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## GROWING MESPLES (SAPODILLAS)

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### INTRODUCTION

Of all the native tropical fruits, few are as adapted to local climatic and soil conditions as the mesple, also known as sapodilla. The mesple originated in Southern Mexico and Central America but is now grown in many areas of the Tropics including the Virgin Islands. It belongs to the botanical family Sapotaceae, which includes other known fruits as the Star Apple (caimito), Mamey Sapote, and the canistel (egg fruit). Scattered local seedling trees can be found growing in different locations of the Virgin Islands under little or no care. This beautiful tree, in addition to bearing a sweet pleasant edible fruit, can be used as an ornamental, requiring little pruning and care.

### DESCRIPTION

The mesple is a medium to large slow-growing evergreen tree with dense spreading canopy (Fig. 1.) The bark contains a milky latex known as chicle, which was for many years the principle ingredient of chewing gum. The leaves are smooth, shiny and about 2 to 5 inches long. The small white flowers are borne singly on short pedicels in the axils of the leaves. Fruit from different seedling trees are variable in shape and size. They may be round, oval or conical and vary from 2 to 4 inches in diameter. The skin is thin, brown and scurfy, flesh light brown, with smooth to granular texture. The flesh of the better types, when thoroughly ripe, is soft and slightly fragrant with a very sweet rich flavor. The hard, black, shiny, flattened seeds, about 3/4 inch long, vary from none to 12 and separate readily from the flesh.

### CULTIVARS

An old USDA mesple orchard at the CVI Agricultural Experiment Station, St. Croix, contains several cultivars which have endured a number of years with little or no attention. Large fruited cultivars include Prolific, Russell and Morning Star, a local selection. These are heavy year-round bearers with sweet high quality fruit. Other local selections are Mary\*s Fancy, Blackwood and Boetzberg. Introduced cultivars include Adelaide and several selections from Jamaica, of which J-10 appears to be the best.

### SOIL AND CLIMATE

Mesple grows best on a well-drained fertile soil but is well

adapted to many soil types, including soils containing caliche or calcium carbonate (pH 7-8) as found in many parts of the Virgin Islands. The plant thrives in a lowland tropical climate. It tolerates dry conditions remarkably well and is very resistant to breakage and uprooting by strong winds. Climate conditions in the Virgin Islands are therefore suitable for good production.

### PROPAGATION

The mesple is most commonly propagated by seed. However, because seedling trees produce fruit only after 7-10 years and are often inferior in fruit quality and productivity, it is desirable to propagate superior selections vegetatively. Veneer grafting has been found to be the best method of propagation, but shield budding can also be used. The abundant flow of latex may cause considerable difficulty in grafting, making it necessary to work fast to prevent the latex from coagulating around the wound. Local mesple seedlings should be used as stock material since these seedlings are better adapted to our soil conditions. Some success has been reported with air layering, but this method is slow (3 to 5 months) in rooting. (See Factsheets Nos. 12, 13, 14, 15.)

### PLANTING

In the Virgin Islands it is preferable to plant at the beginning of the rainy season, in September, so trees will become established before the dry season. Trees can be planted anytime of the year if irrigation water is available. The use of well-rotted compost or manure mixed with the soil in a planting hole prepared large enough to accommodate root development is recommended especially for the clay loam soils generally found in the Virgin Islands. Maintaining a heavy mulch around the young trees and frequent watering until they are established is also essential. A spacing of 30 ft. x 30 ft. is optimum for grafted sapodilla trees.

### FERTILIZING

Mesple is not demanding in its fertilizer requirements. Newly planted trees need small applications to become established. During the first year applications should be made every three months beginning with 1/4 pound and gradually increasing to one pound. Thereafter, 2 applications per year are sufficient, in

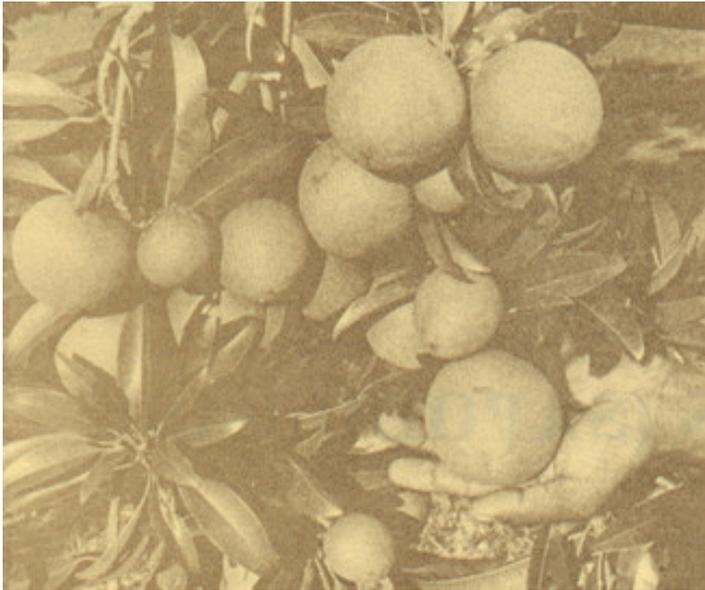


Fig 2. Fruit being held in the photo has lost the “needle” at its apex, which is a good indicator of maturity.

amounts proportionate to the increasing size of the tree. Fertilizer mixtures containing 6 to 8% nitrogen, 6 to 8% available phosphorus and 6 to 8% potash will give good results.

## PESTS

The mesple is one of the few relatively pest-free fruit trees. Insects and diseases usually do not cause sufficient damage to necessitate control measures. Several scale insects may infest mesple, causing development of black sooty mold on leaves. If this becomes widespread it can be controlled by oil sprays.

## HARVESTING

Grafted mesple begin to fruit about 3-4 years after planting. Greatest production occurs during summer months, but some fruit is produced throughout the year. When fruit reaches maximum size, it may be picked and allowed to ripen off the tree. However, a major difficulty in harvesting mesple is to know when maximum size or maturity has been attained. The needle (remnants of a persistent flower style) at the apex (lower end of the fruit) of some cultivars drop at full maturity and this is a good indicator, (Fig. 2.). By experience, one will be able to judge maturity of fruit of a particular cultivar by its size and appearance. Fruits are picked by tipping them sharply sidewise or upward or the fruit stem may be cut with clippers. Picker-poles are used to remove fruit from the tops of all trees. Young bearing trees are known to bear 400-500 fruits in a normal year, while mature thirty-year-old trees may be expected to yield 2,500-3,000 fruits per annum.

## USES

The mesple is used mainly as a fresh fruit in the Virgin Islands. The unripe fruit is astringent due to the presence of tannins which disappear almost entirely upon ripening. Flavor is improved by chilling softened fruits in a refrigerator before eating.

There is a great potential for exporting sapodillas to the mainland, providing harvesting and ripening problems can be overcome. In other areas, the fruit is used in jams, sherbets, ice cream, dilly rice and custards. Also, the fruit may be crushed and the juice boiled down to make a natural syrup or “honey”. For additional information on production and marketing of mesple, please contact your local Extension office. The Cooperative Extension Service has offices on St. Croix, St. Thomas and St. John.

## MESPLE RECIPES

### MESPLE CREAM SHERBERT

1 cup mesple puree	½ pint light cream
1 cup sugar	sprinkle of salt
2 cup milk	1 tsp. lemon juice, if desired

Use ripe mesples which are slightly soft. Mix sugar, sapodilla puree and lemon juice. Gradually add mixture to cream and milk. Freeze. Mesples vary in sugar content; if you are using very sweet fruit, use less sugar than is listed in recipe.

### MESPLE CUSTARD

1½ cups milk	3 tbsp. brown sugar
1¼ cups pureed mesple	½ tsp. salt

Scald milk, then combine all ingredients and mix well. Pour into buttered custard cups and set in a shallow pan of hot water. Bake at 325 degrees for 30 minutes or until done. Garnish with ½ tsp. carissa jelly. Serve warm.

### DILLY RICE

3 cups cooked rice	2 tbsp. crystallized ginger
2 mesples	1 tbsp. water
3 tbsp. crystallized lemon peel	

Cut mesples into ½ inch pieces. Cut ginger and lemon peel into bits.

Combine all ingredients in saucepan and heat until steaming hot.

### MESPLE ICE CREAM

1½ cup pureed mesple	½ cup sugar
¾ cup milk	1 tsp. lemon juice, if desired
1 cup whipped cream	

Mesples used in this recipe should be slightly soft. Mix sugar with the pureed mesple. Add lemon juice, then milk. Fold in whipped cream and freeze.

### MESPLE PUDDING

4 tbsp. butter	1½ cup flour
2 cups milk	2 tsp. baking powder
1 cup sapodilla pulp	½ tsp. baking soda
½ cup sugar	pinch of cinnamon

Cream butter and sugar. Combine flour and baking powder. Add to sugar mixture alternately with the milk. Mix soda and sapodilla pulp. Add to mixture. Add cinnamon. Mix well and bake in slow oven for one hour.

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