



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

Lecture 18

PESTS OF GUAVA AND POMEGRANATE

Pest of Citrus

1. Tea mosquito bug:

Helopeltis antonii (Miridae: Hemiptera)

Distribution and status: Karnataka, Goa, Maharashtra, Tamil Nadu

Host range: Guava, cashew, tea, moringa, neem and others

Damage symptoms: Adults and nymphs 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, widespread drying of shoots, inflorescence and flowers and shedding of fruits is witnessed.

Bionomics: 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.

Management

Undertake pruning to regulate the shade to facilitate proper penetration of sunlight inside the canopy.

Monocrotophos 36 WSC @ 2.5 L in 1500 – 2000 L water per ha at new flush formation.

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.

2. Fruit fly:

Bactrocera diversus (Tephritidae: Diptera)

Distribution and status: 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.

Bionomics: 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

- Collect and destroy the damaged plant parts.
- Summer plough to expose and kill pupae.
- Harvest the fruits when slightly hard and green.
- Spray fenvalerate 20 EC 1 L or endosulfan 35 EC or malathion 50 EC 2 L in 1500 – 2000 L of water per ha.
- Rake the soil around the tree and apply lindane dust 1.3 D @ 25 kg per ha.

3. Castor capsule borer:

Conogethes punctiferalis (Pyraustidae: Lepidoptera)

Distribution and status: South India (Major)

Host range: Cardamom, castor, jack, guava

Damage symptoms: Larva bores into the young fruits which dry up and fall prematurely, bore holes plugged with excreta.

Bionomics: Eggs laid on top leaf axils, inflorescence, tender part of plant and fruits, egg period 6-7 days. Larva pale reddish brown with numerous tubercles on body. Larval period 12-16 days. Pupation inside the fruit in a silken cocoon, pupal period 4-11 days. Medium sized bright orange-yellow color has numerous black dots on wings. Life cycle completed in 25-33 days.

Management

- Collect and destroy the damaged plant parts.
- Use light trap 1/ha to monitor the activity of adults.
- Spray malathion 50 EC at 3 L or endosulfan 3 L or dimethoate 30 EC 3 L in 1500 – 2000 L water per ha, two rounds, one at flower formation and next at fruit set.

4. Mealy bug:

Ferrisia virgata, *Maconellicoccus hirsutus* (Pseudococcidae: Hemiptera)

Distribution and status: 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.

Bionomics: 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

- Debark the vines and swab with methylparathion @ 1 ml /L to minimize the population
- Spray dichlorvas 1.0 L or chlorpyrifos 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 • Conserve coccinellid *Scymnus craccivora* and lepidopteran predator *Spalgis epus*
- Avoid spraying methyl parathion, carbaryl, monocrotophos, dimethoate, methyldemeton, quinalphos, diazinon, malathion etc as they are toxic to predators.

5. Spiraling whitefly:

Aleurodicus dispersus (Aleyrodidae: Hemiptera)

Distribution and status: It is an introduced polyphagous pest of vegetables, fruit trees, ornamentals and shade trees. It is native of the Caribbean Islands and Central America. It is widely distributed in almost all countries due to rapid dispersal and adaptability.

Host range: It is found on 128 plants including guava, cassava, cotton, chillies, tomato, brinjal, bhendi, papaya, crotons and weeds such as Euphorbia, Corchorus, Eclipta, Vernonia, Vicoa, Acalypha, Alternanthera, Amaranthus, Convolvulus, Abutilonetc.

Bionomics Adults are larger than many of the whitefly species and white in colour with waxy coating on the body. Eyes are dark reddish brown. Fore wings are with three characteristic spots. Eggs are laid in a spiraling pattern (concentric circles) on the undersurface of leaves. Egg period lasts for 5-8 days. Nymphal period is 22-30 days. Adult longevity is for 13-21 days. Total life cycle is completed in 40-50 days. Adults and nymphs congregate heavily on the lower surface of leaf, suck the sap and cause pre-mature leaf drop, chlorosis, yellow speckling, crinkling and curling. Honey dew secretion also leads to the development of sooty mould fungus. The copious white, waxy flocculent material secreted by all the stages of the pest is readily spread by wind

and thus cause public nuisance. It is also a suspected vector of mycoplasma disease, lethal yellowing in coconut.

Integrated Pest Management

1. Remove and destroy damaged leaves along with life stages.
2. Remove and destroy weed plants like Abutilon, Acalypha, Euphorbia, etc., in the nearby vicinity as these plants are alternate hosts.
3. Use yellow sticky traps at 15/ha to attract and kill the adults
4. Release *Chrysoperla carnea* predators at 10000/ha to kill all life stages
5. Encourage the activity of predators such as Encarsia and Coccinellids, *Chilocorus nigrita*, *Chilomenus sexmaculatus*, etc.
6. Spray Fish oil rosin soap (FORS) 25g/L or NSKE 5% or neem oil 0.03% 1ml/l or phosalone 35 EC 3 L or triazophos 40 EC 3 L or acephate 75 SP 1.5 kg in 1500 -2000 L per ha, two to three times based on the incidence.
7. Avoid using synthetic pyrethroids and extending crop growth. 8. Conserve spiraling whitefly parasitoids, *Encarsia haitiensis* and *E. guadeloupae*.

Pest of Pomegranate

1. Anar butterfly / Fruit borer:

Virachola (Duodorix) *isocrates*, *Rapala varuna* (Lycaenidae: Lepidoptera)

Distribution and status: All over India. Host range: Aonla, apple, ber, citrus, guava, litchi, loquat, peach, mulberry, pear, sapota, tamarind.

Damage symptoms: Larvae bore inside the developing fruits and feed on pulp and seeds just before the rind exhibiting round bore holes on fruit. Infested fruits are also attacked by bacteria and fungi, which ultimately fall off and give an offensive smell.

Bionomics: Shiny, white, oval shaped eggs laid singly on calyx of flowers and on tender fruits. Egg period 7-10 days, larval period 18-47 days. Caterpillar, dark brown, having short hairs and white patches all over the body. Larvae pupates inside fruit but occasionally outside even, attaching themselves to stalk of fruits, pupal period 7-34 days. Male glossy, bluish violet, female brownish violet with an orange patch on forewings. Four generations completed in a year.

