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Soil fertility of cocoa trees (*Theobroma cacao* L.) under cassava (*Manihot esculenta* Crantz) shade in south-central Côte d'Ivoire.

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ABSTRACT
Objective: To protect young cocoa trees in climate change context marked by drought and lack of arable land, and diversify shade trees for cocoa, cassava was proposed as shade. To enhance this association, a study was carried out to determine the influence of shade types on soil fertility under cocoa trees.
Methodology and results: A physico-chemical analysis of soil samples from cocoa trees shaded by one line, two lines of cassava and one line of banana trees was carried out. In physical terms, results showed that soil texture is silty-clayey-sandy, whatever the type of shading. Organic matter levels were low in soils under cassava shade compared with banana shade. In chemical terms, phosphorus, potassium, soil organic carbon, the sum of exchangeable bases, magnesium and the saturation rate decreased in the various shades compared to plot without cocoa trees. Cation Exchange Capacity and the C/N ratio, despite decreasing in different types of shade, remain within cocoa-growing standards.
Conclusions and application of results: Finally, the study showed that cassava can be used as temporary shade for young cocoa plants in the same way as banana, which the shade recommended by the research. However, the cassava variety chosen must be considered and planted in the cocoa tree rows at a distance of 1.5 metres. This diversification of temporary shade for cocoa provides more choice to cocoa producers since cassava is quite available and hardier than banana.
Key words: banana, cassava, cocoa, fertility, shade.