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SUITABILITY AND ECONOMIC VIABILITY OF INTERCROPPING IN RUBBER ON ACID SANDY SOIL OF SOUTHERN NIGERIA

T.U. Esekhade, I.K. Ugwa and E.O. Aigbekaen

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Results from field experiments on intercropping of cassava, cowpea and melon with rubber in sandy acidic (4.0 - 4.6 pH) soil at Akwete Abia State, Nigeria showed that there was adverse effect on the girth and height of rubber plants. The rate of girth increase for rubber was from 0.19 to 0.21 cm/month. The nitrogen contents of the soils increased after intercropping. The rubber + cassava combination gave the highest yield of 6.5 t/ha and a net present value of 2,431 naira and an internal rate of return of 29 per cent, followed by the rubber + cassava + cowpea + melon combination with a yield of 3.8 t/ha, a net present value of 816 naira and an internal rate of return of 29 per cent.

Key words : *Hevea brasiliensis*, Intercropping, Soil properties, Nigeria.

E.O. Aigbekaen (for correspondence), T.U. Esekhade and I.K. Ugwa, Rubber Research Institute of Nigeria, PMB 1049, Benin City, Nigeria.

INTRODUCTION

Rubber (*Hevea brasiliensis* Willd. ex Adr. de Juss. Arg. Muell.) is an ideal crop for the humid tropics and grows best as monoculture. The interspace is protected by the ground cover of leguminous plants before maturity and thereafter by shade tolerant cover plants. However, before canopy closure, during the initial two to three years after planting, a variety of intercrops can be grown, but the success of intercropping with rubber depends on several factors. The crops should be easy to grow and should have no detrimental effects on rubber. Fertile soils with adequate rainfall are best suited for intercropping of leguminous crops with rubber during the initial stages of two to three years (Tan *et al.*, 1969; Watson, 1983) and intercropping of leguminous crops has been found beneficial for the growth of rubber plants. Apart from suppressing weed growth and adding nitrogen, leguminous crops also have a beneficial effect on the texture, moisture content and temperature of the soil (Agboola and Fayemi, 1972; Agboola, 1974 ; Watson, 1983).

The greatest attraction of cassava intercropping is that it is easy to cultivate and is in high demand as food crop. There are indications that the growth of rubber is adversely affected by cassava. It competes with the crop for light, exhausts as well as erodes the soil, may increase the occurrence of the root disease caused by *Rigidoporus lignosus* and may attract rodents which damage the tap root of rubber plants (Rubber Research Institute of Malaya, 1972). Other reports however, could not confirm these observations (Pushparajah and Tan, 1970). With these as the background the present investigation was undertaken to study the effect of cassava (*Manihot esculenta* Crantz), cowpea (*Vigna unguiculata* (L)