

Article title	Nutrient release from decomposing leaf mulches of karité (<i>Vitellaria paradoxa</i>) and néré (<i>Parkia biglobosa</i>) under semi-arid conditions in Burkina Faso, West Africa
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Abstract	<p>Information on decomposition and nutrient release from leaf litter of trees in agroforestry parkland systems in Sub-Saharan Africa is scarce despite the significant role of these trees on soil fertility improvement and maintenance. Decomposition and nutrient release patterns from pruned leaves of the two most common species of parklands of the semi-arid zone of West Africa: <i>Vitellaria paradoxa</i> C.F. Gaertn (known locally as karité) and <i>Parkia biglobosa</i> (Jacq.) Benth. (known locally as néré), were investigated by a litter-tube study in Burkina Faso. Litter quality, methods of leaf exposure to the soil and combination with fertilizers were the factors studied. Leaves of néré had a higher nutrient content (C, N, P, Ca) and contained more ash and lignin than leaves of karité. Karité leaves had a greater content of K, cellulose and polyphenols. The pruned leaves of karité and néré showed two distinct decomposition patterns. Néré leaves decomposed more rapidly, with less than 32% of the initial weight remaining after the rainy season (4 months) while karité leaves decomposed more slowly with 43% of the leaf litter remaining after the rainy season. Addition of urea and compost did not significantly affect the rate of decomposition. Significant interaction was observed between species and method of leaf exposure for the first sampling date. Leaf litter of néré buried in soil gave the highest weight loss (34% of the initial mass in 1 month) compared with exposed leaf litter of néré and karité, and buried leaf litter of karité. Except for N, nutrient release patterns were similar for both species but the nutrient release rates were higher for néré leaves compared with karité leaves. N was immobilised in karité leaves most likely due to low N and high phenolic content. The rate of nutrient release from karité leaves followed the general trend K>P>N.</p>
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