

INTRODUCTION

One of the general objects of The Agronomic Research Programme of the Regional Research Centre of the British Caribbean is to ascertain the nutrient status of the chief agricultural soils of the region, and to learn how to modify them to ensure continuing good growth and fruitfulness of the main cash and subsistence crops. One of the more pressing agronomic needs is to improve the cultivation of subsistence crops and vegetables throughout the area. [Coulter and Twyford (1960)].

Fundamental information on the nutrient requirements of the common food crops would prove very valuable in suggesting those crops suited to specific soils, and the manurial treatments that might be most profitably studied in field trials. By excluding unprofitable treatments, it would be possible to reduce the number of field trials necessary to establish the optimum manuring for any crop. To meet this need, a series of sand culture experiments is planned at the Imperial College.

The most important food crops of the region are: sweet potatoes, rice, dasheen, yams, cassava, black eye peas, and pigeon peas. A survey of the literature showed that of these only the sweet potato and rice have been adequately studied in respect of their nutrition. Of the others, yams require the most urgent investigation due to their more exacting soil requirements.

Leonard et al (1948) have shown that with the sweet potato, shoot growth is a poor, and even misleading, indicator of storage tissue growth, and it seems that in nutritional experiments with root crops it is essential to grow the plant through to maturity. For this reason, the study of yams, cassava, or dasheen was obviated by the time available.

The pigeon pea was finally selected. This study investigated its requirements for the six major nutrients: nitrogen, phosphorus, potassium, calcium, magnesium and sulphur. The plants were grown in sand culture in pots.