

Lecture 16- INSECT PESTS OF GUAVA (*Psidium guajava*) AND THEIR MANAGEMENT:

Learning Objectives

- Distribution, biology, nature and symptoms of damage and management strategies of major pests of Guava

1. Tea mosquito bug: *Helopeltis antonii* (Miridae: Hemiptera)
2. Fruit fly: *Bactrocera diversus* (Tephritidae: Diptera)
3. Mealy bug: *Ferrisia virgata*, *Maconellicoccus hirsutus* (Pseudococcidae: Hemiptera)
4. Bark caterpillar: *Indarbela tetraonis* (Metarbelidae: Lepidoptera)

1. Tea mosquito bug: *Helopeltis antonii* (Miridae: Hemiptera)

Distributio: It is found attacking tea, neem, cashewnut and guava in different parts of India. It is serious on tea in Kerala.

Damage symptoms:

The nymphs and adults of the tea-mosquito bug *Helopeltis antonii* (Miridae) feed on petioles tender shoots and leaf veins causing necrotic lesions, coalesce to form patches. On foliage, brownish-black necrotic patches appear and resin exudes from feeding punctures. Blisters and scales / rusty corky growth /scab formation on fruits, Due to the attack the fruits become unsuitable for marketing



Life history:

It is a slender insect 6 - 8 mm in length with a yellowish brown head and abdomen, a dark red thorax and long dark appendages. Female inserts 32 eggs into epidermis of tender shoot, axis of inflorescence and tender fruits, egg period 7-8 days, eggs elongated and slightly curved with a pair of filaments. Nymphal period 14-16 days. Life cycle completed in 22-25 days. They undergo five moults and complete one generation in two weeks in June and eight weeks or more in cold weather.

Management strategies:

- ☐ Undertake pruning to regulate the shade to facilitate proper penetration of sunlight inside the canopy.
- ☐ Spray endosulfan 35 EC or carbaryl 50 WP @ 2.5 kg in 1500 – 2000 L water per ha + Urea 3% at flower initiation again at fruiting time.
- ☐ Periodical spray application of Malathion 0.1 per cent has been reported to minimize damage.

2. Fruit fly: *Bactrocera diversus* (Tephritidae: Diptera)

- ☐ **Distribution:** All guava orchards throughout the country
- Host range:** Guava, Tomato and other commercial fruits.

Damage symptoms:

Maggots bore into fruits and feed on soft pulp. The infested fruits show small cavities with dark greenish punctures and when cut open, the wriggling maggots are seen inside. The infestation causes rotting and dropping of fruits.

Life history



Eggs laid on soft skin of fruits and egg period 1-4 days. Maggot pale cream, cylindrical, 5-8 mm in length, larval period 4-5 days. Maggot pupates in soil, pupal period 7 - 13 days. Adult smoky brown with greenish black thorax having yellow marking

Management strategies:

Collect and destroy the damaged plant parts.

- ☐ Summer plough to expose and kill pupae.
- ☐ Harvest the fruits when slightly hard and green.
- ☐ Spray endosulfan 35 EC or malathion 50 EC 2 L in 1500 – 2000 L of water per ha.

3. Mealy bug: *Ferrisia virgata*, *Maconellicoccus hirsutus* (Pseudococcidae: Hemiptera)

Distribution: All over India and other grapevine growing countries.

Host range: Grapevine, Hibiscus, mulberry, guava, custard apple, okra, tamarind and glyricidia.

Damage symptoms



Both nymphs and adults suck sap that results in crinkling and yellowing of leaves and rotting of berries

Life history:

The adult female lays 350-500 orange coloured eggs in a loose cottony terminal ovisac; egg period 5-10 days. Crawler nymphs orange coloured, females and males with 3 and 4 nymphal instars respectively. Adult females pinkish and sparsely covered with white wax. One generation per month, but, life cycle extends in winter months

Management strategies:

- Debark the vines and swab with methylparathion @ 1 ml /L to minimize the population
- Spray dichlorvas 1.0 L or chlorpyriphos 1.25 L or buprofezin 25 SC 1.0-1.5 L or methomyl 40 SP 1.25 kg with 500 L water/ha.
- Release Australian lady bird beetle *Cryptoleamus montrouzieri* @ 2500 – 3750 per ha

4. Bark caterpillar: *Indarbela tetraonis* (Metarbelidae: Lepidoptera)

Distribution : Throughout India, Burma, Bangladesh and Sri Lanka potential major pest.

Damage symptoms :

Young trees succumb to the attack. Caterpillars bore into the trunk or junction of branches make zig zag galleries Presence of gallery made out of silk and frass is the key symptom. They remain hidden in the tunnel during day time, come out at night and feed on the bark. Under severe infestation, flow of sap is hindered, plant growth arrested and fruit formation is drastically reduced.



Life history:

Adults emerge in summer and lays 15-25 eggs in clusters under loose bark of the trees. Eggs hatch in 8-10 days. Larvae makes webs and feeds making zig zag galleries on the wood filled with frass and excreta and later bores inside the wood. Larval period is 9 -11 months and then pupates inside the stem. Pupal stage is 3-4 months.

Management strategies:

- ☐ Kill the caterpillars by inserting an iron spike into the tunnels.
- ☐ Injecting ethylene glycol and kerosene oil in the ratio of 1:3 into the tunnel by means of a syringe and then seal the opening of the tunnel with mud.
- ☐ Dip a small piece of cotton in any of the fumigants, like chloroform or petrol or kerosene, introduce into the tunnel and seal the opening with clay or mud.