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CULTIVATION OF CASSAVA (*Manihot esculenta* Crantz)

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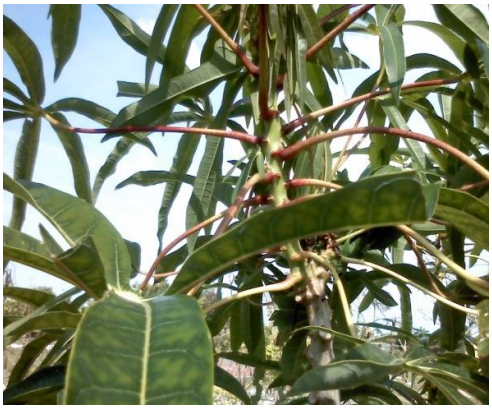

Introduction

The cassava (*Manihot esculenta* Crantz) is cultivated mainly in the tropic and sub-tropic regions of the world, over a wide range of environmental and soil conditions. It is very tolerant of drought and heat stress and produces well on marginal soils. It is an important dietary staple in many countries within the tropical regions of the world, where it provides food for more than 800 million people (FAO, 2007). Cassava is a versatile crop and can be processed into a wide range of products such as starch, flour, tapioca, beverages and cassava chips for animal feed. Cassava is also gaining prominence as a potential carbohydrate source for ethanol production.

Traditionally, cassava has been grown by farmers throughout the Bahama Islands and has been of particular importance to small farmers of the central and southeastern islands, where it is still cultivated. It is a crop that is generally grown on marginal lands with a minimum of agricultural inputs. Once established, the cassava crop is given little attention, but still is able to tolerate weed competition, as well as insect pests and diseases. The potential exists for improving the productivity of cassava through better agronomic practices, superior varieties and pest and disease management.

a **b** **c**

Freshly harvested roots of three cassava varieties: (a) 'Blue Mountain', (b) 'Cuban White Stick', (c) 'John LaMotte'.

Cassava varieties are generally distinguished from each other by their morphological characteristics which include leaf, stem and tuber colour, leaf shape and number of storage roots per plant. The plant produces all year round and can be harvested over an extended period of time.

Soil Preparation

Cassava is not a demanding plant and will grow on a wide range of soil types. However, under dry conditions and poor soils the concentration of toxic hydrogen cyanide within the roots is higher. Mounds or ridges are constructed, as they encourage root development. Soils should be well drained and not waterlogged. Land that has been previously cultivated will need to be disced, followed by ridging or hilling. The proper preparation of the soil and the use of good quality planting material are two important factors in achieving a successful production.

Planting
The mature stems of recently harvested cassava plants are cut into lengths of approximately ten inches, each length containing between ten and twelve nodes. The stem cuttings are planted on mounds or ridges in a vertical position on top of the mound or ridge. Planting distance is approximately three feet between plants and three feet between ridges. The stems should be planted as soon as possible, but they can be stored in a cool, shaded place for up to three months.

Water and Fertiliser
Application of fertiliser should be done before six weeks to get a maximum vegetative growth of the cassava crop. Fertiliser should be applied after two weeks and top dressing at six weeks after planting. Locally available fertilisers, such as 4-9-6 should be adequate. Fertilisers to be used, according to the percentages of nitrogen, phosphorus and potassium (N–P–K) are: 4-9-6, 8-18-8, or 10-20-20. Organic manures can be used in split applications to encourage canopy development.

Weed Control
To protect the crop from weeds the field must be weeded at least twice: three to four weeks after planting, then again after about two months. By this time a closed canopy should have developed to shade out weeds and inhibit their growth. Routine weeding and hoeing should be done as needed to take care of weeds within the plot.

Pests and Diseases
The cassava is plagued by several insect pests that can cause serious economic damage or yield losses if not controlled. These include hornworms, scale insects, mealybugs, stem borers and whiteflies. Commercial insecticides can be applied for effective control. Homemade pesticide remedies, such as a cup of vegetable oil in a gallon of water, can be used to suffocate small insects, insect larvae and eggs.

The cassava is susceptible to a wide variety of diseases caused by bacteria, fungi and viruses. Since it is grown primarily as a subsistence crop, chemical control of these diseases is not widely practised. In general, diseases are not a serious problem in cassava.

Harvesting
Cassava is usually not harvested until at least eight months after planting. To harvest, the stem is cut, leaving a stub as a handle to pull the cassava roots out of the ground. Harvested roots are stored in a shaded place, but deteriorate rapidly. Freshly harvested cassava roots can be stored for long periods using a simple procedure that prevents the rapid deterioration that takes place upon exposure of the peeled root to the natural environment. These few steps can be followed to preserve the cassava roots and add value to this staple food product.

1 2 3

The harvested cassava roots are chopped into small useable chunks (Fig. 1). The roots are then peeled and washed (Fig. 2). The cassava chunks are then stored in plastic bags and placed in the freezer until ready for use. (Fig. 3).

Resources
FAO (Food and Agriculture Organization of the United Nations) Yearbook, (2007): www.fao.org.