg/ha) at 7 JAL and 50% at 40 JAL
Comment:	5.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Transplanting in pots with trays and mulching with straw to reduce evaporation.
Method of fertilizer application:	Spot fertilizing and then burying: make a small hole 5 cm deep at about 7-10 cm from the plant, put the fertilizer in it and cover the hole with soil.
Amendments:	5 t/ha of organic matter when possible.
Water management:	Drip system, watering in basins (maintain water).
Pest management:	Regular observations of the crop and treatment in case of attacks with an appropriate product.
Weed control:	Mechanical and chemical weeding (with herbicides).
Cropping system:	Rotation with other species than solanaceous.




GROUNDNUT *Arachis hypogaea*


Variety name:	55-437
Local name:	Fourrier
Variety type:	Pure line
Quantity of seed:	60 grain kg/ha
Spacing:	40 cm x 15 cm
Grain/flesh color:	Light pink
Planting/sowing time:	1 15 July
Production system:	Rainfed
Days from planting to maturity:	90 (early maturity)
Potential yield:	1.5-2 t/ha
Pest resistance:	
Disease resistance:	Aflatoxin
Other stresses:	Drought
Nutritional quality:	
Other qualities:	Oil content 49%

NUTRIENT RECOMMENDATIONS


9 N - 30 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION


Application rate: As possible: 2-5 t/ha

FERTILIZER RECOMMENDATION


Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION


Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION

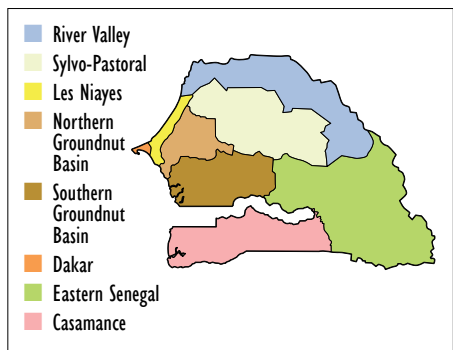

Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Side placement, strip placement
Amendments:	Add organic material as much as possible
Water management:	Bunding, tie-ridging
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide as necessary
Cropping system:	Rotation (cereals)



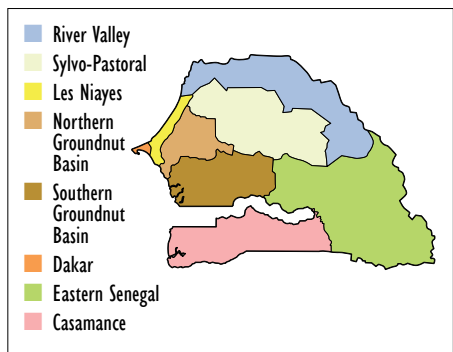
WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN
 Isohyet range 500-600 mm/year



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN
 Isohyet range 600-800 mm/year

GROUNDNUT *Arachis hypogaea* ✓

Variety name:	73 33
Local name:	Essayman
Variety type:	Pure line
Quantity of seed:	70 grain kg/ha
Spacing:	50 cm x 15 cm
Grain/flesh color:	Pink or light pink
Planting/sowing time:	1 25 July
Production system:	Rainfed
Days from planting to maturity:	105-110 (early maturity)
Potential yield:	2-2.5 t/ha
Pest resistance:	
Disease resistance:	Aflatoxin
Other stresses:	Drought
Nutritional quality:	
Other qualities:	Oil content 50%

NUTRIENT RECOMMENDATIONS

9 N - 30 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible: 2-5 t/ha

FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

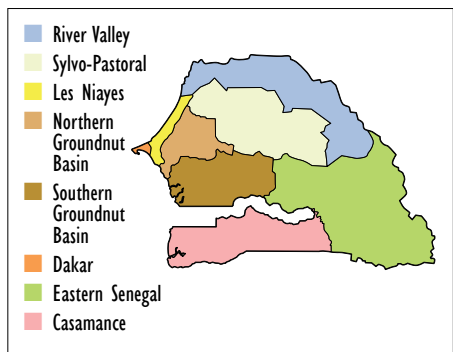
Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Side placement, in bands
Amendments:	Add organic material as necessary
Water management:	Bunding, tie-ridging
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicides as necessary
Cropping system:	Rotation (cereals)


WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID

GROUNDNUT *Arachis hypogaea*


Variety name:	Rafeet Car
Local name:	
Variety type:	Pure line
Quantity of seed:	75 grain kg/ha (140-160 kg/ha shells)
Spacing:	50 cm x 15 cm or disc of 30 slots
Grain/flesh color:	Light rose
Planting/sowing time:	1 25 July (sowing: after a useful rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	90
Potential yield:	2.5 t/ha
Pest resistance:	
Disease resistance:	Cercoporiose
Other stresses:	Drought
Nutritional quality:	
Other qualities:	Oil content 48%; Biomass yield: 3.5 t/ha

NUTRIENT RECOMMENDATIONS


9 N - 30 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION


Application rate: As possible: 2-5 t/ha

FERTILIZER RECOMMENDATION


Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 sacs x 50 kg/ha

FERTILIZER RECOMMENDATION


Application rate:	Phosphogypsum: 400 kg/ha
Application period:	At the start of gynophorisation
Comment:	8 sacs x 50 kg/ha, on the sowing line (localised application)

FERTILIZER RECOMMENDATION


Application rate:	
Application period:	
Comment:	

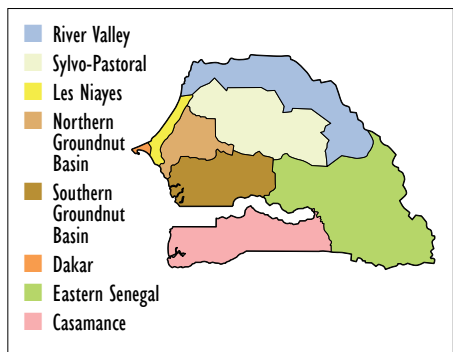
GOOD AGRICULTURAL PRACTICES & MANAGEMENT


Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Side placement, bunding: localized application along sowing line then buried at 15 days after sowing (DAS)
Amendments:	Add organic material as necessary
Water management:	Rainfed cultivation follows the rhythm of the season
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide as necessary; hoeing/weeding: <ul style="list-style-type: none"> • Mechanical hoeing 15-20 DAS with sine hoe • Manual weeding 3-5 days after hoeing • Second hoeing/weeding 30-35 DAS • Third hoeing/weeding 45 DAS or on demand especially if grass is sown
Cropping system:	Rotation (cereals)

GROUNDNUT/SENEGAL



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (ZIGUINCHOR, SEDHIOU, KOLDA, KEDOUGOU)
Isohyet range 800-1200 mm/year

GROUNDNUT *Arachis hypogaea*



Variety name:	69-101 (synonym 28-206 RR)
Local name:	
Variety type:	Pure line
Quantity of seed:	55 grain kg/ha (120-140 kg/ha shells)
Spacing:	60 cm x 47 cm (24 crans)
Grain/flesh color:	Rose
Planting/sowing time:	1 25 July (sowing: after a useful rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	125
Potential yield:	1.5-2.5 t/ha
Pest resistance:	
Disease resistance:	Rosette, cercospora
Other stresses:	
Nutritional quality:	
Other qualities:	Oil content: 50%

NUTRIENT RECOMMENDATIONS



9 N - 30 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION



Application rate: As possible; 2-5 t/ha

FERTILIZER RECOMMENDATION



Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	Phosphogypsum: 400 kg/ha at the start of gynophorisation on the sowing line (localised application)
Application period:	
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	
Application period:	
Comment:	

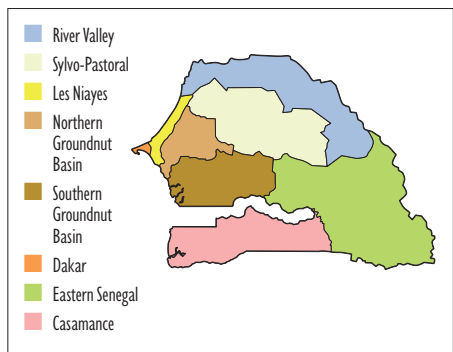
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough, harrow, +/- ridging across slopes
Method of fertilizer application:	Side placement, bunding: localized application along sowing line then buried at 15 days after sowing (DAS)
Amendments:	Add organic material as necessary
Water management:	Rainfed cultivation follows the rhythm of the season
Pest management:	Scout for fall army worm (FAW) and apply pesticides (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide as necessary; hoeing/weeding: <ul style="list-style-type: none"> Mechanical hoeing 15-20 DAS with sine hoe Manual weeding 3-5 days after hoeing Second hoeing/weeding 30-35 DAS Third hoeing/weeding 45 DAS or on demand especially if grass is sown
Cropping system:	Rotation (cereals)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (ZIGUINCHOR, SÉDHIU, KOLDA, KÉDOUGOU)
 Isohyet range 800-1,200 mm/year

GROUNDNUT *Arachis hypogaea* ✓

Variety name:	Amoul Morom
Local name:	—
Variety type:	Pure line
Quantity of seed:	70 grains kg/ha - 140-155 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Dark pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	120
Potential yield:	2.5 t/ha — biomass 3.5 t/ha
Pest resistance:	—
Disease resistance:	Cercosporium, early and late
Other stresses:	—
Nutritional quality:	—
Other qualities:	Oil content 47%

NUTRIENT RECOMMENDATIONS ↻

9 kg/ha N - 30 kg/ha P₂O₅ - 15 kg/ha K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



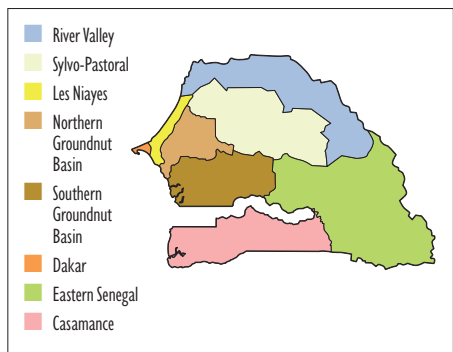
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Essamaye
Local name:	—
Variety type:	Pure line
Quantity of seed:	70 grains kg/ha—130-155 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Light pink
Planting/sowing time:	1–25 July—sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	105 (early maturity)
Potential yield:	2.5 t/ha—biomass 3 t/ha
Pest resistance:	—
Disease resistance:	Cercosporium, rosette
Other stresses:	—
Nutritional quality:	—
Other qualities:	Oil content 45%

NUTRIENT RECOMMENDATIONS ↻	
9 kg/ha N - 30 kg/ha P ₂ O ₅ - 15 kg/ha K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha—If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

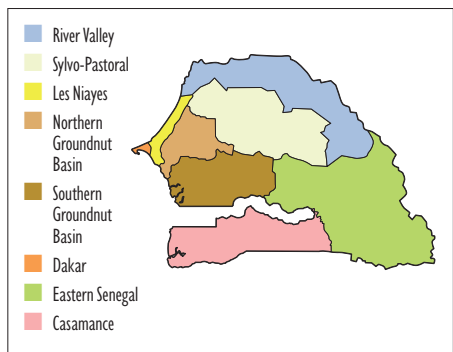
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (LOUGA, THIÈS, DIOURBEL)
 Isohyet range 500-600 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Jaambar
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 kg/ha seed, 140-170 kg/ha in shell
Spacing:	50 cm x 15 cm, seed disk of 30 holes
Grain/flesh color:	Pink
Planting/sowing time:	1–25 July, sow after a rainfall of at least 20 mm.
Production system:	Rainfed
Days from planting to maturity:	90 (early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Early Cercosporiosis
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Oil content 49% Yield in biomass 3.5 t/ha

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	9 kg/ha N - 30 kg/ha P ₂ O ₅ - 15 kg/ha K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

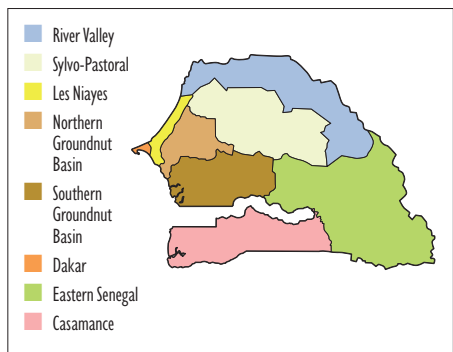
FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN (RÉGIONS DE LOUGA-THIÈS, DIOURBEL)
Isohyet range 600-800 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Kom Kom (synonym: ISRA R06-16)
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 grains kg/ha, 150-170 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	105 (early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Oil content 45%, biomass 3.5 t/ha.

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	9 kg/ha N - 30 kg/ha P ₂ O ₅ - 15 kg/ha K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

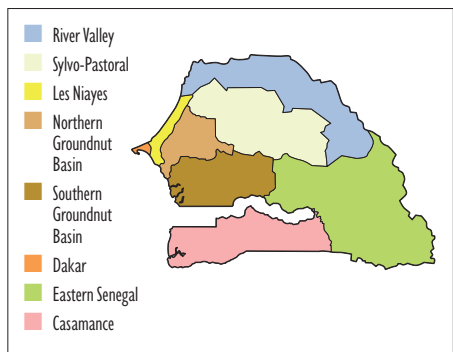
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (LOUGA, THIÈS)
 Isohyet range 500-600 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Sunu gaal
Local name:	—
Variety type:	Pure line
Quantity of seed:	70 grains kg/ha – 120-150 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Light pink
Planting/sowing time:	1–25 June – sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	95 (early maturity)
Potential yield:	3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Oil content 49% Yield in biomass 3 t/ha

NUTRIENT RECOMMENDATIONS ↻	
Application rate:	9 kg/ha N - 30 kg/ha P ₂ O ₅ - 15 kg/ha K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha – If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

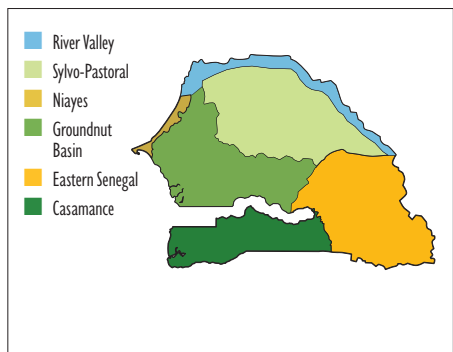
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

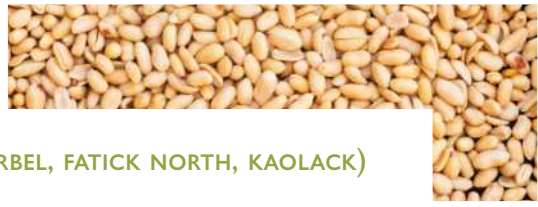


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (ST LOUIS REGION, THIÈS, DIOURBEL, FATICK NORTH, KAOLACK)
 Isohyet range 500-600 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Fleur 11
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 kg/ha grains, 150-170 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Light pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed and irrigated
Days from planting to maturity:	90 (very early maturity)
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Oil content 45%, widely used for fresh green groundnuts

NUTRIENT RECOMMENDATIONS ↻	
	9 N - 30 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

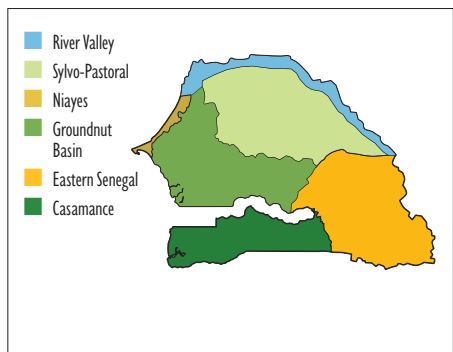
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHEL (REGIONS OF LOUGA-THIÈS, DIOURBEL)
 Isohyet range 600-800 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Raw Gadou (syn. ISAR01-16)
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 kg/ha grains, 150-170 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Light pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	90 (very early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Cercosporia
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Oil content 51%, biomass production: 3.5 t/ha

NUTRIENT RECOMMENDATIONS ↻	
	9 N - 30 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

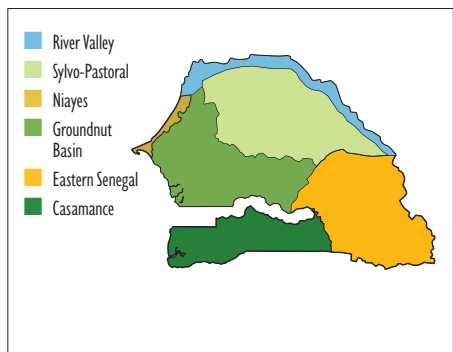
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHEL (REGIONS OF LOUGA-THIÈS, DIOURBEL)
Isohyet range 600-800 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Taarou (syn. ISRA 07-16)
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 kg/ha grains, 150-170 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Dark pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	90 (very early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Cercosporia
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Oil content 53%, biomass production: 3.5 t/ha

NUTRIENT RECOMMENDATIONS ↻	
	9 N - 30 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

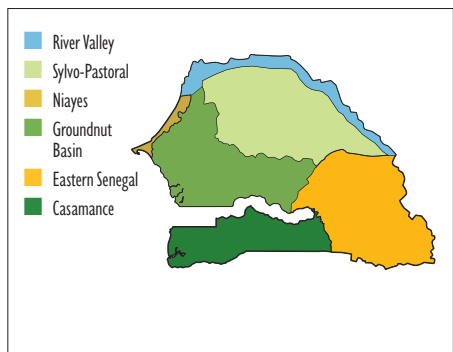
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe, • Manual weeding 3-5 days after hoeing, • Second weeding 30-35 days after sowing, • Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHEL (REGIONS OF LOUGA-THIÈS, DIOURBEL)
 Isohyet range 500-600 mm/year

GROUNDNUT <i>Arachis hypogaea</i> ✓	
Variety name:	Tosset
Local name:	—
Variety type:	Pure line
Quantity of seed:	75-80 kg/ha grains, 140-170 kg/ha in shell
Spacing:	50 cm x 15 cm (disk of 30 holes)
Grain/flesh color:	Light pink
Planting/sowing time:	1–25 July — sow after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	90 (very early maturity)
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Cercosporia
Other stresses:	Drought
Nutritional quality:	—
Other qualities:	Oil content 45%, biomass production: 3.5 t/ha

NUTRIENT RECOMMENDATIONS ↻	
	9 N - 30 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha — If possible, add any of the following: organic manure, compost, biofertilizers, biostimulants, and/or inoculants.



FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 6-20-10
Application period:	At sowing or 2 weeks after sowing
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	400 kg/ha Phosphogypsum
Application period:	At the beginning of gynophorization, along the seed row (localized application)
Comment:	8 bags x 50 kg/ha

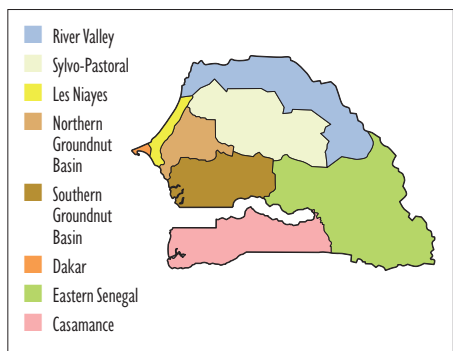
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Plough, harrow +/- ridging of slopes. Minimum/zero tillage, soil preparation.
Method of fertilizer application:	At 15 DAS, apply localized fertilizer (lateral placement, dike, UDP/FDP, microdose, broadcast, fertigation) along the seed row and cover.
Amendments:	If needed, add any of the following: phosphate rock, organic matter, organic manure, and/or compost.
Water management:	Rainfed farming follows the seasonal rhythm, or use techniques for irrigation and water collection.
Pest management:	Scout for FAW and apply pesticides, e.g. fungicides, insecticides, seed treatments (GIPD).
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> Mechanical hoeing: 15 to 20 days after sowing with sine hoe, Manual weeding 3-5 days after hoeing, Second weeding 30-35 days after sowing, Third weeding 45 days after sowing or on demand especially if weeds are overgrown.
Cropping system:	Rotation with cereals.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



MAIZE <i>Zea mays</i>	
Variety name:	Goor Yomboul
Local name:	Suwan-1
Variety type:	OPV
Quantity of seed:	16-20 kg/ha
Spacing:	75 cm x 25 cm
Grain/flesh color:	Yellow-orange
Planting/sowing time:	1-15 July, after rain of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	90-95
Potential yield:	3-4 t/ha
Pest resistance:	—
Disease resistance:	Helminthosporium
Other stresses:	Drought-resistant
Nutritional quality:	—
Other qualities:	Resistant to lodging

NUTRIENT RECOMMENDATIONS	
122 kg/ha N - 30 kg/ha P ₂ O ₅ - 30 kg/ha K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	2-5 t/ha, 3-4 days before sowing.



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 + 40 kg/ha Urea
Application period:	At sowing or 15 days after sowing
Comment:	4 bags x 50 kg/ha NPK + 0.8 bags kg/ha Urea

FERTILIZER RECOMMENDATION ②	
Application rate:	160 kg/ha Urea
Application period:	2 doses: 50% at 27 DAS, 50% at 41 DAS
Comment:	3 bags x 50 kg/ha + 10 kg/ha Urea

GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Plough, harrow +/- on slopes. Clearance ploughing.
Method of fertilizer application:	Localized application and then buried.
Amendments:	Basal phosphate 400 kg/ha every 3 years.
Water management:	Rainfed cultivation following the rhythm of the rainy season.
Pest management:	Detect any infestation and apply appropriate treatment.
Weed control:	Sarclo-binages : <ul style="list-style-type: none"> Mechanical hoeing 15 to 20 DAS with a sine hoe. Manual weeding 3-5 days after hoeing. Second hoeing 30 -35 days. Third hoeing 45 days or on demand, especially if weediness. Removal of 1 plant 10-15 days after emergence. Ridging: after the first application of urea. Harvesting: complete maturity; stalling, cutting ears, bundling, drying to 16-20% grain humidity. <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun. Ginning: manual or mechanical. Bagging: after threshing and winnowing. Storage: clean, ventilated, treated warehouse; in new bags of the same size. Application of selective herbicides if possible.
Cropping system:	Rotation (legumes, cotton).




MAIZE *Zea mays*

Variety name:	Jaboot
Local name:	Synthetique 9243
Variety type:	OPV
Quantity of seed:	16-20 kg/ha
Spacing:	75 cm x 25 cm
Grain/flesh color:	White
Planting/sowing time:	1-15 July, after rain of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	90-95
Potential yield:	3-4 t/ha
Pest resistance:	—
Disease resistance:	Helminthosporium
Other stresses:	Drought-resistant
Nutritional quality:	—
Other qualities:	Resistant to lodging

NUTRIENT RECOMMENDATIONS

122 kg/ha N - 30 kg/ha P₂O₅ - 30 kg/ha K₂O

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 2-5 t/ha, 3-4 days before sowing.


FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 15-15-15 + 40 kg/ha Urea
Application period:	At sowing or 15 days after sowing
Comment:	4 bags x 50 kg/ha NPK + 0.8 bags kg/ha Urea

FERTILIZER RECOMMENDATION ②

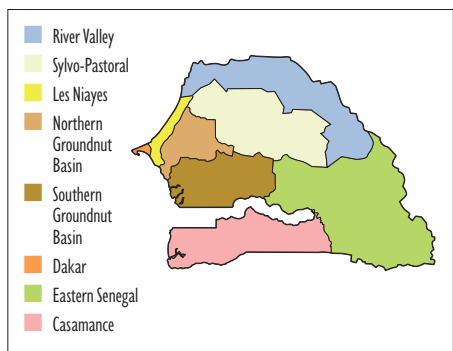
Application rate:	160 kg/ha Urea
Application period:	2 doses: 50% at 27 DAS, 50% at 41 DAS
Comment:	3 bags x 50 kg/ha + 10 kg/ha Urea


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow +/- on slopes. Clearance ploughing.
Method of fertilizer application:	Localized application and then buried.
Amendments:	Basal phosphate 400 kg/ha every 3 years.
Water management:	Rainfed cultivation following the rhythm of the rainy season.
Pest management:	Detect any infestation and apply appropriate treatment.
Weed control:	Weeding/hoeing: <ul style="list-style-type: none"> Mechanical hoeing 15 to 20 DAS with a sine hoe. Manual weeding 3-5 days after hoeing. Second hoeing 30 -35 days. Third hoeing 45 days or on demand, especially if weediness. Removal of 1 plant 10-15 days after emergence. Ridging: after the first application of urea. Harvesting: complete maturity; stalling, cutting ears, bundling, drying to 16-20% grain humidity. <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun. Ginning: manual or mechanical. Bagging: after threshing and winnowing. Storage: clean, ventilated, treated warehouse; in new bags of the same size. Application of selective herbicides if possible.
Cropping system:	Rotation (legumes, cotton).



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDAN (KAOLACK, FATICK, TAMBACOUNDA, KOLDA, SÉDHIU, ZIGUINCHOR)
 Isohyet range 800-1,200 mm/year

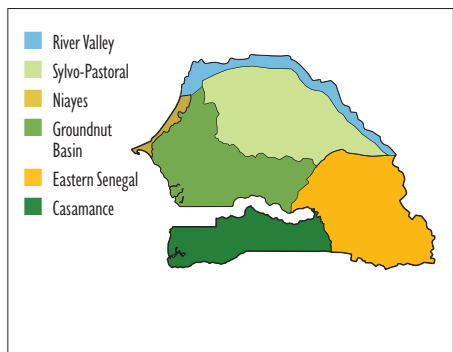




MAIZE <i>Zea mays</i> ✓	
Variety name:	Noor 96
Local name:	Early Thai
Variety type:	OPV
Quantity of seed:	16-20 kg/ha
Spacing:	75 cm x 25 cm (disque de 16 trous)
Grain/flesh color:	Yellow
Planting/sowing time:	1-15 July, after rain of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	80
Potential yield:	2-3 t/ha
Pest resistance:	—
Disease resistance:	Helminthosporium
Other stresses:	Drought-resistant
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SUDANO-SAHELIAN (KAOLACK, KAFFRINE, TAMBACOUNDA, FATICK SOUTH, KOLDA, SÉDHIU, ZIGUINCHOR; GROWN UNDER IRRIGATION: ST-LOUIS, MATAM)
Isohyet range 600-800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 + 40 kg/ha Urea
Application period:	At sowing or 15 days after sowing
Comment:	4 bags x 50 kg/ha NPK + 0.8 bags kg/ha Urea

FERTILIZER RECOMMENDATION ②	
Application rate:	160 kg/ha Urea
Application period:	2 doses: 50% at 27 DAS, 50% at 41 DAS
Comment:	3 bags x 50 kg/ha + 10 kg/ha Urea



GOOD AGRICULTURAL PRACTICES & MANAGEMENT ⬆

Soil and water conservation techniques:	Plough, harrow +/- on slopes. Clearance ploughing.
Method of fertilizer application:	Localized application and then buried.
Amendments:	Basal phosphate 400 kg/ha every 3 years.
Water management:	Rainfed cultivation following the rhythm of the rainy season.
Pest management:	Detect any infestation and apply appropriate treatment.
Weed control:	<p>Weeding/hoeing:</p> <ul style="list-style-type: none"> Mechanical hoeing 15 to 20 DAS with a sine hoe. Manual weeding 3-5 days after hoeing. Second hoeing 30-35 days. Third hoeing 45 days or on demand, especially if weediness. Removal of 1 plant 10-15 days after emergence. Ridging: after the first application of urea. <p>Harvesting: complete maturity, staking, cutting ears, bundling, drying to 16-20% grain humidity.</p> <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun. Ginning: manual or mechanical. Bagging: after threshing and winnowing. Storage: clean, ventilated, treated warehouse; in new bags of the same size. Application of selective herbicides if possible.
Cropping system:	Rotation (legumes, cotton).

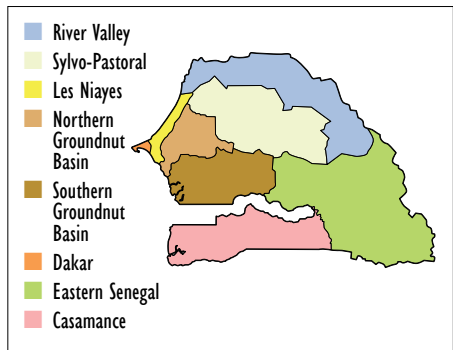
NUTRIENT RECOMMENDATIONS ↻	
122 kg/ha N - 30 kg/ha P ₂ O ₅ - 30 kg/ha K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha manure or compost, 3-4 days before sowing.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

SAHELIEEN (REGIONS DE LOUGA ET DE THIES)

Isohyet range 300-600 mm/year

MILLET *Pennisetum glaucum*



Variety name:	IBMV 8402
Local name:	
Variety type:	OPV (synthetic)
Quantity of seed:	4-6 kg/ha
Spacing:	90 cm x 90 cm (sowing disc: 4 holes)
Grain/flesh color:	Light yellow
Planting/sowing time:	May June (dry sowing possible; if wet after a useful rainfall of at least 20 mm)
Production system:	Rainfed
Days from planting to maturity:	80
Potential yield:	2 t/ha
Pest resistance:	Yes
Disease resistance:	Mildew tolerant, not very sensitive to anthrax
Other stresses:	
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS



69 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION



Application rate: 2-5 t/ha

FERTILIZER RECOMMENDATION



Application rate: 150 kg NPK 15-10-10
 Application period: 15 days after sowing (DAS)
 Comment: 3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate: 100 kg/ha Urea
 Application period: 2 applications: 50% at tillering (21st jour) and 50% at booting (45th jour)
 Comment: 2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate: Base phosphatage: 400 kg/ha every 3 years
 Application period:
 Comment: 8 bags x 50 kg/ha

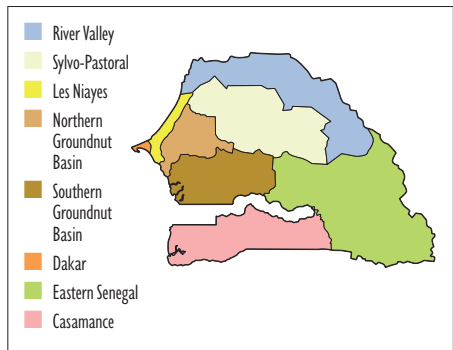
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Stone lines, mulching, grass strips
Method of fertilizer application:	Broadcast or point application
Amendments:	5 t/ha organic manure, as possible
Water management:	Zai holes, mulching, bunding
Pest management:	<p>Mildew (<i>Sclerospora graminicola</i>) Destruction of crop residues; removal of infected plants; end-of-cycle tillage; seed treatment with Apron or any other fungicide</p> <p>Anthrax (<i>Tolyposporium penicillariae</i>) Destruction of crop residues, deep ploughing, optimal sowing dates, removal of infected plants, rotation compliance, fungicide seed treatment; infestation period: flowering</p> <p>Ergot (<i>Claviceps fusiformis</i>) Destruction of crop residues, deep ploughing, optimal sowing dates, removal of infected plants, rotation compliance; infestation period: flowering</p> <p>Stem borers (<i>Acigona lgnefusalis</i> et <i>Sesamia calaistis</i>) Destruction of crop residues, deep ploughing, treatment: fungicide (2 g/hole) at sowing or Diméthoate (800 g m.a. or 25 l/ha) before booting; infestation period: August - September</p> <p>Cantharides Early sowing, use of smoke, treatment: Diméthoate (800 g m.a. or 2.5 l/ha), infestation period: flowering</p> <p>Leaf miners (<i>Heliocheilus albipunctella</i>) Ploughing at the end of the cycle or the start of dry wintering, treatment: Diméthoate (800 g m.a. ou 2.5 l/ha); infestation period: flowering</p> <p>Striga (<i>Striga hermontica</i>) Arrachage avant la floraison, apport de fumier et d engrais minéral, sarclage à 60 jours après levée, herbicide 2,4 D, Trifluraline; infestation period: after emergence</p>
Weed control:	<p>Hoing/weeding :</p> <ul style="list-style-type: none"> Mechanical hoing: 15-20 days after sowing (DAS) with sine hoe Manual weeding: 3-5 days after hoeing Second hoing: 30 -35 DAS Third hoing: 45 DAS especially if there is a grass or striga infestation Thinning: 2-3 plants 10-15 days after emergence Harvest: At full maturity end of cycle (desuckering, cutting of ears, bunching, and drying) at 16-20% grain moisture
Cropping system:	Rotation, associated crops (cowpea, groundnut/peanut)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (THIÈS, DIOURBEL)
 Isohyet range 300-600 mm/year

MILLET *Pennisetum glaucum* ✓

Variety name:	Gawane
Local name:	—
Variety type:	OPV
Quantity of seed:	4-6 kg/ha
Spacing:	99 cm x 6 cm (seed disk: 8 holes)
Grain/flesh color:	Light yellow
Planting/sowing time:	May-June. Dry sowing possible. For sowing in wet ground, sow after a rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	80
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Protein content 14.2% Glucose content 68.36% Phosphorus content 358.6 mg/100 g
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↩

69 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 2-5 t/ha organic manure if possible.

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	2 apports : 50% au tallage (21° JAS) et 50% à la montaison (45° JAS)
Comment:	2 sacs x 50 kg/ha

FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha NPK 15-10-10
Application period:	15 DAS
Comment:	3 sacs x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	400 kg/ha Basal phosphates
Application period:	Every 3 years, before planting
Comment:	8 bagss x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

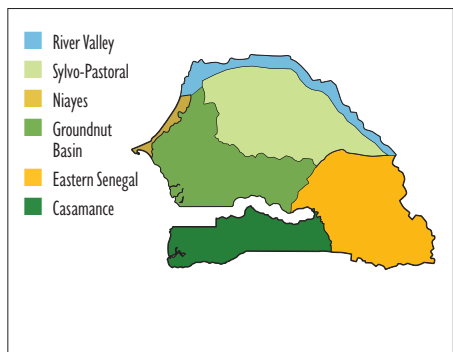
Soil and water conservation techniques:	Stone cordons, mulch, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic compost, if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	
Downy mildew (<i>Sclerospora graminicola</i>)	Destruction of crop residues. Removal of infected plants. Seed treatment with Apron or any other fungicide. Period of attack: entire cycle.
Millet smut (<i>Tolyposporium penicillariae</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Seed treatment with fungicide. Period of attack: flowering.
Ergot (<i>Claviceps fusiformis</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Period of attack: flowering.
Borers (<i>Acigona ignefusalis</i> et <i>Sesamia calaistis</i>)	Destruction of crop residues. Deep ploughing. Treatment: fungicide (2g/packet) at sowing or Dimethoate (800 g a.i. or 2.5 l/ha) before the season. Period of attack: August-September.
Cantharides	Early sowing. Use of smoke. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Millet miner moth (<i>Heliocheilus albipunctella</i>)	Plough at the end of the cycle or at the beginning of the dry wintering period. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Striga	Weed before flowering. Application of manure and mineral fertilizer. Weed at 60 days after emergence. Herbicide 2,4 D, Trifluralin. Period of attack: after emergence.

Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> Mechanical hoeing: 15 to 20 days after sowing with sine hoe, Manual weeding 3-5 days after hoeing, Second weeding 30-35 days after sowing, Third weeding 45 days after sowing or on demand especially if weeds are overgrown. Thinning: 2 to 3 plants 10-15 days after emergence, Harvesting: at full maturity at the end of the cycle (stump removal, cutting of ears, bundling, and drying) at 16-20% grain moisture.
---------------	--

Cropping system: Rotation, inter-cropping or associated with legumes (cowpea or groundnut).



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (THIÈS, KAOLACK, FATICK, TAMBACOUNDA)
Isohyet range 300-600 mm/year

MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	Souna 3
Local name:	—
Variety type:	OPV
Quantity of seed:	4-6 kg/ha
Spacing:	90 cm x 90 cm (seed disk: 4 holes)
Grain/flesh color:	Greenish-yellow
Planting/sowing time:	May-June. Dry sowing possible. For sowing in wet ground, sow after a rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	85-95
Potential yield:	2.5-3.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha organic manure if possible.

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	50% at tillering (21 st DAS) et 50% at bolting (45 th DAS)
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 15-10-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

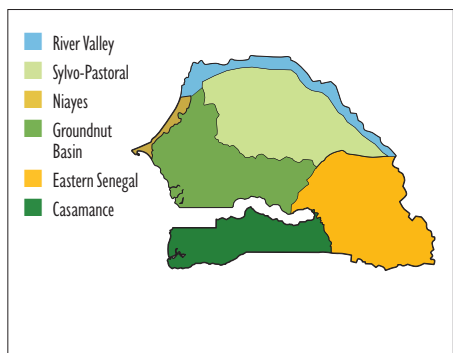
FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Every 3 years, before planting
Comment:	8 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

Soil and water conservation techniques:	Stone cordons, mulch, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic compost, if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	
Downy mildew (<i>Sclerospora graminicola</i>)	Destruction of crop residues. Removal of infected plants. Seed treatment with Apron or any other fungicide. Period of attack: entire cycle.
Millet smut (<i>Tolyposporium penicillariae</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Seed treatment with fungicide. Period of attack: flowering.
Ergot (<i>Claviceps fusiformis</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Period of attack: flowering.
Borers (<i>Acigona lgnefusalis</i> et <i>Sesamia calaistis</i>)	Destruction of crop residues. Deep ploughing. Treatment: fungicide (2g/packet) at sowing or Dimethoate (800 g a.i. or 2.5 l/ha) before the season. Period of attack: August-September.
Cantharides	Early sowing. Use of smoke. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Millet miner moth (<i>Heliocheilus albipunctella</i>)	Plough at the end of the cycle or at the beginning of the dry wintering period. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Striga	Weed before flowering. Application of manure and mineral fertilizer. Weed at 60 days after emergence. Herbicide 2,4 D, Trifluralin. Period of attack: after emergence.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe • Manual weeding 3-5 days after hoeing • Second weeding 30-35 days after sowing • Third weeding 45 days after sowing or on demand especially if weeds are overgrown • Thinning: 2 to 3 plants 10-15 days after emergence Harvesting: at full maturity at the end of the cycle (stump removal, cutting of ears, bundling, and drying) at 16-20% grain moisture.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut).



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (KAOLACK, FATICK)
 Isohyet range 400-600 mm/year

MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	Thialack 2
Local name:	—
Variety type:	OPV
Quantity of seed:	4-6 kg/ha
Spacing:	90 cm x 90 cm (seed disk: 4 holes)
Grain/flesh color:	Gray
Planting/sowing time:	May-June. Dry sowing possible. For sowing in wet ground, sow after a rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	95
Potential yield:	2-3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to ergot and smut
Nutritional quality:	—
Other qualities:	Well-accepted for cooking

NUTRIENT RECOMMENDATIONS ↻	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha organic manure if possible.

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	50% at tillering (21 st DAS) et 50% at bolting (45 th DAS)
Comment:	2 bags x 50 kg/ha

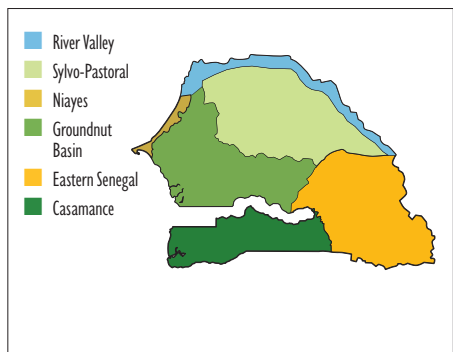


FERTILIZER RECOMMENDATION ①	
Application rate:	150 kg/ha NPK 15-10-10
Application period:	15 DAS
Comment:	3 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Every 3 years, before planting
Comment:	8 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

Soil and water conservation techniques:	Stone cordons, mulch, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic compost, if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	
Downy mildew (<i>Sclerospora graminicola</i>)	Destruction of crop residues. Removal of infected plants. Seed treatment with Apron or any other fungicide. Period of attack: entire cycle.
Millet smut (<i>Tolyposporium penicillariae</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Seed treatment with fungicide. Period of attack: flowering.
Ergot (<i>Claviceps fusiformis</i>)	Destruction of crop residues. Deep ploughing. Optimal sowing dates. Removal of infected plants. Respect rotation schedule. Period of attack: flowering.
Borers (<i>Acigona lgnefusalis</i> et <i>Sesamia calaistis</i>)	Destruction of crop residues. Deep ploughing. Treatment: fungicide (2g/packet) at sowing or Dimethoate (800 g a.i. or 2.5 l/ha) before the season. Period of attack: August-September.
Cantharides	Early sowing. Use of smoke. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Millet miner moth (<i>Heliocheilus albipunctella</i>)	Plough at the end of the cycle or at the beginning of the dry wintering period. Treatment: Dimethoate (800 g a.i. or 2.5 l/ha). Period of attack: flowering.
Striga	Weed before flowering. Application of manure and mineral fertilizer. Weed at 60 days after emergence. Herbicide 2,4 D, Trifluralin. Period of attack: after emergence.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary: <ul style="list-style-type: none"> • Mechanical hoeing: 15 to 20 days after sowing with sine hoe • Manual weeding 3-5 days after hoeing • Second weeding 30-35 days after sowing • Third weeding 45 days after sowing or on demand especially if weeds are overgrown • Thinning: 2 to 3 plants 10-15 days after emergence Harvesting: at full maturity at the end of the cycle (stump removal, cutting of ears, bundling, and drying) at 16-20% grain moisture.
Cropping system:	Rotation, inter-cropping or associated with legumes (cowpea or groundnut).


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GROUNDNUT BASINS, EASTERN SENEGAL, RIVER VALLEY (DIOURBEL, TAMBACOUNDA, KÉDOUGOU, ST LOUIS, MATAM)

Isohyet range 600-1,200 mm/year

OKRA <i>Abelmoschus esculentus</i> ✓	
Variety name:	Volta
Local name:	Kandia
Variety type:	Hybrid
Quantity of seed:	0.4-0.5 kg/ha
Spacing:	80 cm x 40 cm, thin to 1 plant per hill, from 1-3 weeks after sowing
Grain/flesh color:	Dark green
Planting/sowing time:	February: Eastern Senegal. All year: Groundnut Basins, River Valley.
Production system:	Winter and off season with irrigation
Days from planting to maturity:	60
Potential yield:	10-12 t/ha
Pest resistance:	—
Disease resistance:	Yes: yellow vein mosaic virus (YVMV)
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
28 N - 28 P ₂ O ₅ - 56 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	15-20 t/ha organic manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	220 kg/ha NPK 10-10-20
Application period:	50% (110 kg/ha) at 7 JAL and 50% at 40 JAL
Comment:	4.4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

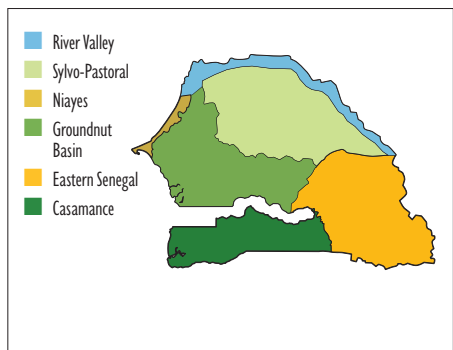
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Transplanting in pots with trays and mulching with straw to reduce evaporation.
Method of fertilizer application:	Spot fertilizing and then burying: make a small hole 5 cm deep at about 7-10 cm from the plant, put the fertilizer in it and cover the hole with soil.
Amendments:	15-20 t/ha of organic matter when possible, during soil preparation before sowing.
Water management:	Drip system, watering in basins (maintain water).
Pest management:	Regular observations of the crop and treatment in case of attacks with an appropriate product.
Weed control:	Mechanical and chemical weeding (with herbicides).
Cropping system:	Rotation with other species than Malvaceous.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
RIVER VALLEY, CASAMANCE, EASTERN SENEGAL, NIAYES (TAMBACOUNDA, KÉDOUGOU, THIÈS, LOUGA, ST LOUIS, MATAM)
 Isohyet range 400-1,200 mm/year

ONION <i>Allium cepa</i> ✓	
Variety name:	Gandiol
Local name:	Soblé
Variety type:	—
Quantity of seed:	0.4-0.5 kg/ha
Spacing:	20 cm x 10 cm
Grain/flesh color:	Violet red
Planting/sowing time:	October: River Valley. November: Niayes, Eastern Senegal. Plants should be raised in a nursery and transplanted 4-6 weeks after germination.
Production system:	Off season
Days from planting to maturity:	110-115
Potential yield:	40-45 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Very well suited for conservation.

NUTRIENT RECOMMENDATIONS ↻	
87.5 N - 87.5 P ₂ O ₅ - 175 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	20-30 t/ha organic manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	875 kg/ha NPK 10-10-20
Application period:	50% (437.5 kg/ha) at 7 JAL and 50% at 40 JAL
Comment:	17.5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Creation of embankments to avoid runoff and application of organic matter to improve water retention capacity.
Method of fertilizer application:	Spot fertilizing and then burying: Microdose (MD) of 3.5g NPK (10-10-20) in the middle of 4 plants as a basal fertilizer, 7 days after transplanting. As maintenance fertilizer, apply 3.5g NPK in the middle of 4 plants at 40 days after transplanting.
Amendments:	20-30 t/ha organic manure or compost, at soil preparation before transplanting.
Water management:	Watering system in plots with dike (to keep the water) also adapted drip irrigation system.
Pest management:	Regular observations of the crop and treatment in case of attacks with an appropriate product.
Weed control:	Mechanical and chemical weeding (with herbicides).
Cropping system:	Rotation with other species than Amaryllidaceae.

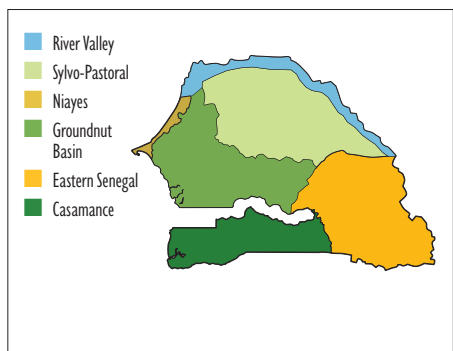




PEPPER <i>Capsicum chinense</i> ✓	
Variety name:	Big Sun
Local name:	Kaani
Variety type:	—
Quantity of seed:	0.3-0.4 kg/ha
Spacing:	50 cm x 50 cm
Grain/flesh color:	Dark green to yellow
Planting/sowing time:	February: Eastern Senegal, River Valley. March: Niayes. October: Groundnut Basins. Plants should be raised in a nursery and transplanted 4-6 weeks after germination (6-8 leaves stage).
Production system:	Hot dry season
Days from planting to maturity:	90 (first harvest)
Potential yield:	10-15 t/ha
Pest resistance:	—
Disease resistance:	Yes: tobacco mosaic virus
Other stresses:	—
Nutritional quality:	—
Other qualities:	Very spicy and fragrant



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID

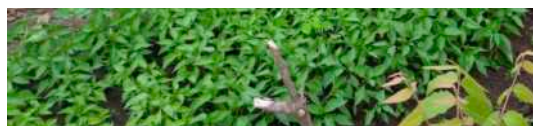


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

GROUNDNUT BASINS, NIAYES, EASTERN SENEGAL, RIVER VALLEY (DIOURBEL, KAOLACK, KAFFRINE, FATICK, THIÈS, LOUGA, TAMBAKOUNDA, KÉDOUGOU, ST LOUIS, MATAM)

NUTRIENT RECOMMENDATIONS ↻	
28 N - 28 P ₂ O ₅ - 56 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	15-20 t/ha organic manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	280 kg/ha NPK 10-10-20
Application period:	50% (140 kg/ha) at 7 DAS and 50% at 40 DAS
Comment:	5.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

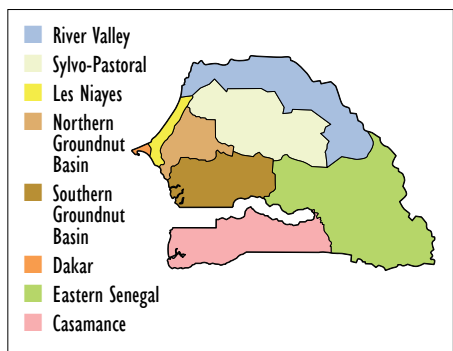



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Transplanting in pots with trays and mulching with straw to reduce evaporation.
Method of fertilizer application:	Spot fertilizing and then burying: make a small hole 5 cm deep at about 7-10 cm from the plant, put the fertilizer in it and cover the hole with soil.
Amendments:	15-20 t/ha of organic matter when possible, during soil preparation before transplanting.
Water management:	Drip system, watering in basins (maintain water).
Pest management:	Regular observations of the crop and treatment in case of attacks with an appropriate product.
Weed control:	Mechanical and chemical weeding (with herbicides).
Cropping system:	Rotation with other species than solanaceous.







WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID





RICE <i>Oryza sativa</i> 	
Variety name:	Sahel 177
Local name:	
Variety type:	Pure line
Quantity of seed:	40 kg transplanting; 80 kg direct seeding; 120 kg broadcast
Spacing:	Broadcast or transplanting 20 cm x 20 cm or 25 cm x 25 cm
Grain/flesh color:	White
Planting/sowing time:	Dry season: 1 Feb-15 March; Rainfed: 1-25 July
Production system:	Irrigation
Days from planting to maturity:	Dry season: 122 days after planting (DAP); rainfed: 122 DAP
Potential yield:	10 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	Aromatic

NUTRIENT RECOMMENDATIONS 	
	104.82 N - 36 P ₂ O ₅ - 36 K ₂ O + 12 S + 2 B + Mn + Ca + Mg + Zn

ORGANIC FERTILIZER RECOMMENDATION 	
Application rate:	When possible, 2-5 t/ha manure or compost

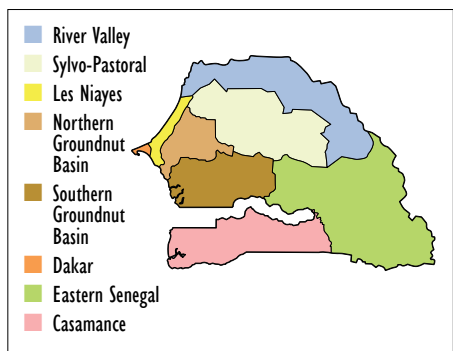
FERTILIZER RECOMMENDATION 	
Application rate:	Recommendation 1: 100 kg/ha NPK (18-46-0) Recommendation 2: 50 kg/ha NPK (18-46-0) + 100 kg/ha NPK (9-23-30)
Application period:	NPK at sowing or transplanting
Comment:	R1: 2 bags x 50 kg/ha (18-46-0) R2: 1 bag 50 kg/ha (18-46-0) and 2 bags x 50 kg/ha (9-23-30)

FERTILIZER RECOMMENDATION 	
Application rate:	Recommendation 1: 250-300 kg/ha Urea
Application period:	2 applications: (i) 125-150 kg/ha à 10-15 DAP (ii) 125-250 kg/ha à 45-55 DAP
	3 applications: (i) 100-120 kg/ha à 10-15 DAP (ii) 100-120 kg/ha à 45-55 DAP (iii) heading 50-60 kg/ha
Comment:	5-6 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 	
Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure when necessary
Water management:	Basin, alternating humidification and drying. Drainage. Rhythm of irrigations: <ul style="list-style-type: none"> Irrigation of the plot 24 hours before sowing; Sowing under a water level of about 5 cm, maintaining the water level for one week, from 1st to 7th day of sowing Drainage and dry for 2 or 3 days (8th to 10th DAP). Irrigation with maintenance of the water level at 5cm until the end of the 3rd week, from the 10th to the 19th DAP Complete drainage for herbicide application, maintaining dry for 2 days, from the 19th to the 21st DAP Irrigation and maintenance of the blade at the strict minimum for 4 to 5 days for fertilizer application Raising the water level to about 5 cm, until panicular initiation (PI) Lower the water blade to the bare minimum for 4 to 5 days to apply the urea Raising the water level to 10 cm to the pasty stage (15 days after flowering) Complete drainage of the plot at the pasty stage so that the soil is dry at maturity
Pest management:	Scout for insects and apply pesticide, e.g. fungicides, insecticides, seed treatment, integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide use : Chemical weeding <ul style="list-style-type: none"> Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds Adequate herbicide for broadleaf weeds and grasses Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide
Cropping system:	Continuous monocropping



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID



RICE *Oryza sativa*



Variety name:	Nerica 4
Local name:	
Variety type:	Pure line
Quantity of seed:	40 kg transplanting; 80 kg broadcast
Spacing:	Direct seeding: 40 x 25 cm; Continuous seeding spaced 50 cm; Transplanting 20 x 20 ou 25 x 25 cm
Grain/flesh color:	White
Planting/sowing time:	Rainfed: 1-25 July (after a useful rainfall of at least 20 mm)
Production system:	Upland
Days from planting to maturity:	100 days after sowing (DAS)
Potential yield:	5 t/ha
Pest resistance:	
Disease resistance:	Pyricularia
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS



104.82 N - 36 P₂O₅ - 36 K₂O + 12 S + 2 B + Mn + Ca + Mg + Zn

ORGANIC FERTILIZER RECOMMENDATION



Application rate: When possible, 2-5 t/ha manure or compost

FERTILIZER RECOMMENDATION



Application rate:	150-200 kg/ha NPK (15-15-15)
Application period:	NPK at sowing or transplanting
Comment:	3-4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate:	150 kg/ha Urea
Application period:	2 applications: (i) 75 kg/ha at tillering, and (ii) 75 kg/ha at panicular initiation
Comment:	3 bags x 50 kg/ha

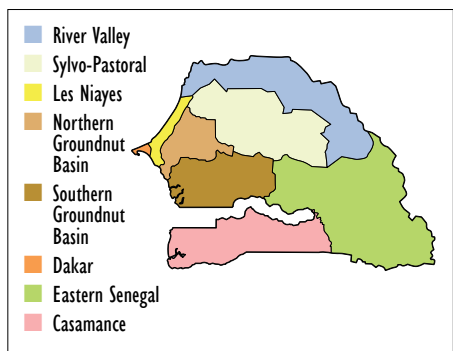
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough and harrow
Method of fertilizer application:	Spot (during direct seeding), broadcast, fertilizer deep placement (FDP) of mineral fertilizer <ul style="list-style-type: none"> Basal fertilizer: 150 to 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46%
	Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS)
	Basal phosphate: 400 kg/ha mineral fertilizer every 3 years <ul style="list-style-type: none"> Basal fertilizer: 150 à 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46%
	Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS)
	Basal phosphate: 400 kg/ha every 3 years
Amendments:	Add organic manure if possible. Manure/compost: 2 to 5 t/ha to be applied 3-4 days before sowing for poorly decomposed manure (avoid long exposure to the sun which depreciates the quality)
Water management:	Rainfed cultivation follows the season cycle
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary; hoeing/weeding: <ul style="list-style-type: none"> Mechanical hoeing: 15 to 20 days after sowing with sine hoe Manual weeding 3-5 days after hoeing Second sowing 30 -35 days after sowing Third sowing 45 days after sowing or on demand especially if weeds growing
Cropping system:	Rotation (legumes and maize)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID



RICE *Oryza sativa*



Variety name:	Wab 56-50
Local name:	
Variety type:	Pure line
Quantity of seed:	40 kg transplanting; 80 kg broadcasting
Spacing:	Direct seeding: 40 x 25 cm; Continuous seeding spaced 50 cm; Transplanting 20 x 20 or 25 x 25 cm
Grain/flesh color:	White
Planting/sowing time:	Rainfed: 1-25 July (after a useful rainfall of at least 20 mm)
Production system:	Upland
Days from planting to maturity:	75 days after sowing (DAS) 50% heading
Potential yield:	3-4 t/ha
Pest resistance:	
Disease resistance:	Pyricularia
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS



104.82 N - 36 P₂O₅ - 36 K₂O + 12 S + 2 B + Mn + Ca + Mg + Zn

ORGANIC FERTILIZER RECOMMENDATION



Application rate: When possible, 2-5 t/ha manure or compost: organic manure, compost, biofertilizers, biostimulants, inoculants

FERTILIZER RECOMMENDATION



Application rate: 150-200 kg/ha NPK (15-15-15)
 Application period: NPK at sowing or transplanting
 Comment: 3-4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate: 150 kg/ha Urea
 Application period: 2 applications:
 (i) 75 kg/ha at tillering and
 (ii) 75 kg/ha at panicular initiation
 Comment: 3 bags x 50 kg/ha

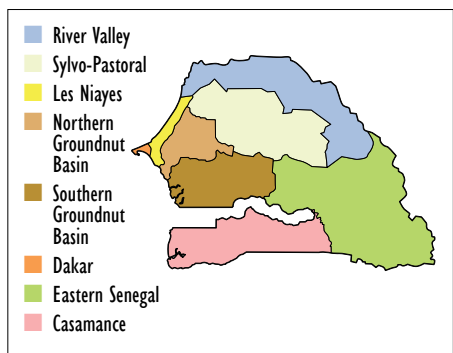
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough and harrow
Method of fertilizer application:	Spot (during direct seeding), broadcast, fertilizer deep placement (FDP) of mineral fertilizer <ul style="list-style-type: none"> Basal fertilizer : 150 to 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46% Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS) Basal phosphate: 400 kg/ha mineral fertilizer every 3 years <ul style="list-style-type: none"> Basal fertilizer: 150 à 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46% Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS) Basal phosphate: 400 kg/ha every 3 years
Amendments:	Add organic manure if possible. Manure/compost: 2 to 5 t/ha to be applied 3-4 days before sowing for poorly decomposed manure (avoid long exposure to the sun which depreciates the quality)
Water management:	Rainfed cultivation follows the season cycle
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) oand herbicide if necessary; hoeing/weeding: <ul style="list-style-type: none"> Mechanical hoeing: 15 to 20 days after sowing with sine hoe Manual weeding 3-5 days after hoeing Second sowing 30 -35 days after sowing Third sowing 45 days after sowing or on demand especially if weeds growing Chemical weeding <ul style="list-style-type: none"> Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds Adequate herbicide for broadleaf weeds and grasses Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide
Cropping system:	Rotation (ex. rotation, culture mixte/associée)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN, SUDANIAN
 Isohyet range 600-800-1200 mm/year

RICE *Oryza sativa*



Variety name:	Nerica 6
Local name:	
Variety type:	Pure line
Quantity of seed:	40 kg transplanting; 80 kg broadcast
Spacing:	Direct seeding: 40 x 25 cm; Continuous seeding spaced 50 cm; Transplanting 20 x 20 ou 25 x 25 cm
Grain/flesh color:	White
Planting/sowing time:	Rainfed: 1-25 July (after a useful rainfall of at least 20 mm)
Production system:	Upland
Days from planting to maturity:	95-100 days after sowing (DAS)
Potential yield:	5 t/ha
Pest resistance:	Borers
Disease resistance:	Pyricularia
Other stresses:	Lodging
Nutritional quality:	
Other qualities:	Good for cooking

NUTRIENT RECOMMENDATIONS



104.82 N - 36 P₂O₅ - 36 K₂O + 12 S + 2 B + Mn + Ca + Mg + Zn

ORGANIC FERTILIZER RECOMMENDATION



Application rate: When possible, 2-5 t/ha manure or compost: organic manure, compost, biofertilizers, biostimulants, innoculants

FERTILIZER RECOMMENDATION



Application rate: 150-200 kg/ha NPK (15-15-15)
 Application period: NPK at sowing and transplanting
 Comment: 3-4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION



Application rate: 150 kg/ha Urea
 Application period: 2 applications:
 (i) 75 kg/ha at tillering and
 (ii) 75 kg/ha at panicular initiation
 Comment: 3 bags x 50 kg/ha

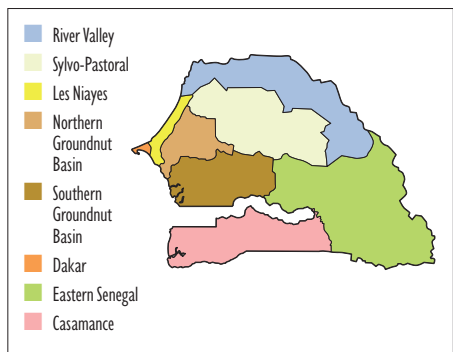
GOOD AGRICULTURAL PRACTICES & MANAGEMENT



Soil and water conservation techniques:	Plough and harrow
Method of fertilizer application:	Spot (during direct seeding), broadcast, fertilizer deep placement (FDP) of mineral fertilizer <ul style="list-style-type: none"> Basal fertilizer: 150 to 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46% Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS) Basal phosphate: 400 kg/ha mineral fertilizer every 3 years <ul style="list-style-type: none"> Basal fertilizer: 150 à 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46% Prilled urea: 150 kg/ha in 2 parts: <ul style="list-style-type: none"> Portions: 50% at tillering (27th DAS) and 50% at bolting (41st DAS) Basal phosphate: 400 kg/ha every 3 years
Amendments:	Add organic manure if possible. Manure/compost: 2 to 5 t/ha to be applied 3-4 days before sowing for poorly decomposed manure (avoid long exposure to the sun which depreciates the quality)
Water management:	Rainfed cultivation follows the season cycle
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) oand herbicide if necessary; hoeing/weeding: <ul style="list-style-type: none"> Mechanical hoeing: 15 to 20 days after sowing with sine hoe Manual weeding 3-5 days after hoeing Second sowing 30 -35 days after sowing Third sowing 45 days after sowing or on demand especially if weeds growing Chemical weeding <ul style="list-style-type: none"> Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds Adequate herbicide for broadleaf weeds and grasses Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days after Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide
Cropping system:	Rotation (légumes et maïs)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
RIVER VALLEY
 Isohyet range 300-600 mm/year

RICE *Oryza sativa* ✓

Variety name:	Nerica S 44
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha transplanting, 80 kg/ha direct seeding, 120 kg/ha broadcast
Spacing:	20 cm x 20 cm or 25 cm x 25 cm sowing by broadcast or transplanting
Grain/flesh color:	White
Planting/sowing time:	1 Feb-15 March dry season, 1-25 July rainfed
Production system:	Irrigation
Days from planting to maturity:	122 DAS
Potential yield:	12 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Well-suited for cooking

NUTRIENT RECOMMENDATIONS ↻

104.82 N - 36 P₂O₅ - 36 K₂O +12 S +2 B +Mn +Ca
 +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: When possible, 2-5 t/ha manure or compost, etc.



FERTILIZER RECOMMENDATION ①

Application rate 1:	100 kg/ha NPK 18-46-0
Application rate 2:	50 kg/ha NPK 18-46-0 + 100 kg/ha NPK 9-23-30
Application period:	NPK at sowing or transplanting
Comment 1:	2 bags x 50 kg/ha NPK 18-46-0
Comment 2:	1 bag 50 kg/ha NPK 18-46-0 and 2 bags x 50 kg/ha NPK 9-23-30



FERTILIZER RECOMMENDATION ②

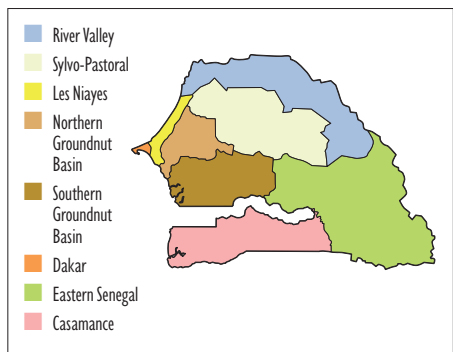
Application rate:	250-300 kg/ha Urea
Application period:	2 applications: (i) 125-150 kg/ha at 10-15 DAP (ii) 125-250 kg/ha at 45-55 DAP
	3 applications: (i) 100-120 kg/ha at 10-15 DAP (ii) 100-120 kg/ha at 45-55 DAP (iii) heading 50-60 kg/ha
Comment:	5-6 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍀

Soil and water conservation techniques:	Plough, harrow, puddling and leveling.
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP).
Amendments:	Add organic manure when necessary, i.e., rock phosphate, organic material, and/or compost.
Water management:	Basin, alternating humidification and drying. Drainage. Irrigation rhythm: <ul style="list-style-type: none"> • Irrigation of the plot 24 hours before sowing. • Sowing under a water level of about 5 cm, maintaining the water level for one week, from 1st to 7th day of sowing. • Drainage and "dry" for 2 or 3 days (8th to 10th DAP). • Irrigation with maintenance of the water level at 5cm until the end of the 3rd week, from the 10th to the 19th DAP. • Complete drainage for herbicide application, maintaining dry for 2 days, from the 19th to the 21st DAP. • Irrigation and maintenance of the blade at the strict minimum for 4 to 5 days for fertilizer application. • Raising the water level to about 5 cm, until panicular initiation (PI). • Lower the water blade to the bare minimum for 4 to 5 days to apply the urea. • Raising the water level to 10 cm to the pasty stage (15 days after flowering). • Complete drainage of the plot at the pasty stage so that the soil is dry at maturity.
Pest management:	Scout for insects and apply pesticide (IPM), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide use (chemical weeding): <ul style="list-style-type: none"> • Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds. • Adequate herbicide for broadleaf weeds and grasses. • Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds. • Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later. • Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide.
Cropping system:	Continuous monocropping.



RICE <i>Oryza sativa</i> ✓	
Variety name:	Sahel 202
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha transplanting, 80 kg/ha direct seeding, 120 kg/ha broadcast
Spacing:	20 cm x 20 cm or 25 cm x 25 cm sowing by broadcast or transplanting
Grain/flesh color:	White
Planting/sowing time:	1 Feb-15 March dry season, 1-25 July rainfed
Production system:	Irrigation
Days from planting to maturity:	117-139 DAS
Potential yield:	11 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	Well-suited for cooking


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
RIVER VALLEY
 Isohyet range 300-600 mm/year

NUTRIENT RECOMMENDATIONS ↻	
104.82 N - 36 P ₂ O ₅ - 36 K ₂ O +12 S +2 B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	When possible, 2-5 t/ha manure or compost



FERTILIZER RECOMMENDATION ①	
Application rate 1:	100 kg/ha NPK 18-46-0
Application rate 2:	50 kg/ha NPK 18-46-0 + 100 kg/ha NPK 9-23-30
Application period:	NPK at sowing or transplanting
Comment 1:	2 bags x 50 kg/ha NPK 18-46-0
Comment 2:	1 bag 50 kg/ha NPK 18-46-0 and 2 bags x 50 kg/ha NPK 9-23-30



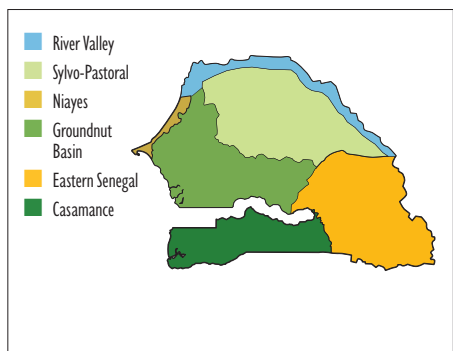
FERTILIZER RECOMMENDATION ②	
Application rate:	250-300 kg/ha Urea
Application period:	2 applications: (i) 125-150 kg/ha at 10-15 DAP (ii) 125-250 kg/ha at 45-55 DAP 3 applications: (i) 100-120 kg/ha at 10-15 DAP (ii) 100-120 kg/ha at 45-55 DAP (iii) heading 50-60 kg/ha
Comment:	5-6 bags x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍏

Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure when necessary
Water management:	Basin, alternating humidification and drying. Drainage. Rhythm of irrigations: <ul style="list-style-type: none"> • Irrigation of the plot 24 hours before sowing. • Sowing under a water level of about 5 cm, maintaining the water level for one week, from 1st to 7th day of sowing. • Drainage and "dry" for 2 or 3 days (8th to 10th DAP). • Irrigation with maintenance of the water level at 5cm until the end of the 3rd week, from the 10th to the 19th DAP. • Complete drainage for herbicide application, maintaining dry for 2 days, from the 19th to the 21st DAP. • Irrigation and maintenance of the blade at the strict minimum for 4 to 5 days for fertilizer application. • Raising the water level to about 5 cm, until panicular initiation (PI). • Lower the water blade to the bare minimum for 4 to 5 days to apply the urea. • Raising the water level to 10 cm to the pasty stage (15 days after flowering). • Complete drainage of the plot at the pasty stage so that the soil is dry at maturity.
Pest management:	Scout for insects and apply pesticide (IPM), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide use (chemical weeding): <ul style="list-style-type: none"> • Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds. • Adequate herbicide for broadleaf weeds and grasses. • Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds. • Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later. • Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide.
Cropping system:	Continuous monocropping.



RICE <i>Oryza sativa</i> ✓	
Variety name:	Sahel 108
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha transplanting, 80 kg/ha direct seeding, 120 kg/ha broadcast
Spacing:	20 cm x 20 cm broadcast sowing, or 25 cm x 25 cm transplanting
Grain/flesh color:	White
Planting/sowing time:	1 Feb-15 March dry season, 1-25 July rainfed
Production system:	Irrigation
Days from planting to maturity:	117 DAS dry season, 105 DAS rainfed
Potential yield:	10 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Lodging
Nutritional quality:	Protein, pro-vitamin A, micronutrients
Other qualities:	Long grain, aromatic, cooking quality


WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
RIVER VALLEY
 Isohyet range 300-600 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate 1:	100 kg/ha NPK 18-46-0
Application rate 2:	50 kg/ha NPK 18-46-0 + 100 kg/ha NPK 9-23-30
Application period:	NPK at sowing or transplanting
Comment 1:	2 bags x 50 kg/ha NPK 18-46-0
Comment 2:	1 bag x 50 kg/ha NPK 18-46-0 and 2 bags x 50 kg/ha NPK 9-23-30



FERTILIZER RECOMMENDATION ②	
Application rate:	250-300 kg/ha Urea
Application period:	2 applications: (i) 125-150 kg/ha at 10-15 DAP (ii) 125-250 kg/ha at 45-55 DAP 3 applications: (i) 100-120 kg/ha at 10-15 DAP (ii) 100-120 kg/ha at 45-55 DAP (iii) heading 50-60 kg/ha
Comment:	5-6 bags x 50 kg/ha

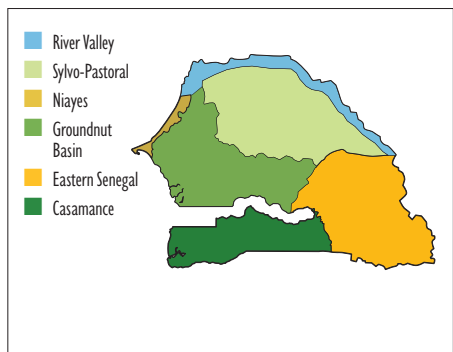
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, puddling and leveling.
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP).
Amendments:	Add organic manure when necessary, i.e., rock phosphate, organic material, and/or compost.
Water management:	Basin, alternating humidification and drying. Drainage. Irrigation rhythm: <ul style="list-style-type: none"> • Irrigation of the plot 24 hours before sowing. • Sowing under a water level of about 5 cm, maintaining the water level for one week, from 1st to 7th day of sowing. • Drainage and "dry" for 2 or 3 days (8th to 10th DAP). • Irrigation with maintenance of the water level at 5cm until the end of the 3rd week, from the 10th to the 19th DAP. • Complete drainage for herbicide application, maintaining dry for 2 days, from the 19th to the 21st DAP. • Irrigation and maintenance of the level at the strict minimum for 4 to 5 days for fertilizer application. • Raising the water level to about 5 cm, until panicular initiation (PI). • Lower the water level to the bare minimum for 4 to 5 days to apply the urea. • Raising the water level to 10 cm to the pasty stage (15 days after flowering). • Complete drainage of the plot at the pasty stage so that the soil is dry at maturity.
Pest management:	Scout for insects and apply pesticide (IPM), e.g. fungicides, insecticides, seed treatments.
Weed control:	Good agricultural practices (mechanical weeding) and herbicide use (chemical weeding): <ul style="list-style-type: none"> • Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds. • Adequate herbicide for broadleaf weeds and grasses. • Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds. • Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later. • Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide.
Cropping system:	Continuous monocropping.

NUTRIENT RECOMMENDATIONS	
104.82 N - 36 P ₂ O ₅ - 36 K ₂ O + 12 S + 2 B + Mn + Ca + Mg + Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	When possible, 2-5 t/ha manure or compost, etc.




WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID

RICE *Oryza sativa*

Variety name:	Tox 728-1
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha transplanting, 80 kg/ha broadcast
Spacing:	40 cm x 25 cm direct seeding, or 50 cm x 25 cm continuous sowing, or 20 x 20 or 25 x 25 cm transplanting
Grain/flesh color:	White
Planting/sowing time:	1-25 July rainfed, sow after a rainfall of at least 20 mm
Production system:	Irrigation
Days from planting to maturity:	122 DAS
Potential yield:	12 t/ha
Pest resistance:	Borer
Disease resistance:	Pyricularia, rhynchosporium, helicospirium
Other stresses:	Lodging
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS

104.82 N - 36 P₂O₅ - 36 K₂O +12 S +2 B +Mn +Ca
 +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible, 2-5 t/ha manure or compost, etc.


FERTILIZER RECOMMENDATION ①

Application rate:	150-200 kg/ha NPK 15-15-15
Application period:	At sowing or transplanting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

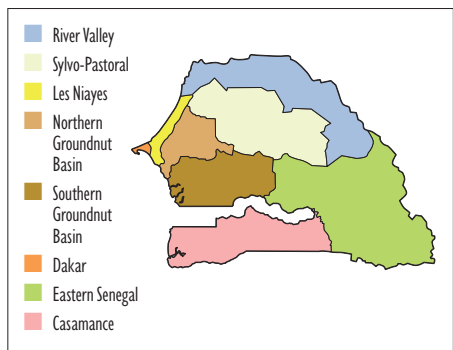
Application rate:	150 kg/ha Urea
Application period:	50% at tillering and 50% at panicle initiation
Comment:	3 bags x 50 kg/ha


GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough and harrow.
Method of fertilizer application:	Spot (during direct seeding), broadcast, fertilizer deep placement (FDP) of mineral fertilizer: <ul style="list-style-type: none"> Basal fertilizer 150 to 200 kg/ha of 15-15-15 Cover fertilizer: Urea 46% Prilled urea: 150 kg/ha in 2 parts : <ul style="list-style-type: none"> 50% at tillering (27th DAS) and 50% at bolting (41st DAS) Basal phosphate 400 kg/ha mineral fertilizer every 3 years
Amendments:	Add organic manure if possible. Manure/compost: 2 to 5 t/ha to be applied 3-4 days before sowing for poorly decomposed manure (avoid long exposure to the sun which depreciates the quality)
Water management:	Rainfed cultivation follows the season cycle.
Pest management:	Scout for insects and apply pesticide, e.g. fungicides, insecticides, seed treatments, integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide if necessary. Hoeing/weeding: <ul style="list-style-type: none"> Mechanical hoeing 15-20 days after sowing with sine hoe Manual weeding 3-5 days after hoeing Second sowing 30-35 days after sowing Third sowing 45 days after sowing or on demand especially if weeds growing. Chemical weeding: <ul style="list-style-type: none"> Adequate herbicide for control of grasses, cyperaceae and broadleaf weeds. Adequate herbicide for broadleaf weeds and grasses. Adequate herbicide for control of grasses, herbaceous weeds and broadleaf weeds. Red rice control: mechanical tillage option after pre-irrigation and emergence of red rice cross offset 15 days later. Pre-irrigation after offset, let grow and treatment with broad-spectrum herbicide.
Cropping system:	Rotation, mixed/interplanted culture.



WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



SORGHUM *Sorghum bicolor* ✓

Variety name:	Darou (synonym: ISRA-S-622-B)
Local name:	—
Variety type:	Line
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 40 cm (seed disk of 8 holes)
Grain/flesh color:	White
Planting/sowing time:	July: sow in wet ground after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	105
Potential yield:	2.5-3 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to grain mold.
Nutritional quality:	Protein content: 12.64% Carbohydrate content: 71.80% Cellulose content: 2.17% Phosphorus content: 314.72
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

69 N - 15 P₂O₅ - 15 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 2-5 t/ha organic manure or compost.



FERTILIZER RECOMMENDATION ①

Application rate:	100 kg/ha NPK 15-15-15 or 15-10-10
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea, prilled
Application period:	2 doses: 50% at tillering and 50% at bolting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	400 kg/ha Phosphate
Application period:	Basal application of phosphate every 3 years
Comment:	8 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

Soil and water conservation techniques:	Stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or in hill.
Amendments:	5 t/ha organic manure if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	Panicle disease and grain mold — Period of attack: flowering. Destruction of crop residues. Deep plowing. Optimal sowing dates. Removal of infected plants. Respect of the rotation. Striga — Period of attack: after emergence. Harvesting before flowering. Application of manure and mineral fertilizer. Weeding at 60 days after emergence.

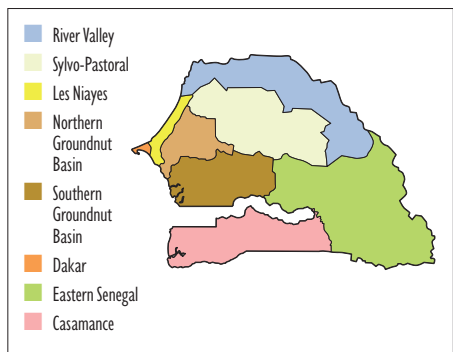
Weed control:	Weeding/hoeing :
	<ul style="list-style-type: none"> Mechanical hoeing 15 after emergence with a sine hoe. Manual weeding 3-5 days after hoeing. Second weeding/hoeing 15 days after the first manual weeding. Third weeding/hoeing as needed, especially if weeds overgrown or striga appears. Removal of 3 plants 10-15 days after emergence.
	Harvesting: complete maturity (stalking, cutting ears, bundling, drying) to 16-20% grain moisture.
	<ul style="list-style-type: none"> Drying: 72 hours minimum in the sun, and assure the grain contains ≤ 12% moisture. Ginning: after drying is complete; manual or mechanical. GAP and application of selective herbicides if possible.

Cropping system: Rotation, inter-cropping or associated with legumes (cowpea or groundnut).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (LOUGA, THIÈS, DIOURBEL, NORD KAOLACK, NORD FATICK)
 Isohyet range 300-600 mm/year

SORGHUM <i>Sorghum bicolor</i>	
Variety name:	Golobe (synonym: ISRA-S-618-1)
Local name:	—
Variety type:	Line
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 40 cm (seed disk of 8 holes)
Grain/flesh color:	Straw yellow
Planting/sowing time:	July: sow in wet ground after rainfall of at least 20 mm
Production system:	Rainfed
Days from planting to maturity:	85-90
Potential yield:	3.5 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Protein content 10.94% Carbohydrate content 73.17% Appreciated in bread making, pastry making, enriched flours; excellent aptitude for milling, and very appreciated in couscous

Other qualities: —

NUTRIENT RECOMMENDATIONS	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	2-5 t/ha manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15 or 15-10-10
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea, prilled
Application period:	2 doses: 50% at tillering and 50% at bolting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Basal application of phosphate every 3 years
Comment:	8 bags x 50 kg/ha



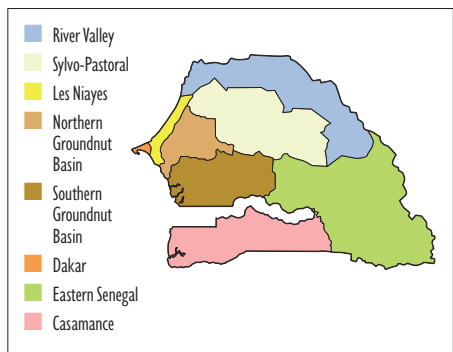
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic manure if possible.
Water management:	Zaï method, mulching, ridging.
Pest management:	Panicle disease and grain mold — Period of attack: flowering. Destruction of crop residues. Deep plowing. Optimal sowing dates. Removal of infected plants. Respect of the rotation. Striga — Period of attack: after emergence. Harvesting before flowering. Application of manure and mineral fertilizer. Weeding at 60 days after emergence.
Weed control:	Weeding/hoeing : <ul style="list-style-type: none"> Mechanical hoeing 15 after emergence with a sine hoe. Manual weeding 3-5 days after hoeing. Second weeding/hoeing 15 days after the first manual weeding. Third weeding/hoeing as needed, especially if weeds overgrown or striga appears. Removal of 3 plants 10-15 days after emergence. Harvesting: complete maturity (stalking, cutting ears, bundling, drying) to 16-20% grain moisture. <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun, and assure the grain contains ≤ 12% moisture. Ginning: after drying is complete; manual or mechanical. GAP and application of selective herbicides if possible.
Cropping system:	Rotation or associated with legumes (cowpea or groundnut).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (LOUGA, THIÈS, DIOURBEL, NORD KAOLACK, NORD FATICK)
 Isohyet range 300-600 mm/year

SORGHUM <i>Sorghum bicolor</i>	
Variety name:	Payenne (synonym: SRA-S-618-1)
Local name:	—
Variety type:	Line
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 40 cm (seed disk of 8 holes)
Grain/flesh color:	—
Planting/sowing time:	July: sow in wet ground after rainfall of at least 20 mm.
Production system:	Rainfed
Days from planting to maturity:	87-90
Potential yield:	3.8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	Protein content 11.42%; Carbohydrate 73.17%; Cellulose 2.62%; Phosphorus 394.42. Appreciated in bread making, pastry making, enriched flours; excellent aptitude for milling, very appreciated in couscous

Other qualities: —

NUTRIENT RECOMMENDATIONS	
69 N - 15 P ₂ O ₅ - 15 K ₂ O	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	2-5 t/ha manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15 or 15-10-10
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea, prilled
Application period:	2 doses: 50% at tillering and 50% at bolting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Basal application of phosphate every 3 years
Comment:	8 bags x 50 kg/ha



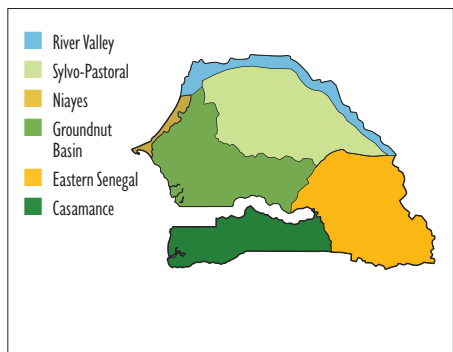
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic manure if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	Panicle disease and grain mold — Period of attack: flowering. Destruction of crop residues. Deep plowing. Optimal sowing dates. Removal of infected plants. Respect of the rotation. Striga — Period of attack: after emergence. Harvesting before flowering. Application of manure and mineral fertilizer. Weeding at 60 days after emergence.
Weed control:	Weeding/hoeing : <ul style="list-style-type: none"> Mechanical hoeing 15 after emergence with a sine hoe. Manual weeding 3-5 days after hoeing. Second weeding/hoeing 15 days after the first manual weeding. Third weeding/hoeing as needed, especially if weeds overgrown or striga appears. Removal of 3 plants 10-15 days after emergence. Harvesting: complete maturity (stalking, cutting ears, bundling, drying) to 16-20% grain moisture. <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun, and assure the grain contains ≤ 12% moisture. Ginning: after drying is complete; manual or mechanical. GAP and application of selective herbicides if possible.
Cropping system:	Rotation or associated with legumes (cowpea or groundnut).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

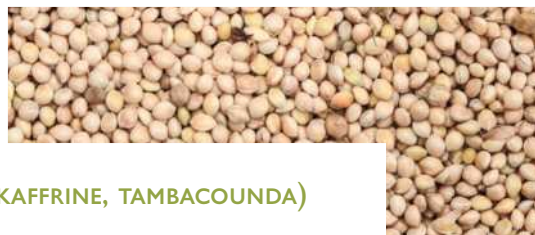


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (THIÈS, FATICK, KAOLACK, KAFFRINE, TAMBACOUNDA)
 Isohyet range 300-600 mm/year

SORGHUM <i>Sorghum bicolor</i>	
Variety name:	Faourou (syn. ISRA-S-621-B)
Local name:	—
Variety type:	Pure line
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 40 cm (seed disk of 8 holes)
Grain/flesh color:	White
Planting/sowing time:	July: sow in wet ground after rainfall of at least 20 mm.
Production system:	Rainfed
Days from planting to maturity:	105
Potential yield:	2.5-3 t/ha
Pest resistance:	—
Disease resistance:	Resistant to grain molds
Other stresses:	—
Nutritional quality:	Protein content 12.22%; Carbohydrate 72.83%; Cellulose 2.26%; Phosphorus 369.00
Other qualities:	No tannins

NUTRIENT RECOMMENDATIONS	
Application rate:	69 N - 15 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	2-5 t/ha manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15 or 15-10-10
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea, prilled
Application period:	50% at tillering and 50% at bolting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Basal application of phosphate every 3 years
Comment:	8 bags x 50 kg/ha



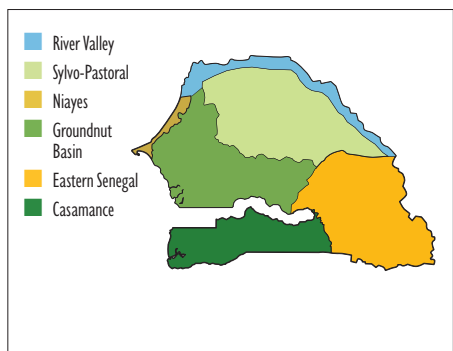
GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic manure if possible.
Water management:	Zaï method, mulching, ridging.
Pest management:	Panicle disease and grain mold — Period of attack: flowering. Destruction of crop residues. Deep plowing. Optimal sowing dates. Removal of infected plants. Respect of the rotation. Striga — Period of attack: after emergence. Harvesting before flowering. Application of manure and mineral fertilizer. Weeding at 60 days after emergence.
Weed control:	Weeding/hoeing : <ul style="list-style-type: none"> Mechanical hoeing 15 after emergence with a sine hoe. Manual weeding 3-5 days after hoeing. Second weeding/hoeing 15 days after the first manual weeding. Third weeding/hoeing as needed, especially if weeds overgrown or striga appears. Removal of 3 plants 10-15 days after emergence. Harvesting: complete maturity (stalking, cutting ears, bundling, drying) to 16-20% grain moisture. <ul style="list-style-type: none"> Drying: 72 hours minimum in the sun, and assure the grain contains ≤ 12% moisture. Ginning: after drying is complete; manual or mechanical. GAP and application of selective herbicides if possible.
Cropping system:	Rotation or associated with legumes (cowpea or groundnut).





WEST AFRICA AGRO-ECOLOGICAL ZONE
SEMI-ARID

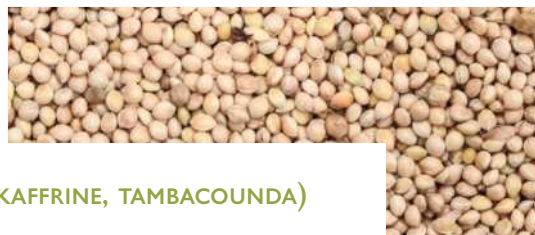


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SAHELIAN (THIÈS, FATICK, KAOLACK, KAFFRINE, TAMBACOUNDA)
 Isohyet range 300-600 mm/year

SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	Nganda (syn. ISRA-S-622-A)
Local name:	—
Variety type:	Pure line
Quantity of seed:	8-10 kg/ha
Spacing:	80 cm x 40 cm (seed disk of 8 holes)
Grain/flesh color:	White
Planting/sowing time:	July: sow in wet ground after rainfall of at least 20 mm.
Production system:	Rainfed
Days from planting to maturity:	110
Potential yield:	2-3 t/ha
Pest resistance:	—
Disease resistance:	Resistant to grain molds
Other stresses:	—
Nutritional quality:	Protein content 12.64%; Carbohydrate 71.80%; Cellulose 2.17%; Phosphorus 314.72
Other qualities:	No tannins

NUTRIENT RECOMMENDATIONS ↻	
	69 N - 15 P ₂ O ₅ - 15 K ₂ O

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	2-5 t/ha manure or compost.



FERTILIZER RECOMMENDATION ①	
Application rate:	100 kg/ha NPK 15-15-15 or 15-10-10
Application period:	15 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea, prilled
Application period:	50% at tillering and 50% at bolting
Comment:	2 bags x 50 kg/ha

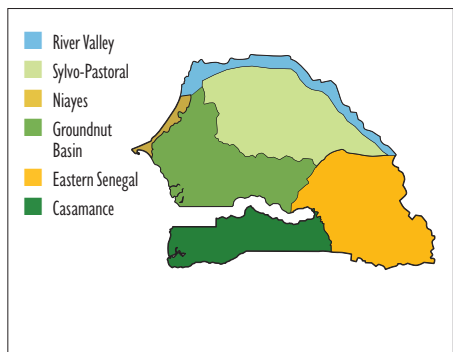
FERTILIZER RECOMMENDATION ③	
Application rate:	400 kg/ha Basal phosphate
Application period:	Basal application of phosphate every 3 years
Comment:	8 bags x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🔄

Soil and water conservation techniques:	Stone barriers, mulching, grass strips.
Method of fertilizer application:	Spreading or staking.
Amendments:	5 t/ha organic manure if possible.
Water management:	Zai method, mulching, ridging.
Pest management:	Panicle disease and grain mold — Period of attack: flowering. Destruction of crop residues. Deep plowing. Optimal sowing dates. Removal of infected plants. Respect of the rotation. Striga — Period of attack: after emergence. Harvesting before flowering. Application of manure and mineral fertilizer. Weeding at 60 days after emergence.
Weed control:	Weeding/hoeing : <ul style="list-style-type: none"> • Mechanical hoeing 15 after emergence with a sine hoe. • Manual weeding 3-5 days after hoeing. • Second weeding/hoeing 15 days after the first manual weeding. • Third weeding/hoeing as needed, especially if weeds overgrown or striga appears. • Removal of 3 plants 10-15 days after emergence. Harvesting: complete maturity (stalking, cutting ears, bundling, drying) to 16-20% grain moisture. <ul style="list-style-type: none"> • Drying: 72 hours minimum in the sun, and assure the grain contains ≤ 12% moisture. • Ginning: after drying is complete; manual or mechanical. • GAP and application of selective herbicides if possible.
Cropping system:	Rotation or associated with legumes (cowpea or groundnut).




WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID, SEMI-ARID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
GROUNDNUT BASINS, EASTERN SENEGAL, RIVER VALLEY (DIORBEL, TAMBACOUNDA, KÉDOUGOU, ST LOUIS, MATAM)

Isohyet range 400-1,200 mm/year

TOMATO *Solanum lycopersicum*


Variety name:	Mongol
Local name:	Tamaté
Variety type:	Hybrid
Quantity of seed:	0.2-0.3 kg/ha
Spacing:	50 cm x 50 cm
Grain/flesh color:	Bright red
Planting/sowing time:	October: Groundnut Basins, Eastern Senegal. October and July: River Valley Plants should be raised in a nursery and transplanted 4-6 weeks after germination (6-8 leaves stage).
Production system:	Winter and off season
Days from planting to maturity:	65
Potential yield:	35-45 t/ha
Pest resistance:	—
Disease resistance:	Yes: root knot nematode, Verticillium wilt, gray leaf spot, yellow leaf curl virus, yellow leaf curl virus, tobacco mosaic virus
Other stresses:	—
Nutritional quality:	—
Other qualities:	Very spicy and fragrant

NUTRIENT RECOMMENDATIONS

28 N - 28 P₂O₅ - 56 K₂O
ORGANIC FERTILIZER RECOMMENDATION


Application rate: 15-20 t/ha organic manure or compost.

FERTILIZER RECOMMENDATION


Application rate:	280 kg/ha NPK 10-10-20
Application period:	50% (soit 140 kg/ha) à 7 JAL et 50% à 40 JAL
Comment:	5.6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION


Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION


Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

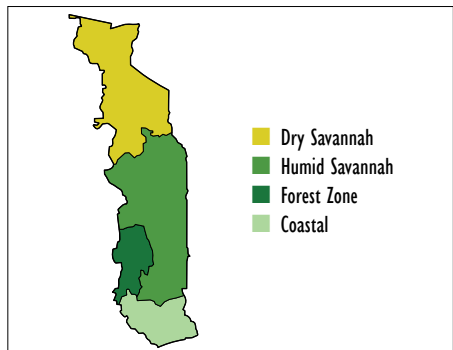

Soil and water conservation techniques:	Transplanting in pots with trays and mulching with straw to reduce evaporation.
Method of fertilizer application:	Spot fertilizing and then burying: make a small hole 5 cm deep at about 7-10 cm from the plant, put the fertilizer in it and cover the hole with soil.
Amendments:	15-20 t/ha of organic matter when possible.
Water management:	Drip system, watering in basins (maintain water).
Pest management:	Regular observations of the crop and treatment in case of attacks with an appropriate product.
Weed control:	Mechanical and chemical weeding (with herbicides).
Cropping system:	Rotation with other species than solanaceous.



TOGO



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DRY & HUMID SAVANNAH
Isohyet range 800-1000 mm/year (monomodal)

CASHEW *Anacardium occidentale* ✓

Variety name:	Clone I3
Local name:	
Variety type:	Clone
Quantity of seed:	1 kg/ha
Spacing:	10 m x 10 m (100 plants/ha)
Grain/flesh color:	Brown
Planting/sowing time:	May-June
Production system:	Rainfed
Days from planting to maturity:	3 5 years
Potential yield:	0.8 1.5 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	Drought
Nutritional quality:	The fruit (cashew apple) is rich in vitamin C and minerals
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻

97 N - 95 P₂O₅ - 95 K₂O

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: 5 t/ha manure or compost

FERTILIZER RECOMMENDATION ①

Application rate:	632 kg/ha (NPK 15-15-15)
Application period:	2 bags at planting, 2 bags in the 2 nd year, 2.5 bags in the 3 rd year, 3 bags in the 4 th year, and 3 bags in the 5 th year
Comment:	12.5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	
Application period:	
Comment:	

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

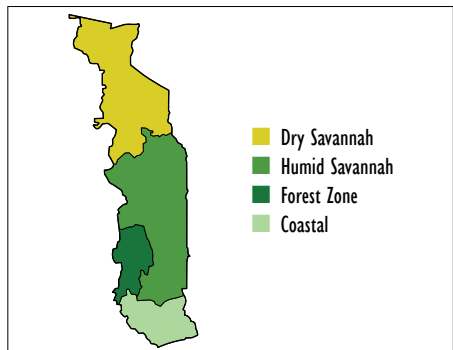
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Mulching, tillage
Method of fertilizer application:	Basal manure two weeks before transplanting. NPK and Urea incorporated in the soil in parallel or circle of 25 cm in the first year, 70 cm in years 2 and 3, and 100 cm in years 4 and 5
Amendments:	
Water management:	Drip irrigation for the first year in the dry season
Pest management:	At least 5-6 insecticide treatments
Weed control:	Three weeding and treatments on demand, with use of non-hazardous organic insecticide for bees and pollinator insects
Cropping system:	





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
HUMID SAVANNAH
 Isohyet range 800-1000 mm/year (monomodal)

COTTON *Gossypium hirsutum* ✓

Variety name:	STAM 129 A
Local name:	Détchi, Pissatou
Variety type:	OPV
Quantity of seed:	15 kg/ha (delinted); 45 kg/ha (with fiber)
Spacing:	0.75 between rows and 0.3 between holes (46,396 plants/ha)
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	10 June - 10 July
Production system:	Rainfed
Days from planting to maturity:	100-120
Potential yield:	Cottonseed (25-3t/ha) and fiber yield (42.5%)
Pest resistance:	
Disease resistance:	
Other stresses:	Drought and flood
Nutritional quality:	Seed rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS

41 N - 30 P₂O₅ - 27 K₂O +7,5 S +1,5 B

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 5-6 t/ha manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①

Application rate:	150 kg/ha (NPKSB 12-20-18+5S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	3 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	



GOOD AGRICULTURAL PRACTICES & MANAGEMENT

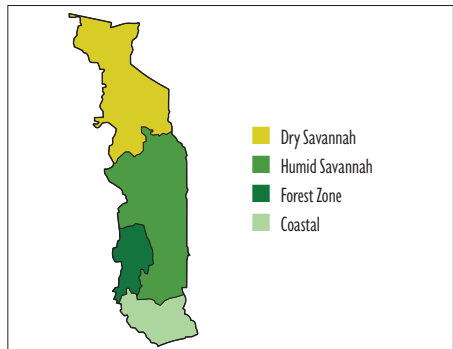
Soil and water conservation techniques:	Mulching, tillage
Method of fertilizer application:	Urea incorporated into the soil (of hill)
Amendments:	
Water management:	
Pest management:	At least 5-6 insecticide treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence)
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production)



COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Vitoco
Local name:	—
Variety type:	Line
Quantity of seed:	40 kg/ha
Spacing:	50 cm between rows, 20 cm between seed holes with 2 seeds
Grain/flesh color:	White
Planting/sowing time:	June 15-July 15: Dry and Wet Savannah. April 15-May 15: Coastal and Forest Zones
Production system:	Rainy season
Days from planting to maturity:	90-100
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to leaf diseases
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range >800 mm/year

NUTRIENT RECOMMENDATIONS ↻	
0 N - 13 P ₂ O ₅ - 0 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha NPK 15-15-15
Application period:	During plowing
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In pockets at 10 cm from the plant, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor the invasion and treat (insecticides) against pod borers, aphids, and bruchids.
Weed control:	GAP (mechanical weed control).
Cropping system:	Rotation (cereals, tubers).

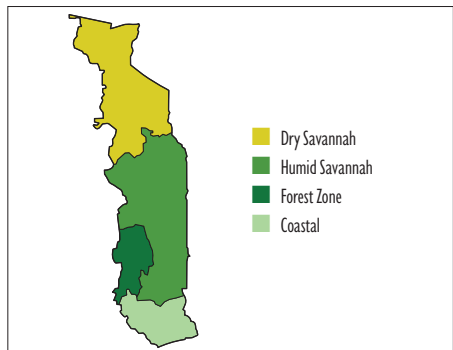




COWPEA <i>Vigna unguiculata</i> ✓	
Variety name:	Vita5
Local name:	—
Variety type:	Pure line
Quantity of seed:	40 kg/ha
Spacing:	50 cm between rows, 20 cm between seed holes with 2 seeds
Grain/flesh color:	White
Planting/sowing time:	June 15-July 15: Dry and Wet Savannah. April 15-May 15: Coastal and Forest Zones
Production system:	Rainy season
Days from planting to maturity:	70-90
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	Tolerant to leaf diseases
Other stresses:	—
Nutritional quality:	—
Other qualities:	—



WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range >800 mm/year

NUTRIENT RECOMMENDATIONS ↻	
0 N - 13 P ₂ O ₅ - 0 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	50 kg/ha NPK 15-15-15
Application period:	During plowing
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

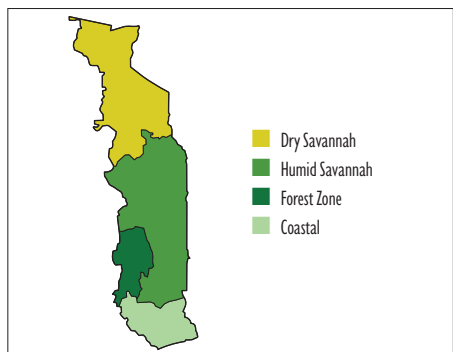


GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In pockets at 10 cm from the plant, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor the invasion and treat (insecticides) against pod borers, aphids, and bruchids.
Weed control:	GAP (mechanical weed control).
Cropping system:	Rotation (cereals, tubers).





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range >800 mm/year

GROUNDNUT *Arachis hypogaea* ✓

Variety name:	Samnut24
Local name:	ICIAR
Variety type:	Line
Quantity of seed:	50 kg/ha
Spacing:	50 cm between rows; 15 cm between hills, 2 plants per hill
Grain/flesh color:	Pink
Planting/sowing time:	15 June–15 July (Savannahs); 15 April–15 May (Littoral and Forest Zone)
Production system:	Rainy season
Days from planting to maturity:	85-90
Potential yield:	2.5 t/ha
Pest resistance:	—
Disease resistance:	Low
Other stresses:	Drought-tolerant
Nutritional quality:	Rich in oil
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

15 N - 15 P₂O₅ - 15 K₂O +S +B +Mn +Ca +Mg +Zn
 (for dry and humid savannah zones)

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: —



FERTILIZER RECOMMENDATION ①

Application rate:	50 kg/ha NPK 15-15-15
Application period:	Just before sowing (basal fertilizer)
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—



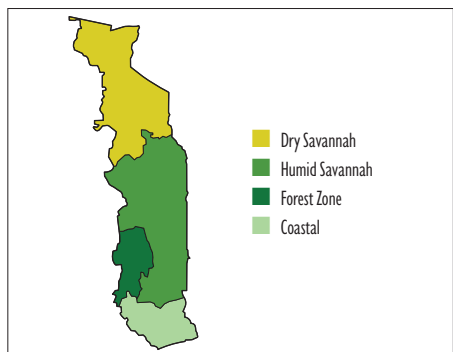
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough and harrow. If possible, choose light soil.
Method of fertilizer application:	Broadcast.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor for invasions by ladybugs and aphids, and treat as needed (IPM).
Weed control:	GAP (mechanical weeding) and ridging.
Cropping system:	Rotation (cereals, tubers).





WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
Isohyet range >800 mm/year

GROUNDNUT *Arachis hypogaea* ✓

Variety name:	TS 32-1
Local name:	—
Variety type:	Pure line
Quantity of seed:	60 kg/ha
Spacing:	50 cm between rows; 15 cm between hills, 1 plant per hill
Grain/flesh color:	Pink
Planting/sowing time:	15 June–15 July (Savannahs); 15 April–15 May (Littoral and Forest Zone)
Production system:	Rainy season
Days from planting to maturity:	90-100
Potential yield:	4 t/ha
Pest resistance:	—
Disease resistance:	Tolerant of cercosporia
Other stresses:	Drought-tolerant
Nutritional quality:	Rich in oil
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻

15 N - 15 P₂O₅ - 15 K₂O +S +B +Mn +Ca +Mg +Zn
(for dry and humid savannah zones)

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: —



FERTILIZER RECOMMENDATION ①

Application rate:	50 kg/ha NPK 15-15-15
Application period:	Just before sowing (basal fertilizer)
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	—
Application period:	—
Comment:	—

FERTILIZER RECOMMENDATION ③

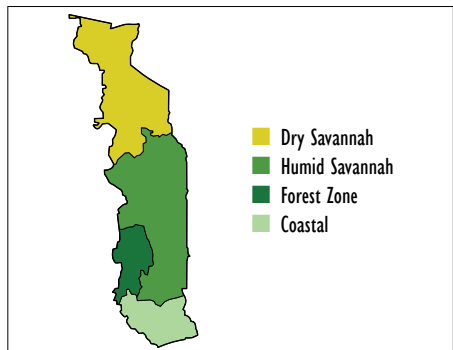
Application rate:	—
Application period:	—
Comment:	—





GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough and harrow. If possible, choose light soil.
Method of fertilizer application:	Broadcast.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor for invasions by ladybugs and aphids, and treat as needed (IPM).
Weed control:	GAP (mechanical weeding) and ridging.
Cropping system:	Rotation (cereals, tubers).






WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
FOREST, COASTAL (AGBELOUVE, YOTOKOPE, KPALIME, AGBODRAFO, ANEHO)
 Isohyet range 900-1200 mm/year


MAIZE <i>Zea mays</i> 	
Variety name:	Bondofa
Local name:	
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	80 cm between rows 40 cm between hills, 2 plants/hill 20 cm between hills, 1 plant/hill
Grain/flesh color:	White
Planting/sowing time:	15 March 15 April (Forest zone and littoral); 15 May 15 June (Dry Savannah zone)
Production system:	Rainfed
Days from planting to maturity:	90-100
Potential yield:	8-9 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	
Nutritional quality:	Quality protein maize
Other qualities:	

NUTRIENT RECOMMENDATIONS 
117 N - 59 P ₂ O ₅ - 51 K ₂ O +S +B +Mn +Ca +Mg +Zn


ORGANIC FERTILIZER RECOMMENDATION 
Application rate:

FERTILIZER RECOMMENDATION 	
Application rate:	200 kg/ha NPK 15-15-15 + 65 kg/ha TSP
Application period:	NPK at emergence (2 weeks after sowing)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 	
Application rate:	100 kg/ha Urea
Application period:	Urea 45-50 days after sowing
Comment:	2 bags x 50 kg/ha

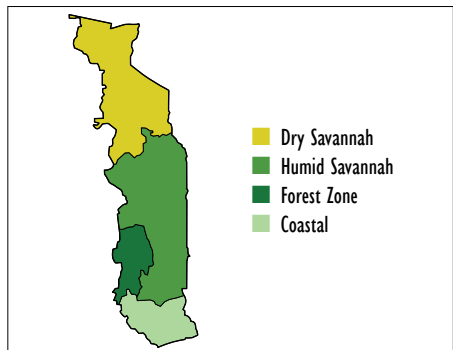
FERTILIZER RECOMMENDATION 	
Application rate:	50 kg/ha KCl
Application period:	KCl at emergence (2 weeks after sowing)
Comment:	1 bag x 50 kg/ha



GOOD AGRICULTURAL PRACTICES & MANAGEMENT 	
Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Punch, deep placement
Amendments:	
Water management:	Ridging
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cotton, legumes)



WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID + HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

DRY SAVANNAH, HUMID SAVANNAH (ADJENGRE, ANIE, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSE, DAPAONG, KANTE)

Isohyet range >800 mm/year

MAIZE *Zea mays* ✓

Variety name:	Komsaya
Local name:	
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	80 cm between rows 40 cm between hills, 2 plants/hill 20 cm between hills, 1 plant/hill
Grain/flesh color:	Yellow
Planting/sowing time:	15 May 15 June
Production system:	Rainfed
Days from planting to maturity:	90-100
Potential yield:	8-9 t/ha
Pest resistance:	
Disease resistance:	
Other stresses:	
Nutritional quality:	
Other qualities:	

NUTRIENT RECOMMENDATIONS ↻

76 N - 30 P₂O₅ - 30 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate:

FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 15-15-15 + 65 kg/ha TSP
Application period:	NPK at emergence (2 weeks after sowing)
Comment:	(4 bags x 50 kg/ha) + TSP

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	Urea 45-50 days after sowing
Comment:	2 bags x 50 kg/ha

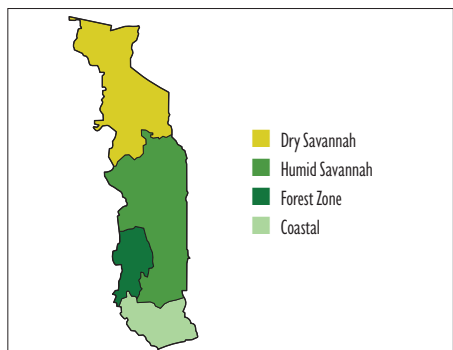
FERTILIZER RECOMMENDATION ③

Application rate:	
Application period:	
Comment:	

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Plough, harrow
Method of fertilizer application:	Punch, deep placement
Amendments:	
Water management:	Ridging
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (cotton, legumes)




WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DRY SAVANNAH, HUMID SAVANNAH (ADJENGRÉ, ANIÉ, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
 Isohyet range >800 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Komsaya
Local name:	—
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	80 cm between rows 40 cm between hills, at 2 plants/hill 20 cm between hills, at 1 plant/hill
Grain/flesh color:	Yellow
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	90-100
Potential yield:	8-9 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—

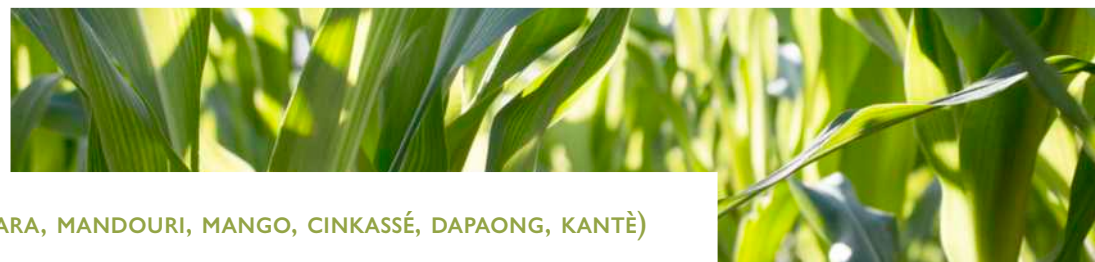


FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 +65 kg/ha TSP
Application period:	At emergence (2 weeks after sowing)
Comment:	4 bags x 50 kg/ha NPK 1.3 bags x 50 kg/ha TSP

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45-50 JAS
Comment:	2 bags x 50 kg/ha

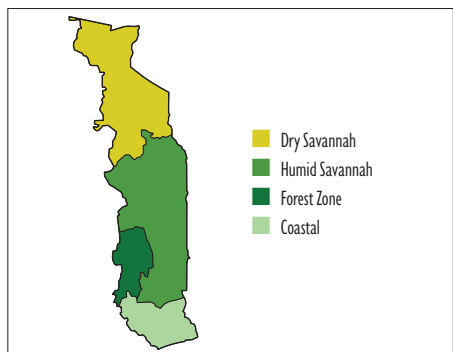
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IRM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation with cotton and legumes.





MAIZE <i>Zea mays</i> ✓	
Variety name:	Opeaburoo
Local name:	—
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	80 cm between rows 40 cm between 2 plants/hill 20 cm between 1 plant/hill
Grain/flesh color:	White
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	90-95
Potential yield:	8-10 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—


WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DRY SAVANNAH, HUMID SAVANNAH (ADJENGRÉ, ANIÉ, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
 Isohyet range >800 mm/year

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 +65 kg/ha TSP
Application period:	At emergence (2 weeks after sowing)
Comment:	4 bags x 50 kg/ha, 1.3 bags kg/ha TSP

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45-50 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

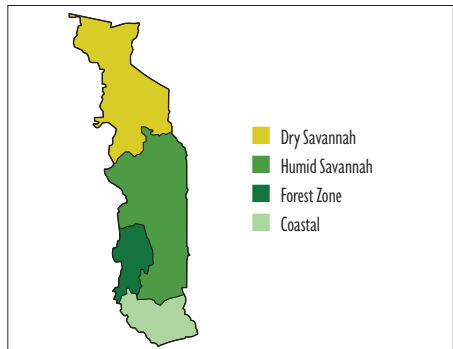
GOOD AGRICULTURAL PRACTICES & MANAGEMENT 🍷

Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation (cotton, legumes).





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

DRY SAVANNAH, HUMID SAVANNAH (ADJENGRÉ, ANIÉ, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
Isohyet range >800 mm/year

MAIZE <i>Zea mays</i> ✓	
Variety name:	Owanwa
Local name:	—
Variety type:	Hybrid
Quantity of seed:	20 kg/ha
Spacing:	80 cm between rows 40 cm between hills, at 2 plants/hill 20 cm between hills, at 1 plant/hill
Grain/flesh color:	Yellow
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	90-95
Potential yield:	8-9 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	—

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—

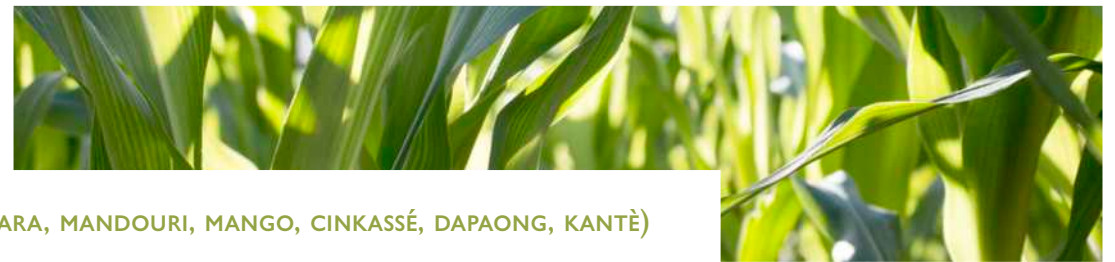


FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 +65 kg/ha TSP
Application period:	At emergence (2 weeks after sowing)
Comment:	4 bags x 50 kg/ha NPK 1.3 bags x 50 kg/ha TSP

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45-50 DAS
Comment:	2 bags x 50 kg/ha

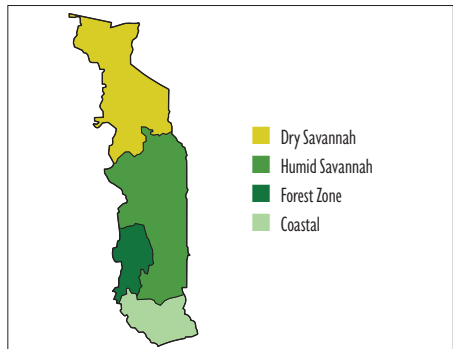
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IRM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation with cotton and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DRY SAVANNAH (MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
 Isohyet range 650-900 mm/year

MILLET <i>Pennisetum glaucum</i> ✓	
Variety name:	Gnari Sava
Local name:	—
Variety type:	OPV
Quantity of seed:	6 kg/ha
Spacing:	80 cm between rows, 40 cm between hills with 2 or 3 plants per hill
Grain/flesh color:	Red
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	75
Potential yield:	2 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	—
Nutritional quality:	—
Other qualities:	Suitable for local beer; not sensitive to day-length (non-photoperiodic)

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 and 65 kg/ha TSP
Application period:	NPK at emergence (2 weeks after seeding)
Comment:	4 bags x 50 kg/ha NPK 1.3 bags x 50 kg/ha TSP

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45-50 JAS
Comment:	2 bags x 50 kg/ha

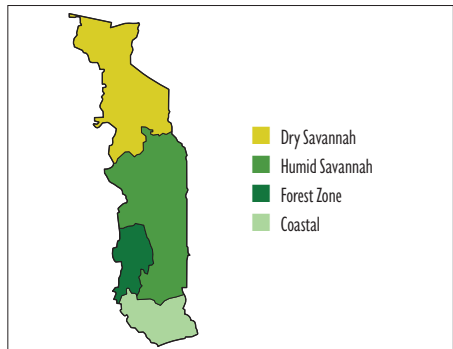
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IRM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation with cotton and legumes.





RICE <i>Oryza sativa</i>	
Variety name:	Nerica L14
Local name:	—
Variety type:	Line
Quantity of seed:	20 kg/ha for transplanting, 40 kg/ha direct seeding
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 July–15 August (rainfed)
Production system:	Lowland rainfed/irrigated
Days from planting to maturity:	115-120
Potential yield:	8 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Resistant to lodging
Nutritional quality:	—
Other qualities:	Aromatic, long grain


WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID

COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range >800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15
Application period:	At sowing or transplanting, or during the first 7 days after that
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	In 2 parts: 50 kg between 25-30 days, and 50kg between 55-60 days after sowing or transplanting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



NUTRIENT RECOMMENDATIONS	
84 N - 38 P ₂ O ₅ - 38 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, and/or biostimulants.



GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, mudding.
Method of fertilizer application:	Deep placement (FDP) in seed hill (direct seeding), broadcast.
Amendments:	Add organic manure if necessary.
Water management:	Basin, flooding and alternate drying, drainage.
Pest management:	Monitor the status of insect attacks and apply insecticides if needed.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides if needed.
Cropping system:	Rotation (sweet potato, potato, vegetable crops).



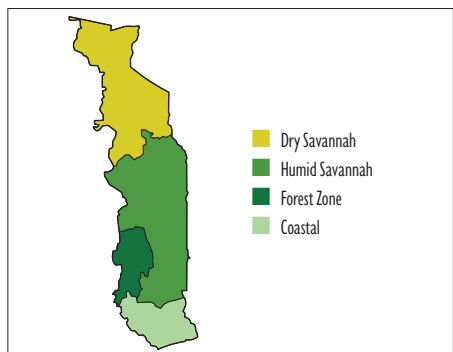


RICE <i>Oryza sativa</i>	
Variety name:	Orylux 1
Local name:	—
Variety type:	Pure line
Quantity of seed:	20 kg/ha for transplanting, 40 kg/ha direct seeding
Spacing:	20 cm x 20 cm
Grain/flesh color:	White
Planting/sowing time:	15 July–15 August (rainfed); February (irrigated)
Production system:	Lowland rainfed/irrigated
Days from planting to maturity:	115-120
Potential yield:	8 t/ha
Pest resistance:	—
Disease resistance:	Resistant to pyricularia
Other stresses:	Resistant to lodging
Nutritional quality:	—
Other qualities:	Aromatic


WEST AFRICA AGRO-ECOLOGICAL ZONE
ALL ZONES

NUTRIENT RECOMMENDATIONS	
84 N - 38 P ₂ O ₅ - 38 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION	
Application rate:	If possible, add organic manure, compost, and/or biostimulants.


COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
ALL ZONES
 Isohyet range >800 mm/year

FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15
Application period:	At sowing or transplanting, or during the first 7 days after that
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	50% between 25-30 days, and 50% between 55-60 days after sowing or transplanting
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—



GOOD AGRICULTURAL PRACTICES & MANAGEMENT	
Soil and water conservation techniques:	Ploughing, mudding.
Method of fertilizer application:	Deep placement (FDP) in seed hill (direct seeding), broadcast.
Amendments:	Add organic manure if necessary.
Water management:	Basin, flooding and alternate drying, drainage.
Pest management:	Monitor the status of insect attacks and apply insecticides if needed.
Weed control:	Good agricultural practices (mechanical weeding) and herbicides if needed.
Cropping system:	Rotation (sweet potato, potato, vegetable crops).

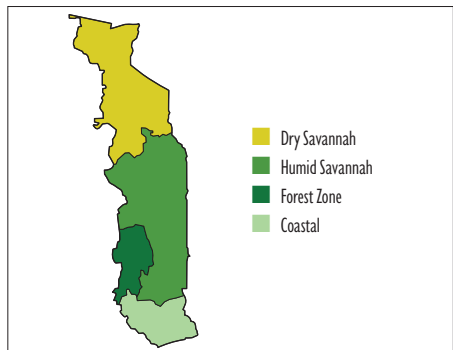




SORGHUM <i>Sorghum bicolor</i> ✓	
Variety name:	Sobatimi
Local name:	—
Variety type:	Line
Quantity of seed:	6 kg/ha
Spacing:	80 cm between rows, 40 cm between hills with 2 or 3 plants per hill
Grain/flesh color:	White
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	105-110
Potential yield:	6 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought after flowering
Nutritional quality:	—
Other qualities:	Flour suitable for making bread



WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

DRY SAVANNAH, HUMID SAVANNAH (ADJENGRÉ, ANIÉ, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
Isohyet range 650-1,200 mm/year

NUTRIENT RECOMMENDATIONS ↻	
76 N - 30 P ₂ O ₅ - 30 K ₂ O +S +B +Mn +Ca +Mg +Zn	

ORGANIC FERTILIZER RECOMMENDATION 🌿	
Application rate:	—



FERTILIZER RECOMMENDATION ①	
Application rate:	200 kg/ha NPK 15-15-15 and 65 kg/ha TSP
Application period:	NPK at emergence (2 weeks after seeding)
Comment:	4 bags x 50 kg/ha NPK 1.3 bags x 50 kg/ha TSP

FERTILIZER RECOMMENDATION ②	
Application rate:	100 kg/ha Urea
Application period:	45-50 JAS
Comment:	2 bags x 50 kg/ha

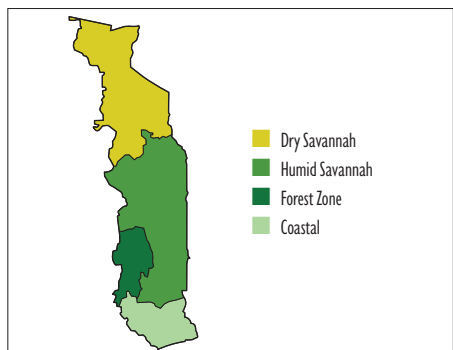
FERTILIZER RECOMMENDATION ③	
Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍	
Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IRM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation with cotton and legumes.





WEST AFRICA AGRO-ECOLOGICAL ZONE
HUMID, SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
DRY SAVANNAH, HUMID SAVANNAH (ADJENGRÉ, ANIÉ, BLITTA, SOTOUBOUA, KARA, MANDOURI, MANGO, CINKASSÉ, DAPAONG, KANTÈ)
Isohyet range 650-1,200 mm/year

SORGHUM *Sorghum bicolor* ✓

Variety name:	Sorvato 8
Local name:	—
Variety type:	Pure line
Quantity of seed:	6 kg/ha
Spacing:	80 cm between rows, 40 cm between hills with 2 or 3 plants per hill
Grain/flesh color:	Mottled white
Planting/sowing time:	15 May–15 June
Production system:	Rainy season
Days from planting to maturity:	110-120
Potential yield:	4 t/ha
Pest resistance:	—
Disease resistance:	—
Other stresses:	Drought after flowering
Nutritional quality:	—
Other qualities:	Flour suited for baking

NUTRIENT RECOMMENDATIONS ↻

76 N - 30 P₂O₅ - 30 K₂O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION 🌿

Application rate: —



FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha NPK 15-15-15 and 65 kg/ha TSP
Application period:	NPK at emergence (2 weeks after sowing)
Comment:	4 bags x 50 kg/ha NPK 1.3 bags x 50 kg/ha TSP

FERTILIZER RECOMMENDATION ②

Application rate:	100 kg/ha Urea
Application period:	45-50 DAS
Comment:	2 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	—
Application period:	—
Comment:	—

GOOD AGRICULTURAL PRACTICES & MANAGEMENT 👍

Soil and water conservation techniques:	Ploughing, harrowing.
Method of fertilizer application:	In seed hill, deep placement.
Amendments:	—
Water management:	Ridging.
Pest management:	Monitor fall armyworm invasion and apply pesticides (IPM).
Weed control:	GAP (mechanical and herbicide-based weed control).
Cropping system:	Rotation with cotton and legumes.



[FeedtheFuture.gov](https://www.feedthefuture.gov)



USAID
FROM THE AMERICAN PEOPLE

