

## INTRODUCTION

There is no doubt that the basis of a good crop lies in obtaining the best possible stand of plants in the field. This, in the case of sugar cane which is vegetatively propagated and in which the writer for the purpose of this thesis is particularly interested, means obtaining the best possible germination of the cuttings. Good germination, with the ultimate result of better yields, though influenced by factors inherent to the crop, can be achieved only by experimentation and by the application of improved planting techniques suited to the environmental conditions concerned.

In cane growing, as in most other things, each country has its peculiarities. Some are due to climatic or soil exigencies, others to established customs and practices. But sugar cane is perhaps agriculturally speaking, one of the most thoroughly explored crops in the tropics. Indeed, researches in the various aspects of sugar cane agriculture have been so far advanced that the growing of this crop is rapidly becoming a science. Planting techniques have been investigated in most countries where the crop is grown commercially, but as conditions - climate, soils, social, economic and so on - under which the crop is grown differ so widely, many techniques found to be beneficial in one area may be of little use, if not harmful, in another.

In the West Indies the sugar cane industry has been the basis of the agricultural economy for nearly three centuries, but little investigational work was done until relatively recently - 1903 onwards - when a series of violent crises threatened the survival of the crop. From then on large improvements were made chiefly through the amalgamation of estates, the use of new and better varieties and improved cultural practices. Yet the techniques used in planting are quite variable and in many cases based on tradition.

For instance there is little agreement on a suitable depth of planting, spacing, and the best type of planting material required for optimum stand and highest yield.

This thesis is an account of some investigations on the planting techniques of sugar cane to determine whether any improvement on local practices, leading to better germination, tillering and yield, can be obtained; and also whether this improvement (in germination especially) can be used to effect an economy in planting material. After reviewing previous work done on the aspects to be investigated, an account of the investigations attempted and the results obtained, is given. This is followed by a general discussion of all the results and the conclusions drawn from them.