ROCK MELONS AS A CASH CROP IN THE MARKHAM VALLEY

By Warren C. Antonio, Co-ordinator, Food Crops,
D.P.I., Department of Morobe Province

INTRODUCTION

If you happen to be flying over the Markham Valley in the Morobe Province, you may notice scattered over the ground in some areas many round yellow fruits. These are rock melons or cantaloupes. Many people enjoy this delicious fruit just as much as the big, red, juicy watermelons.

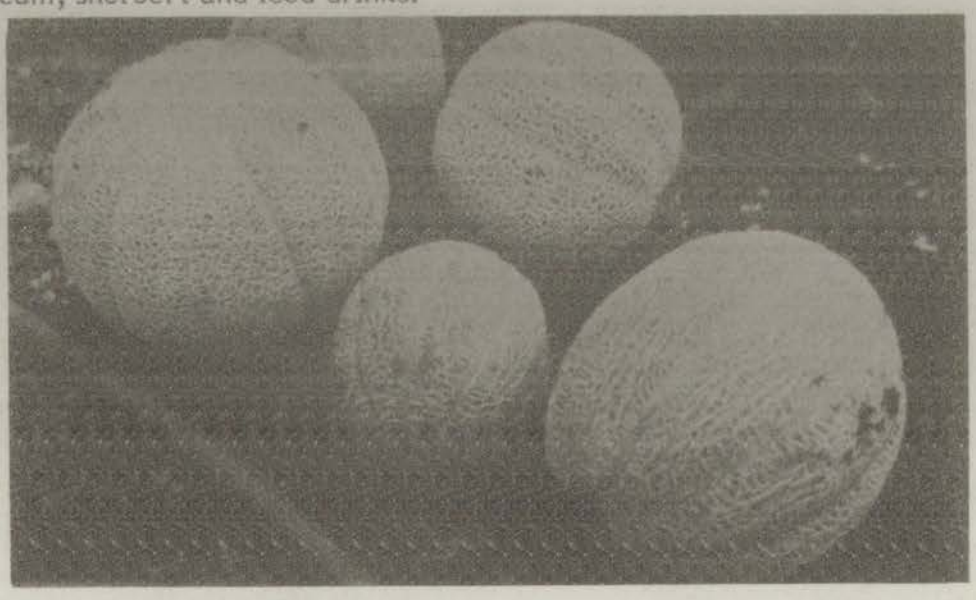
Rock melons were introduced as a cash crop in the Morobe Province in 1979. Since then, they have become more popular and are more common in local shops and markets. In the lowlands of Morobe Province conditions are suitable for rockmelon cultivation. They can be grown as a profitable cash crop.

Rock melons are used as desserts, and in making ice-cream, sherbert and iced drinks.

Before the government's ban on the import of fruit and vegetables, half the local supply of rock melons came from overseas. After the ban, local supply could not meet the increasing demand for this fruit. For this reason, the Food Crops Section of D.P.I. in Morobe Province decided to promote rock melon as a cash crop.

DESCRIPTION

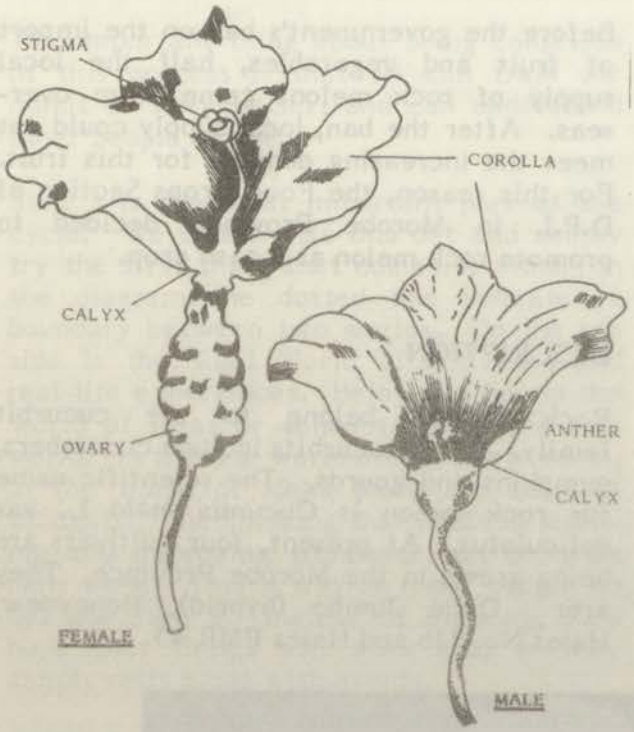
Rock melons belong to the cucurbit family. Other cucurbits include cucumbers, pumpkins and gourds. The scientific name for rock melon is *Cucumis melo* L. var *reticulatus*. At present, four cultivars are being grown in the Morobe Province. They are: Dixie Jumbo (hybrid), Honeydew, Hales No. 93b and Hales PMR 45.



Rock melon fruits. The large ones are Dixie Jumbo (hybrid) and the smaller fruits are Hales PMR 45. D.P.I., Lae is recommending Dixie Jumbo for Markham Valley farmers.

The vegetative parts of rock melon plants are similar to those of cucumbers and gourds. The leaves are smaller, light green and hairy.

Rock melon is a cross-pollinated crop. That is, plants bear either male or female flowers, and the fruits develop from the female flowers which have been pollinated by insects. The diagram shows the male and female flowers.



Female and male flowers of the rock melon. About 6 times actual size.

Except for the Honeydew variety, rock melon fruits have rough, netted skins with a hard rind, and are usually light greenish-white. The Honeydew melon has a smooth yellow skin.

Fruit size varies from about 12 cm diameter and 1.2 kg to 16-17 cm diameter and 3 kg.

All the cultivars have sweet-tasting firm flesh, which ranges in colour from orange to light yellow to green.

The following suggestion for growing rock melons apply to all 4 cultivars.

A rock melon growing demonstration project at Erap, Markham Valley. This is one of the projects set up by D.P.I., Lae to promote rock melon as a cash crop in the area.

CULTIVATING ROCK MELONS

Of the 4 cultivars grown in the Markham Valley, Dixie Jumbo (hybrid) gives the highest yields, and is specially recommended for this area. However, the other varieties are also suitable for growing commercially.

Climate and soil

Rock melons do best in temperatures of 18° to 24° C, and can be grown up to altitudes of 1000 m above sea level. They prefer areas which have distinct wet and dry seasons. The crop is usually planted towards the end of the wet season when the weather is cooler.

Sandy loam soils are suitable for growing rock melons. The soil should have a high content of organic matter. NPK fertilizer may be required. Recommendations for applying fertilizer are given in Table 1.

Preparing the ground

In the Markham Valley, if virgin kunai land is being used, first cut the kunai with a slasher, leave it to dry, then burn it. Prepare the land 2 or 3 days later.

TABLE 1. RECOMMENDED RATES OF FERTILIZER FOR GROWING ROCK MELONS IN THE MARKHAM VALLEY

Kind of fertilizer	Time of application	Application rate	Method
Complete (NPK 12:12:12) (plus animal manure)	At planting	10 g* per hill (equivalent to 50 kg per hectare)	Basal
Muriate of potash + solophos in 1 : 6 ratio	Post emergence at 4 - 5 leaf stage	10 g per hill	Side dressing
Muriate of potash + solophos in 4 : 6 ratio	Post emergence 1 week later	10 g per hill	Side dressing
Complete	When vines are 1 metre long	10 g per hill	Side dressing
Complete	First fruits are the size of an egg	10 g per hill	Side dressing

**10 g is about half a matchboxful*

Plough the land to about 20 cm deep, then harrow to break up the larger lumps of soil. A rotavator is sometimes used just after harrowing or just before planting.

For land which has been previously used for root crops, such as peanuts or kaukau, burned plant remains should be thoroughly mixed with the soil.

Spacing

In the Markham Valley, the recommended spacing for planting is 1 metre between hills and 2 metres between rows. This recommendation is based on yield trials and seems to give the best results.

Rock melons need plenty of sunlight to produce good stalks, leaves, roots and fruits. If they are planted too close together, the vines become overcrowded and each plant receives less sunlight. This results in a reduced yield of fruit.

Planting

Plant 4-5 seeds per hill. If either organic or chemical fertilizers are being used, they should be mixed thoroughly with the soil at planting. Add to the soil where the seeds are to be planted Captan, or Brassicol at 3 tablespoons per 4 litres of water. This is to control diseases carried on the seeds. Drenching should be just enough to wet the soil.

Thinning out seedlings

After the first 2 leaves have emerged, thin out the weakest seedlings, leaving 2 plants per hill. Cultivate between the plants regularly until the vines start to grow together. This helps to stop weeds growing.

Mulching

A mulch of dry grasses can be applied around the young plants when they are

growing well. Mulching helps to hold moisture in the soil, adds nutrients and helps to control weeds. Mulching is only necessary during dry weather. During heavy rains mulching may cause fungal diseases to develop.

Fertilizers

Fertilizer may be applied at planting, during the early vegetative growth, at flowering and at fruiting. The recommendations for the Markham Valley are given in Table 1.

Thinning of fruits and vines.

As soon as the fruits have formed, 45-50 days after planting, remove the vines which have no fruit. This will allow more plant food to reach the vines on which fruit is growing. We recommend that some fruits are removed if there are more than two growing on the same vine. For the best yields, only one or two fruits per vine should be allowed to develop to maturity.

Rearranging fruit

When the fruits begin to develop, place a layer of dry grass 5-6 cm thick beneath each one. This helps to protect the fruits from pests and diseases which may be in the soil. The mature fruits should be turned regularly so that all sides are exposed to sunlight. Turning also ensures that one part of the melon does not always stay damp where it touches the ground. A damp area could become a breeding place for insects which could damage the fruit and cause it to rot.

Irrigation

Rock melons need a good water supply especially at planting, early vegetative growth, flowering and when the fruits have developed. Irrigate once a week at these stages, if there is no rain. Also irrigate after each application of fertilizer. Do not irrigate after the fruits have matured.

Pests and diseases

The pests that attack rock melons are the same as those which attack watermelons and other cucurbits. Entomology Bulletins Nos 40, 41 and 42 in Harvest Vol. 11 No. 4 give details of the common pests of cucurbits and their control.

Rockmelons may be affected by downy and powdery mildew and mosaic virus. The fruit is basically resistant to downy and powdery mildew.

Harvesting

Rock melons can be picked at the 'full-slip' stage or the 'half-slip' stage. 'Full-slip' melons are those which separate easily from the plant leaving a clean stem cavity. 'Half-slip' melons are less mature, are more difficult to detach and about half of the stem stays attached to the fruit.

Both stages are fully netted and the colour has changed from green to mottled green and yellow, or yellow.

STORAGE, TRANSPORT AND MARKETING OF ROCKMELONS

Rock melons can be stored at room temperature for 2 to 3 days after harvesting. Make sure that the room is free from crawling insects like cockroaches. For transport to markets or stores, the melons should be carefully arranged in wire crates or cardboard cartons. The least ripe (that is, the firmest) fruit should be put on the bottom, with the more ripe melons on top. Take care not to expose the fruit to strong sunlight for a long time.

In Lae, the wholesale price for rock melons varies from 60t to K1.50 per kilogram, depending on the supply and demand situation. In supermarkets in Lae, the selling price for rock melons can be as much as K2.50 per kilogram.

It seems that at present the demand for rock melons is increasing, while local supplies are unstable.

SEED SUPPLY

In Lae, rock melon seeds can be obtained from the following suppliers: ICI, Niugini

Produce Marketing, Stockman, Niugini Pastoral Supply, Steamships and Burns Philp. Farmers should consult their local D.P.I. Extension Officer before buying seeds. In Lae, advice can be obtained from the author at 3 Mile D.P.I. Office.

FURTHER READING

Sutherland, J.A. (1986a). Pests of cucurbits 1. Pumpkin beetle. Entomology Bulletin: No. 40. *Harvest* 11 (4): 154-155.

Sutherland, J.A. (1986b). Pests of cucurbits 2. Black leaf-footed bug. Entomology Bulletin: No. 41. *Harvest* 11 (4): 156-158.

Sutherland, J.A. (1986c). Pests of cucurbits 3. Minor pests of cucurbits. Entomology Bulletin: No. 42. *Harvest* 11 (4): 159-163.