

Mangoes - Flowering to Market; Management of Bearing Trees

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Mango Management

As the move to improve domestic production and develop potential exports of mangoes gets underway, it is essential that full attention is given to the production of top quality fruit. Top quality is only achieved with careful management.

Flowering

First flowering in P.N.G. generally starts in early June, and the main flowering season continues till September. Light flowering may occur at other times of the year, usually following a dry spell. Any damage to the fruit at this stage will detract from quality at harvest. Fruit losses may be significant if incurred at this stage. Therefore careful attention should be given to pest and disease control during flowering. The main pest to watch out for is red banded thrips, which attack flowers and fruit. Flowering is usually timed to coincide with the dry season. However if wet weather occurs during flowering the disease anthracnose can cause serious damage and should be controlled by sprays.

Flower stimulation

Flowers can be induced on trees by using a 3% spray of potassium nitrate. This technique is particularly useful for promoting off-season flowering but can be used at any time of the year. It is important to follow up with weekly fungicidal sprays if flowering occurs during wet periods. Evaluation of the use of potassium nitrate is currently being carried out near Rabaul.

Fruit development

An adequate supply of water and nutrients is necessary during fruit development. For this reason mangoes should be planted on deep soils where roots have access to water during the dry season. Fertilizer should be applied twice a year, at the start of the rainy season and again at the end (see Horticulture Note No. 16). The area under the trees should be kept free of weeds as these compete with trees for water and nutrients. As the fruits ripen they become liable to fruit fly damage and control measures may be necessary. Anthracnose control should be

continued during fruit development if weather conditions favour the disease. Details of pest and disease control methods are given in Horticulture Note No. 16.

Harvesting

Fruit can be picked green-mature or allowed to ripen and colour fully on the tree. Fruit picked at the green-mature stage is not normally attacked by fruit fly and can be more easily transported to distant markets without damage. To tell if fruit is ready for picking the following indicators can be used:

1. Skin colour changes
2. Skin becomes smoother
3. The 'beak' of the fruit fills out

Usually it takes about 100 - 110 days from flowering till fruit is ready for harvest. If picked too early fruit will not ripen properly and achieve full flavour. If packed at the green-mature stage fruit will ripen fully 7 to 14 days after harvest.

Harvest should be carried out in the early morning when the fruit is cool, and under no circumstances should the fruit be left in the sun. The mango should be hand harvested using secateurs to cut the stalks. Where possible sap should not be allowed to come into contact with the fruit as it burns. Harvesting should be done using a ladder and no fruit should be allowed to drop as this causes bruising. Alternatively a special picking basket mounted on a long pole can be used for harvesting and enables the grower to reach fruit without using a ladder.

Post harvest treatment

After harvest the fruit can be rinsed to remove dust and sap. The stalks are then taken off, and the fruit stored, stalk-end down in the shade and dry.

If anthracnose is present black spots and streaks will develop on ripening fruit. In fruit harvested at the green-mature stage anthracnose development can be controlled by dipping the fruit in a hot benomyl suspension. The fruit is dipped for five minutes in water at 52°C to which 1 gram/litre Benlate 50% WP has been added. Not more than 1 kg of fruit should

be dipped in 3 litres of dip at any one time and the dip should be kept stirred. Dip suspension can be reused for up to 3 days and should be periodically topped with a suspension of the same strength as the original dip.

If fruit is intended for export it will have to be treated to destroy any fruit flies that may be present. Treatment procedure should be agreed with the importing country.

Post-harvest life can be prolonged by storing the fruit at 13°C. Lower temperatures should not be used as mangoes are liable to chilling injury.

Grading and packing

These are also necessary steps if optimum price is to be obtained. Fruit is graded according to size and should be of uniform maturity and free of blemishes. Special cardboard boxes for packing mangoes can be obtained. They hold a single layer of fruit and the variety and count (i.e. number of fruit) is specified on the outside of the box.

Further reading:

Horticulture Note No. 16 Mango field management: planting and care of young trees.

Horticulture Note No. 19 (forthcoming) Mangoes: pest and disease control.

For further information contact your Regional Horticulturist:

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