OJF> Vol.2 No.2, April 2012

OPEN ACCESS

Impact of Different Spacings of Cooking Banana Intercropped with Rubber on Soil Fertility Attributes and Maturity Rate of the Trees in a Humid Forest Area of South Eastern Nigeria

PDF (Size:124KB) PP. 65-70 DOI: 10.4236/ojf.2012.22009

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ABSTRACT

The impact of four spacing of cooking banana (CB) within the immature rubber avenues on some soil fertility attributes, maturity rate of rubber trees and dry rubber content (DRC) during the initial six years after planting (YAP) were evaluated in a humid forest area of South Eastern Nigeria relative to sole rubber. The CB spacings within immature rubber avenues were 6.7 × 3.4 m; 4.0 × 2.0 m, 3.0 × 3.0 m and 2.0 × 2.0 m, while the sole rubber was at 6.7 × 3.4 m, all laid out in randomized complete block design with five replications. Quantities of soil organic C, extractable P, Ca, Mg and earthworm activities were significantly higher in the intercrops, with the highest value coming from the 4 × 2 m CB spaced plots. However a significantly higher value of K stock was observed in the sole rubber plot and declined as the CB spacing narrowed. While the highest proportion (>90%) of matured hevea tree at six YAP was observed in the 2 × 2 m CB spaced plots; the highest DRC of 1.7 t?ha^{-1}?yr^{-1} was obtained from CB 4 × 2 m treatment. Consequently, with some of the observed soil fertility attributes and DRC recorded, 4 × 2 m CB spacing seems to be a more suitable CB spacings within immature rubber avenues, especially in view of the levels of K in the 2 × 2 CB plots.

KEYWORDS

Cropping System; Nutrient Stock; Dry Rubber Content; Earth Warm

Cite this paper

Esekhade, T. & Okore, I. (2012). Impact of Different Spacings of Cooking Banana Intercropped with Rubber on Soil Fertility Attributes and Maturity Rate of the Trees in a Humid Forest Area of South Eastern Nigeria. *Open Journal of Forestry, 2,* 65-70. doi: 10.4236/ojf.2012.22009.

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