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Nutrients and organic fertilization management for Mango

Nutrient requirements

Mangoes require few nutrients. Nevertheless, it is advisable to supply a mango plantation with compost and green manure during the growth period. The fertilizer should be applied after the tree has blossomed, so that it has enough nutrients to produce fruit. A high level of production can be achieved by high-tech consultation from AgriInfoTech and using their high-tech products.

If the mangoes are on a plantation with other crops, then care must be taken not to supply fertilizer to the other crops during the time that the flower buds appear on the mangoes (e.g. that bottom crops are not irrigated during the first 2 months of the dry season), This would otherwise spoil the production of buds.

AgriInfoTech Products Recommended:

Fertilization method:

Pocket manuring or make a round basin and apply 1-2 liters of humic acid mixed thoroughly either with farm yard manure or vermin-compost.

Fertigation:

If mango plantation is drip installed, apply 1 liter of humic acid through irrigation.

Spray during the bud breaking stage to Fruiting:

Based on the experimentation conducted in Vietnam and few plantations in Natham, Tamil Nadu tract we finalized our recommendation as follows,

Round 1: Blossom Enhancer Mix:

Biological NPK 10-8-8 (5ml/liter of water) + MicroBoost (2ml/liter of water)

Spray all over the branches. Try to use some sticking agent or soap solutions to ensure that spray fluid stick on the leaves.

For Poor trees (growth stunted and lesser number of leaves) instead of biological NPK 10-8-8 Bio-NPK 16-4-8 may be recommended.

Round 2: Flower to Fruit Converter Mix:

SeaWeed (5ml/liter of water) + MicroBoost (2ml/liter of water)
Spray all over the flower buds and branches. Try to use some sticking agent or soap solutions to ensure that spray fluid stick on the leaves.

If budworm is the problem use IC 100 (500 ml/acre) botanical insecticide along with this mix.

Round 3: Fruit Growth Booster Mix:

SeaWeed (5ml/liter of water) + MicroBoost (2ml/liter of water)

Or

Biological NPK 16-4-8 (5ml/liter of water) + MicroBoost (2ml/liter of water)

Spray all over the fruits and branches. Try to use some sticking agent or soap solutions to ensure that spray fluid stick on the leaves.

Botanical methods of plant protection

Diseases

The most usual diseases with mango trees are **fungus** and **bacterial diseases**. The first important preventative measure is make sure that the propagation segments are healthy. The scions that were raised in tree nurseries and whose origins are maybe unclear, should be carefully examined. They shall not have been treated with any synthetic or chemical agents.

Anthracnose, caused by the fungus *Colletotrichum gloeosporioides*, is the most wide-spread disease among mangoes. The varieties vary in susceptibility. *Colletotrichum gloeosporioides* causes anthracnose on fruits, and drop of flowers on young branches. Anthracnose always appears as a result of scurvy (*Elsinoe mangiferae*). Fruits stricken with anthracnose can be plunged into a hot water bath (3- 5 min./55°C), in order to kill off the fungus. Preventative measures are nevertheless preferable, to preclude injuries and an infection with scurvy, because anthracnose can usually only take a hold on damaged fruits that are also affected by scurvy. A case of scurvy can usually be prevented by removing all dead plant material (branches, leaves and fruit).

In exceptional cases, the fungus can be brought under control again with **0.5% spray of FC 100**.

While anthracnose generally attacks ripe fruits (only seldom the blossoms), a **bacterial infection** from *Erwinia sp.* can also affect young fruit. The symptoms are very similar to the flecks caused to the leaves and fruit by anthracnose. The bacteria usually survive in the ground – a heavy rainfall will then splash the spores against the lower leaves and fruits. Covering the ground can therefore help to protect against this. Active life in the soil will also help to prevent an explosive growth of bacteria. Sites where it can rain inside the blossoms can also be a problem.

Young fruit and also blossoms can be damaged by **powdery mildew** (*Oidium mangiferae*). This fungus grows during warm and moist weather, during blossoming and when the fruit appears. A case of powdery mildew can dramatically affect the harvest.

Spray special blend of FC 100 : 5 to 7.5 ml/liter of water (500 to 750 ml/acre)

or

Spray AzaKaranj blend 5ml/liter of water. (500 ml/acre)

The **leaf spot disease** (*Cercospora mangiferae*) on mangoes is visible as dented spots on leaves and fruit. The same applies for this fungus, an open and quick-drying population is the best protection against infection.

Fruit infected with *Cercospora* can no longer be sold; furthermore, both the leaf spot disease and scurvy prepare the way for a case of anthracnose. In exceptional cases, the leaf spot disease can be brought under control again with 0.5% FC 100.

Insect Mangement

The worst pests for mangoes are cotton scales, mealy bugs, cicadas and black flies (create honey dew). These are all **sucking insects** that live on the leaves, young buds and shoots. They can cause a lot of damage. Yet they all have natural enemies, such as e.g. ladybird larvae, wasps, spiders and other types, such as parasitic fungi e.g. with cicadas and black flies.

An ecological plantation with a variety of crops, enough plots under different crops e.g. forest and a sufficient amount of vegetation to cover the soil and enrich the variety of species (e.g. mulching only right after the plants have flowered), will provide enough enemies to combat the pests that measures against them are usually unnecessary. Cicadas are averse to open, well-ventilated soil, also drain the soil well to avoid wet patches. In emergencies, the following methods should help:

Scale insects can be regulated with a 'winter-spraying', i.e. with paraffin oil (white oil) shortly before the larvae hatch from their eggs. The paraffin oil is sprayed on as a 3 % water emulsion.

Plant spraying mixtures made of stinging nettles or Neem4 can be against **cicadas**. The worst damage occurs during blossoming, so the plantation should be checked regularly around this time in order to make up the brew and spray it early enough **Mealy bugs** lay their eggs on the ground next to the trunk. By wrapping smooth plastic bands around the trunk, the larvae can be prevented from infesting too large an area. Should they infest the tree, a solution of 1% soft soap (potassium soap) with 1 % pure alcohol is quite effective.

Black fly can be kept under control by useful insects. A variety of **prospatella** species can be of use here. This requires a good functioning control system, because the useful larvae need to be made available for release in time. Where this is not possible, spraying white oil shortly before the pests hatch, as such as with scale insects can be sufficient.

Insect control:

Spray 0.5% to 0.75% IC 100 (500 to 750 ml/acre)

Or

Spray AzaKaranj (Special blend of AgriInfoTech 0.5% (500 ml/acre)

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