

Mango Thrips Management

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Introduction

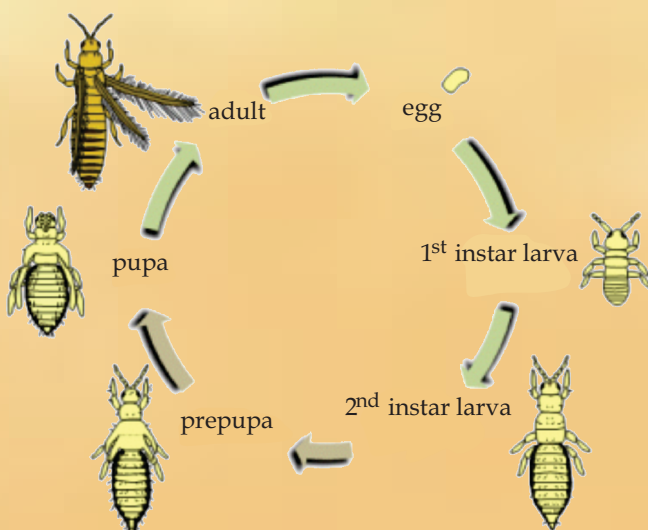
Recently thrips insect has created havoc in most of the mango growing areas of northern plains. Approximately, 50 per cent of damaged fruits were recorded in severely affected orchards. There are twenty thrips species reported to be inflicting mangoes. Among them, the most dominant ones observed in northern plains are viz., *Scirtothrips dorsalis*, *Rhipiphorothrips cruentatus* and *Thrips hawaiiensis*.

Life cycle

The life cycle of thrips consists of five stages: egg, larval, prepupal, pupal and adult. Gravid females insert the eggs inside plant tissues including leaves, buds, inflorescence and fruits. The eggs are hatched between two to seven days. The larval stage consists of 2 instars that feed and develop on the leaves, flowers and fruits. The two larval stages completed in eight to ten days and the pupal stage lasts for 2-3 days. The prepupal and pupal stages often complete their development on the ground, but sometimes pupation can also take place on the plant and plant debris. The adults are weak fliers, usually taking short flights from leaf to leaf or plant to plant. Thrips get spread over large distance by



Symptoms of damage to growing shoots, panicles and fruits of mango by thrips



wind. The total lifecycle of thrips on mango varies from 15 to 20 days depending on the environmental conditions. Thrips population are low in winter whereas they reach their peak in summer.

Nature of damage

On mango, thrips infestation starts with the new flushes and panicle emergence during the 13th to 22nd standard meteorological weeks (last week of March to last week of May) in the northern plains. The larval and adults stages are the

damaging stages. They damage the mango young leaves, growing buds, inflorescence, flowers, immature and developing fruits by lacerating and sucking the sap from the tissues. This causes silvery or brown patches on the affected parts where the plant cells are destroyed. As a result of its damage, curling up of leaves and wilting of inflorescence were also recorded. In severe cases affected fruits become rusty in appearance. This pest can damage the entire new growth, if it is not treated properly.

Management

Monitoring

Monitoring the population levels of thrips is important for successful pest management. Commercially available blue or yellow sticky traps can be used to monitor the population densities of adult thrips. The traps should be checked at weekly intervals and the average number of thrips per trap be recorded.

Cultural control

Sanitation is the first and most important step in implementing an effective pest management programme. Effective sanitation will reduce or even eliminate thrips as a pest problem. Cultural control measures also include maintaining a healthy crop by the following recommended package of practices.

Chemical control

Chemical control of thrips is very difficult. They are resistant to most pesticides and feed deep within the flower or on developing leaves. This makes them a difficult target for insecticides, so thorough coverage is essential. If you use

pesticides to control thrips, follow these general guidelines:

- ❖ Begin applications early, before thrips population grow too much. Thrips are more easily managed when population levels are low.
- ❖ Although it is important to rotate chemical classes, use only one chemical class for the duration of the thrips' life cycle.
- ❖ Apply pesticides during early morning or late afternoon, when flight activity of thrips is at its peak. This increases exposure of the thrips to the pesticides.

Integrated strategies for thrips management

- ❖ Monitor for thrips infestation by placing blue or yellow sticky traps at regular intervals.
- ❖ Neem based pesticides control young nymphs effectively, inhibit growth of older nymphs and reduce the egg-laying ability of adults. Spaying of Neem Seed Kernel Extract (5%) or Neem oil (2%) reduce the initial stages of the thrips effectively.
- ❖ Promoting natural enemies that include predatory thrips, predatory mites (e.g. *Amblyseius* spp.) anthocorid bugs or minute pirate bugs (*Orius* spp.), ground beetles, lacewings, hoverflies, lady bird beetle and spiders in the orchard by conserving them in orchard will reduce the pest attack considerably.
- ❖ If the infestation is severe, spray with insecticides like thiamethoxam 25% WG (0.3 g / lit) or Imidacloprid 17.8% SL (0.3 ml / lit) Spinosad 45%SC (0.4 g/lit).

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