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## Soil Fertility Status under Different Tree Cropping System in a Southwestern Zone of Nigeria

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### Abstract

Tree cropping has been known to bring about changes in edaphic component among other components of the ecosystem through their interactions with the soil and soil faunas. Premised on this, this study assessed the effects of sole cropping of teak and intercropping of cocoa and kola on the soil fertility status. The study was carried out using stratified-randomized sampling technique for the study plots in all the sampling sites. Three sampling sites consisting of four (4)-400 m<sup>2</sup> sampling plots each were established in which vegetation and some soil parameters were assessed. Results analysis showed that the synergistic interaction of leaves decomposition of cocoa and kola improved the organic matter content of the soil under the cocoa/kola site. Considerable improvement in soil fertility was enjoyed in the cocoa/kola site due to the large girth sizes and basal area of trees present in the cocoa/kola site while soil under the sole cropping of teak was impoverished. The degradation effects was due to the high rate of nutrient uptake of the teak, organic matter content was high in the forest site (9.12%) and cocoa/kola site (7.34) while the least was in the teak site (3.04%). A very strong correlation existed between organic matter content and some vegetation parameters.

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