

## MANGO

Mango orchards are attacked by several pests leading to poor quality of fruits and low returns to the orchardists. The Central Institute for Subtropical Horticulture (CISH), Lucknow has developed a calendar of operations for integrated pest management. The recommended month wise operations are listed below to facilitate easy comprehension and adoption.

### January

- Clean at regular intervals the alkathene bands already fastened on tree trunk to manage mango mealy bug.
- To control inflorescence midge, spray Fenitrothion (0.05%) or Dimethoate (0.045%) or Monocrotophos (0.04%) at the bud burst stage.
- If necessary, carry out second spray with above insecticides after a fortnight.

### February

- For control of hoppers, carry out first spray with carbaryl (0.2%) or monocrotophos (0.04%) or chlorpyrifos (0.04%) or dimethoate (0.06%). Undertake pruning and destruction of inflorescence infested with inflorescence midge.
- Clean polythene bands at regular intervals.

### March

- If necessary, carry out second spray with any of the insecticides above for control of mango hoppers.

### April

- To look after the grafted seedlings, if necessary, spray Carbaryl (0.2%) or Monocrotophos (0.04%) to control leaf cutting weevils.
- Hang methyl eugenol bottle traps (methyl eugenol 0.1% + malathion 0.1% solution) for monitoring of fruit fly and its control.

### May

- Change bottle trap solution at weekly intervals.

### June

- Change solution in methyl eugenol traps at weekly intervals.



Spraying on mango plants

- Undertake early harvesting of mature fruits to avoid fruit fly infestation.
- Collect and destroy fruit fly infested fruits.

### July

- Change solution in methyl eugenol bottle traps at weekly intervals.
- Collect and destroy fruit fly infested fruits.
- Carry out deep ploughing of orchard immediately after harvest to expose eggs and pupae of mealy bug and inflorescence midge.
- If required, spray Monocrotophos (0.04%) or Dimethoate (0.06%) to control scale insects in the second week. This will take care of infestation of leaf eating weevil and shoot borer.
- Prune and destroy shoots infested by shoot borer.

### August

- Remove webs (made by leaf Webber) by 'leaf web' removing device and burn them.
- Prune overcrowded and overlapping branches to control leaf Webber.
- Spray Carbaryl (0.2%) or Monocrotophos (0.04%) or Quinalphos (0.05%) in case of heavy infestation of leaf Webber. These insecticides will also control infestation of shoot gall psylla.

### September

- If necessary, undertake second spray of one of the insecticides mentioned above (in August) for control of shoot gall psylla and leaf Webber.

### October and November

- Flood orchards to destroy eggs of mealy bug, dia-pausing pupae of midge and fruit fly.
- Prune shoots and branches infested with leaf Webber and shoot gall psylla, if required.
- Carry out deep ploughing of the orchards to expose eggs and pupae of insects and to remove weeds which harbour pests and diseases.

### December

- Fast 25 cm. wide alkathene sheet of 400 gauge thickness around the base of tree to control mealy bug.

- Rake soil around the tree trunk and mix neem cake for management of mealy bug nymph or apply Chlorpyrifos dust (1.5%) @ 250 g per tree.

## PRECAUTIONS IN ORCHARD MANAGEMENT

In order to carry out efficiently the operations listed month-wise, it is necessary to adopt several precautions as well. These are:

- Planting at proper distance.
- Training and pruning.
- Clean cultivation.
- Intercultural operations at regular intervals.
- Avoiding spray at full bloom.
- Avoiding use of pesticides which damage the pollinating agents.
- Avoiding use of synthetic pyrethroids.
- Preferable use of neem based pesticides, predators and parasites in orchards.

### Availability of Bio control Agents

1. Director, National Centre for Integrated Pest management (ICAR), Lal Bahadur Shastri Bhawan, IARI Campus, Pusa, New Delhi 110012.
2. Project Director, Project Directorate of Biological Control, PB No. 2491, Hebbal, Bangalore – 560024.
3. Director, Central Rice Research Institute, Cuttack -753 006 (Orissa).
4. Director, Directorate of Oilseeds Research, Rajendra Nagar, Hyderabad-500 030.
5. Director, Indian Institute of Horticultural Research, Hassaraghatta Lake Post, Bangalore-560 089.
6. All State Agricultural Universities.
7. Biotech International Ltd., 'VIPPS Centre', 2-Local Shopping Centre, Block-EPGH, Masjid Moth, GK-2, New Delhi-110 042.
8. Excel Crop Life India Ltd., 705-707, Navrang House, 21-Kasturba Gandhi Marg, New Delhi.
9. Pest Control India Pvt. Ltd., 36- Yusuf Building, MG Road, PB No. 1510, Mumbai

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