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Evaluation of coffee intercropped with rice and plantain at early stage of field establishment in Nigeria

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ABSTRACT

An intercropping experiment involving coffee (sole), coffee/rice, coffee/plantain and coffee/ rice/plantain was carried out between 2007 and 2008 at the Cocoa Research Institute of Nigeria (CRIN) Uhonmora Substation, Edo State situated in a derived Guinea Savanna agro-ecological zone of Nigeria. The experiment was a Randomized Complete Block Design (RCBD) with above mentioned treatment and replicated three times. The spacing used for coffee and plantain was 3 m apart respectively while rice was sown 30 cm apart. Morphological parameters such as plant height, stem girth, leaf area and canopy score were taken on coffee monthly while the survival count were taken after two months of field establishment. Yields of the component crops were also collected at maturity. Data collected were subjected to statistical analysis of variance and LSD used to separate the means that were significant. Result obtained showed 98% survival without any significant difference among the treatments. On vegetative growth, coffee/rice and coffee/plantain were significantly higher ($p < 0.05$) than coffee sole and coffee/rice/plantain in plant girth and leaf area but not significantly higher in all the months. Plant height however did not follow the same trend as height in coffee sole was slightly higher than coffee/rice. However, the difference was not significant. But coffee/plantain was still significantly higher ($P < 0.05$) than coffee/rice/plantain. The least was recorded in coffee/rice/plantain intercrop. Grain and bunch yields from rice and plantain respectively in the intercrops compare favourable well to what obtain from coffee sole. From the result obtained, it could be concluded that there was no deleterious effect on growth when rice and plantain were intercropped with coffee. Therefore coffee/rice and coffee/plantain intercropped with better performance could be recommended to coffee farmers in Nigeria rather than sole planting of coffee.

KEYWORDS

Evaluation; Coffee; Rice; Plantain; Intercrop

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