

SOME SOILS OF NORTHERN BENDEL STATE OF NIGERIA AND THEIR POTENTIAL FOR GROWING RUBBER

Rubber is one of the cash crops grown in Bendel state, contributing about 80% of the rubber produced in Nigeria (Useni, 1986). However, it would appear that the vast soil resources of Northern Bendel state are not effectively utilised for rubber cultivation. Absence of diagnostic studies appears to be the major factor hindering the much desired expansion of rubber cultivation into the hitherto little exploited areas (Eshett and Omuetti, 1989).

Recent developments in the rubber industry, notably the policy of local sourcing of raw materials to meet the needs of home industries, necessitate both the expansion of existing farm holdings and the establishment of new ones. Soil based information is required for such agricultural planning. This study is, therefore, intended to evaluate some soils of northern Bendel state with particular emphasis on their potential for growing rubber.

The study was carried out in Afuze area in Owan L. G. A. of Bendel state. The area lies between 6°45' and 7°15'N and 5°45' and 6°15' E and comprises of low land with an elevation of about 200 m above sea level. The area receives an annual rainfall of 1000-1250 mm. The annual temperature regime is in the range of 26.7°C to 29.4°C. The area is affected by NE trade winds between the months of November and April. The effects of this warm dry wind is observed as Harmattan between November and February. The southerly monsoons affect

the area between May and October bringing rains. Though originally rainforest, human activities like bush burning and farming have changed it to a savannah. The present vegetation is a forest-savannah mosaic, which is a transition zone between the rainforest and Guinea savannah.

The dominant land use in the area is agriculture. The major crops grown include cassava, yam, plantain, melon and pigeon pea. Stands of cocoa, oil palm and rubber are also observed. The crop combinations include cassava/pigeon pea, cassava/melon and yam/melon/cassava. There is, also, sole cropping of cassava.

Representative profiles were dug for the purpose of this study following a soil survey of the area which was conducted at a scale of 1:25000 for the purpose of establishing a rubber plantation. The work covered an area of 500 ha. Mapping units were separated on the basis of observed differences in soil texture, colour, slope, depth and vegetation. Five mapping units were identified. The profiles were described and sampled according to the guidelines on soil profile description (FAO, 1977). The samples were dried and ground to pass through 2mm sieve. The fine earth fractions less than 2mm were analysed for some physical and chemical characteristics.

Particle size distribution was determined by the hydrometer method of Bouyoucos (1936) using sodium