I.
Product Knowledge

Topic 6b

Organic Fertilizers

FACT SHEET

I. Product Knowledge

Topic 6b: Organic Fertilizers

Why organic fertilizer?
Organic means that the nutrients in the fertilizer are purely from the remains, byproducts, or waste from a living organism, and are not treated with any type of chemicals. Organic fertilizers are produced via natural processes and have advantages and disadvantages:

Advantages	Disadvantages
• Improve structure of soil. • Retain soil moisture. • Release nitrogen slowly but consistently. • Enhance other nutrients in the soil for use by plants. • Do not burn plants (except for fresh cattle manure). • Do not leach easily. • In general cheaper because locally available. • The use of organic fertilizers cleans up the world's organic waste.	• Composition varies a lot. • Some manure and sewer sludge may be contaminated with pathogens. • Large volumes of fertilizer are needed for total nutrient requirements of crops. • Messy, strong odor. • Labor intensive. • Difficult to handle. • Sometimes more expensive on large-scale use than inorganic commercial fertilizers. • Some not immediately available for use by the plant. They need soil micro-life to break them down to a form that plants can use.

The most common types of organic fertilizers are:

Name	Remarks
Compost	Organic matter decomposed by the action of bacteria and other organisms over a period of time.
Manure	From poultry, cows, sheeps, or goats. Complete fertilizer (N+P+K)—nutrients may vary depending on the animal's diet. It is better to use as soil conditioner than fertilizer.
Green manure	Pruning waste and other mulching material.
Sewer sludge	Available in a dry granular form from sewage treatment plants. Not advisable for use on edible crops if not

	composted.
Fish meal	High in nitrogen and micronutrients. Strong odor.
Seaweed emulsion	Excellent source of nutrients, including micronutrients, but tends to be expensive.
Bone meal and blood meal	Derived from animal abattoir leftovers. Bone meal is high in phosphorus and calcium and has a small amount of nitrogen. Blood meal provides nitrogen.
Cotton or oil seed meal	Source of nitrogen.

The use of organic fertilizers

Organic fertilizers are used mainly by:

- Organic farms that will use only organic fertilizers.
- Other farm operations that use organic fertilizers as part of their total plant nutrient program. This means that they will use inorganic fertilizer together with organic fertilizer. The main role of organic fertilizer will be to improve the soil structure and support natural processes in the soil.
- Gardeners and nurseries.

INSTRUCTIONS

I. Product Knowledge

Topic 6b: Organic Fertilizers

Materials needed

- ☑ Flip-sheet board with flip-sheets
- ☑ Markers (4 black, 1 blue, 1 green, 1 red)
- ☑ Masking tape
- ☑ Colored cards (approximately 30)

Time needed: 45 minutes

Preparations:

- ☑ Flip-sheet with the heading *Organic Fertilizers*
- ☑ Flip-sheet with the definition: *Organic means that the nutrients in the fertilizer are purely from the remains, byproducts, or waste from a living organism.*
- ☑ Set of colored cards with words:
  - *organic fertilizer*
  - *non-organic fertilizer*
- ☑ Flip-sheet with the heading *Advantages* and a flip-sheet with the heading *Disadvantages*
- ☑ Plastic bags with samples of:
  - Manure
  - Compost
  - Soil with organic matter and earthworms
  - Chemical fertilizer

  Each bag should have a clear label with its content.

NOTE: Fertilizer is generally an unknown field for some agri-input dealers. It is recommended that trainers not go into too much detail on organic fertilizers. Participants can easily get confused with all of the different types. When the principle and use of fertilizers becomes a more known field, a more complete training on organic fertilizers will be more useful.

Set up

Attention: Ask participants if they know the difference between sugar and sweetener. They will have various answers. Hopefully, some will say that sugar is natural and sweetener is manufactured. Sweetener is an imitation of sugar.

Title: Tell participants the title while showing the flip-sheet with the title: *Organic fertilizers*.

Credibility: Explain your experience in the field of fertilizers.

Objectives: To explain the definition of organic fertilizers and give a short introduction to organic fertilizers.

Benefits: Farmers can combine the use of both organic and chemical fertilizer to improve soil fertility. Agro-dealers can advise farmers on using organic fertilizer to better manage soil fertility.

Direction: During this session, we will focus on the introduction to and definition of organic fertilizers. The discussion will not be too detailed. Organic pesticides will be discussed in another session.

Delivery

Explanation, **D**emonstration, **E**xercise, and **G**uidance:

1. Tell participants that there is a strong movement worldwide toward **organic food production**. Europe has a huge market for the supply of fruit and vegetables that have had no contact at all with chemical pesticides or chemical fertilizers. Even farmers who do not grow organic crops can use organic fertilizer to improve soil quality.
2. Display the flip-sheet with the definition of organic fertilizer: *Organic means that the nutrients in the fertilizer are purely from the remains, byproducts, or waste from a living organism.* Add that this means that **no chemical process** or ingredients are used. It comes purely from the earth or from living things.
3. Divide the participants into three groups. Hand each group a few colored cards and a black marker. Ask the groups to list **examples of organic fertilizer**. They should write their answers on the cards (one idea per card, in bold capital letters). Use one card for every example. Allow 5 minutes.
4. Put the colored cards *organic fertilizer* and *non-organic fertilizer* on the wall.
5. Ask group 1 to give you its first card. Show it to the group and read it aloud. Ask the question: *Is it organic or not?* Allow the groups to debate under your guidance. When a final decision is made and you agree, stick the colored card where it

belongs: *organic fertilizer* or *non-organic fertilizer*. Ask the group to explain. Repeat for groups 2 and 3 and until all cards are on the wall. By now, the participants should know the difference between organic and inorganic.

6. Paste two flip-sheets on the wall: one with the heading *Advantages* and one with the heading *Disadvantages.* Discuss with all participants the advantages and disadvantages of organic fertilizers. When someone mentions a valid point, write the answer in key words on the correct flip-sheet. Make sure that at least the following are mentioned:

Advantages	Disadvantages
• Improve structure of soil. • Retain soil moisture. • Release nitrogen slowly but consistently. • Enhance other nutrients in the soil for use by plants. • Do not burn plants (except for fresh cattle manure). • Do not leach easily. • In general cheaper because locally available. • The use of organic fertilizers cleans up the world's organic waste.	• Composition varies a lot. • Some manure and sewer sludge may be contaminated with pathogens. • Large volumes of fertilizer are needed for total nutrient requirements of crops. • Messy, strong odor. • Labor intensive. • Difficult to handle. • Sometimes more expensive on large-scale use than inorganic commercial fertilizers. • Some not immediately available for use by the plant. They need soil micro-life to break them down to a form that plants can use.

7. When all answers are listed, repeat all of the advantages and disadvantages.

8. Ask participants if anyone can mention some examples of organic fertilizer. Let them list a few and add remarks as mentioned below. Add organic fertilizers if necessary.

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Seaweed emulsion	Excellent source of nutrients, including

	micronutrients, but tends to be expensive.
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Cotton or oil seed meal	Source of nitrogen.

9. Show participants the plastic bags with the samples of the organic fertilizer. Pass them around to clearly show them to everyone.

Finish

Summary: Give a summary by repeating the definition of organic fertilizers and mention some examples of organic fertilizer. Repeat the advantages and disadvantages.

Questions: Ask if anyone has a question or comment.

Evaluation: Ask for the definition of an organic fertilizer. Ask for examples of organic fertilizer. Ask what the difference is between an organic fertilizer and a chemical fertilizer.

Next step: In this session, we learned only about organic fertilizers. In another session, we will also discuss organic pesticides.

Distribute the **fact sheet** to all participants.