

INTRODUCTION

Rice and maize are probably the two most important grain crops in the world. Between them they supply the carbohydrate requirement of the bulk of the world's population.

Roughly 60% of the world's maize crop is produced in the Corn Belt of the U.S.A. and the reasons for this may be briefly as follows. Each species of plant has a set of conditions optimum for its growth and reproduction and it seems that in the Corn Belt these conditions are fulfilled. It is said that maize is not exacting in its requirements as regards soil and water as long as the soil is well drained and there is an even distribution of rain over the growing season. From the writer's limited experience it would appear that good drainage is of paramount importance especially in the humid tropics. Further in the U.S.A. the standard of husbandry is probably as high as that in any region in which maize is grown and maize responds to good husbandry.

In the preceding paragraph "optimum conditions" have been mentioned. It is always difficult to define optimum conditions but judging from the literature, providing the soil is well drained and the management good, temperature and rainfall appear to be the governing factors. Davies (1942) gives the optimum temperature for maize as between 75°F and 85°F. Outside this margin decreases in yield occur owing to extremes of temperature. Rainfall is also important and the lower limit is 10" of rain per annum as long as this is well distributed throughout the growing season. However in the Corn Belt part of the beneficial effect of rainfall appears to be due to the associated decrease in temperature. Jenny (1930), in an attempt to correlate maize yields with climatic factors, put forward the idea that moving from North to South through the Corn Belt

an increase in average yield is experienced until a maximum is encountered in the region of Iowa. Thereafter the yield decreases. The increase he attributes to increasing temperature, the decrease to the decreasing nitrogen content of the soil as the temperature increases further. Thus in spite of the fact that maize can be grown over a wide range of latitudes (a dwarf variety has been grown at Fort Simons in Canada just south of the Arctic Circle) there are optimum conditions for its growth.

In Trinidad it would seem that these conditions are only fulfilled in part and as a result maize is a minor crop. Such maize as is grown provides green corn for the local market and seed maize is imported (Pound 1940), a fact which caused some embarrassment at the beginning of the war. Rice is the main cereal produced in Trinidad and this only partly fulfills local requirements. Probably the climate and soil are more suited to rice than any other cereal. In fact maize is rarely seen except on cleared forest land as a first crop.

If maize could be grown profitably in Trinidad it would serve as an additional source of human and animal food. Maize has the added attraction that it is a crop giving a very high yield of human food per unit input of labour.

This experiment is one of a series which have been run at I.C.T.A. to find out the best methods of growing maize under Trinidad conditions. Although in this experiment the sowing dates were somewhat atypical it was hoped that some light would be shown on the manuring of maize. At the same time it was decided to run several microplot experiments during the growing period of the main experiment in the hope that further light would be thrown on the manuring of maize. It was later decided to extend the microplot experiments after the harvesting of the main experiment in the hope of elucidating the problem of manuring under different seasonal conditions because it was

felt that the most important time in the growth of the maize crop is the first 4 - 6 weeks.