- INTRODUCTORY -

INCLUDING OBJECT OF THE EXPERIMENT.

Previous experiments on tomatoes at the College have been designed with the object of discovering the correct cultivation for this crop in Trinidad with the view of establishing an export trade with other countries.

Information sought for concerns manuring, spacing, staking, varieties, cold-storage behaviour and the general cultural practice consequent on the production of satisfactory crops for comparative purposes.

The present experiment concerns the manurial requirements of the crop and incorporates information obtained in previous experiments with regard to the cultural practice. Manures may be applied in the forms of organic or artificial manure. A survey of the literature pertinent to the manurial requirements of tomatoes reveals great diversity of opinion. This may be attributed to experiments being carried out under widely different soil conditions, and under different climatic conditions. It is considered, for example, that the effect of potassium is to some extent similar to long periods of intense sunlight so that greater amounts of potassic fertilizers should be applied if the season is dull and wet than during a fine sunny season. Similarly nitrogen would be reduced in the first instance, and increased in the second. Thus, to some extent the manurial requirements of the crop vary according to the prevailing climatic conditions. However, there seems to be general agreement that fairly large dressings of organic manures are desirable, and further that

application of artificial manures will be beneficial in the presence of organic manures.

In order to determine the optimum dressings of artificial manures, the correct proportions and quantities of the elements to be used must be obtained. To elucidate these points directly it would be necessary to carry out numerous experiments using the process of trial and error. The problem has been investigated in the College experiments from a different basis. These experiments have been based on the determination of the fundamental effects of the artificial manures alone and in combination, the constituent elements being nitrogen, phosphorus and potassium. Thus, if the fundamental effects were known for a particular set of soil and climatic conditions estimates could be prepared of the optimum dressings necessary under other soil and climatic conditions. During the season 1932-33 Wight attempted this determination by comparing the effects of dressings containing one constituent with control plots which receive no dressing of artificial manure. The results on analysis were not conclusive. The following season combinations of two constituents were in each case compared with control plots receiving dressings containing the three constituents, and again the results of the experiment on statistical analysis showed no significant difference in yield. This year the experiment has been designed to cover both types of comparison.