

GENERAL INTRODUCTION

Within recent years considerable emphasis is being given by Governments to the importance of food crops. This is not surprising, for with the ever increasing population, locally grown food crops for the local market are as vital as the cash crops for the export market in raising the standard of living of the people. Indeed, if the present production of food crops is not increased, it would be very difficult even to maintain the existing standard of living. This situation is of greater importance in the tropics, where in some areas, the standard of living barely surpasses subsistence levels.

In the West Indies, one of the primary food crops of the people is the root crop. It is somewhat unfortunate therefore, that the majority of these root crops are seasonal. Furthermore, the storage of these crops is often difficult and of a short term. The availability of a food crop may thus be limited to the time around harvest and at other times of the year little or none at all is available.

The chief root crop in many of the West Indian islands is the Lisbon Yam (Dioscorea alata L.). This species provides the staple food for other peoples in the tropics especially those in parts of West Africa and in the Pacific Islands.

The Lisbon variety is a high yielding crop, free from serious pests and diseases. It is of such importance that numerous investigations have been made in the past, in an effort to increase the yield and improve the storage.

It is however, one of those crops in which periods of great surplus around harvest time alternate with periods of shortage during the growing time. The fundamental problem therefore, is to improve the availability of this product so that it

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can be obtained throughout the year.

This may be achieved in two ways. Firstly, the crop might be planted and grown at different times throughout the year, the yams being harvested at several times during the year. To accomplish this, some means of inducing sprouting in the tubers during the dormancy period, will be necessary.

The second way would be to prolong the storage time. This would be the exact opposite to the first way, as some means of inhibiting sprout development would be needed.

The problems associated with both of these methods, i.e. the breaking of dormancy in the first case and the inhibition of bud development in the other, form the basis of this thesis.

around 1 lb. The tail portion of the yam tuber is also used as setts when there is a shortage of planting material. It is a very common practice for farmers to consume the bottom portions of the yam tubers and save the head portions for planting.

As the rainy season draws to a close around the months of December and January, the yam comes into maturity. The vines gradually change to a yellow brown colour and eventually dry up. This drying up of the yam vine is taken as the criterion for the harvesting time of the tubers. Jones (21) states that the yam tuber is "unripe" if harvested before the yam vine dies.

Freshly harvested yam tubers, when cut up into setts and planted into the ground will not germinate. Germination will not take place until May even under the most favourable germinating conditions. The yam tuber therefore, requires a dormancy period of 4-5 months before any germination will take place. At the end of this dormancy or rest period, the tubers produce shoots readily, whether they are in the ground or in the store room.

Thus, there can only be one crop of yam each year.