

S U M M A R Y

The main aims of the study were:-

(a) Investigations into the response of maize to ploughing, disc harrowing, rotary hoeing and subsoiling; and of rice to ploughing, ploughing and puddling, and rotary hoeing.

(b) The collection of soil physical data to interpret yield differences.

A gravelly phase of St. Augustine Loam was used for maize; and a fine sandy phase of River Estate loam for maize and rice. Five experiments were conducted on maize and one on rice. The history, description and results of the experiments are given. The methods used in the soil physical studies and the results are presented. The general discussion includes all results and a comprehensive literature survey.

The following are the conclusions.

(1) Subsoiling gave definite increases in yield on both soil types, though on St. Augustine Loam, the effect is lessened in the absence of heavy rainfall.

(2) Percolation rates are increased by subsoiling; and this leads apparently to enhanced yields and alleviation of water logging.

(3) On River Estate Loam, ploughing gave superior yields. On St. Augustine Loam choice of cultivation depends on costs rather than yield.

(4) Percolation rates are hardly affected by main treatments.

(5) There was no correlation of maize yield with percolation rates.

(6) For rice significant differences were not established between ploughing, ploughing and puddling and rotary hoeing; though there are strong trends in favour of the last^{two}/over the first.