

(11) Variety trial -- 8 varieties were compared.

## INTRODUCTION.

At the present time attempts are being made to improve all crops of importance with a view of obtaining high yields compatible with quality. The methods adopted in accomplishing this are selection, breeding of new varieties and betterment of the soil. A perusal of literature on the subject shows that cultivated yams *Dioscorca* sp. which are a common ground provision crop in the wet tropics, are no exception. This literature together with an account of the crop from all aspects has been fully discussed by Brown (1) in a concise and comprehensive paper and it is evident that selection in varieties and improvement of cultural methods are the immediate means towards higher yields and a more extensive cultivation of yams.

Field trials have been conducted in order to find the suitability of the numerous good varieties in existence with regard to locality and methods of cultivation. The Straits Settlement, the original home of the yam, has been the seat of studies into their Botany (2), while West Africa (6,7,8), the Philippines (4) and the West Indies (1,5 & 9) have contributed to improvement in cultivation. Rotations, which include a Yam crop are undergoing trial in Nigeria (1), and it has already been found out that staking of the vines gives a bigger return than when they are allowed to trail over the ground (8 & 9).

The facts that this crop is so commonly grown by the peasant in the tropics, its remarkable freedom from diseases and pests, its high yields and palatability justify further studies in its cultivation.

Field experiments in manuring, time of planting and mulching were laid out on the I.C.T.A. Estate in 1930-31 by Brown (1). These combined with staking and spacing tests were repeated on more accurate lines in 1931-32. They were four in number, viz:-

(1) To test staking with bamboo poles against maize inter-planted at different spacings.

Expt. I(ii) Variety trial - 8 varieties were compared.

COMB(ii) Comparison of different organic manures at different spacings.

(iv) To compare two different periods of planting, early and late, and to test mulching with early planting.

This report deals with (iii) and (iv) only.

These experiments came under the observation of the writer in October 1931 and were harvested under his supervision in December 1931 and February 1932, when a careful record of the yields were made. The Lisbon Yam was the variety used in the 3 cultural experiments.

A field trial on the I.C.T.A estate (1) in 1930-31 gave results contrary to the supposition that Organic matter is beneficial; they signified that dressings of trash decreased the yield in comparison with rows or banks devoid of Organic manure, which is explained by the fact that the season in question was so dry that the trash did not decompose and thus insulated the seed set from the subsoil water supply with consequent hindrance of germination.

In support of the supposed benefit conferred by Organic matter it was shown in Porto Rico (3) that stable manure worked deeply into the banks of the ridges at the rate of 10 tons per acre increased the yield over the unmanured plots by 12%, while an application of 20 tons per acre resulted in the vines growing at the expense of the tubers with a consequent lower yield than the control. Obviously the organic matter in this experiment had a marked fertilizing effect.

The application of artificial manures has also been the subject of investigation in Porto Rico (5) where they were tried on different varieties of Yams over a period of four years. A mixture having a basic formula of 50% N, 20% P, and 30% K was used, which was applied at the rate of 3,000 lbs. per acre in shallow furrows on top the banks. This complete dressing gave an increase of 50% in yield over control while dressings with one of the 3 elements missing gave no increase over control.