

## Lecture 24:- INSECT PESTS OF CASHEW (*Anacardium occidentale*) AND THEIR MANAGEMENT:

### Learning Objectives

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

1. Tea mosquito bug: *Helopeltis antonii* (Miridae: Hemiptera)
2. Stem and root borer: *Plocaederus ferrugineus* (Cerambycidae: Coleoptera)
3. Thrips: *Rhipiphorothrips cruentatus*, *Selenothrips rubrocinctus* (Thripidae: Thysanoptera)
4. Bark borer: *Indarbela tetraonis* (Metarbelidae: Lepidoptera)

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

**Distribution:** It is distributed in most of the cashew growing regions of the country

#### **Damage symptoms:**

The nymphs and adults suck the sap from the tender leaves, shoots, inflorescences, immature nuts as well as immature apples. Water soaked lesions appear at the feeding sites after 10-15 min of feeding. These lesions become prominent within 3-6 hours, turn pinkish brown in 24 hours, and scabby black in 2-3 days. Feeding also causes exudation of gummy substances from the plant parts. Later, the lesions coalesce and ultimately results in drying of shoots. The infestation on inflorescences results in blossom blight, wherein the flowers and stalks of inflorescences completely dry up. Upon severe damage, most of the flushes and inflorescences dry up and the



tree develops a scorched appearance.

**Life istory:**

Female inserts 82 eggs into epidermis of tender shoot, axis of inflorescence and nodes. Eggs are elongate and slightly curved with a pair of filaments, egg period 7-8 days. Nymphal period 14-16 days. Life cycle completed in 22-25 days. Adult is a reddish brown bug with black head, red thorax, black and white abdomen, and a knob like process on mid-dorsal thorax.

**.Management strategies:**

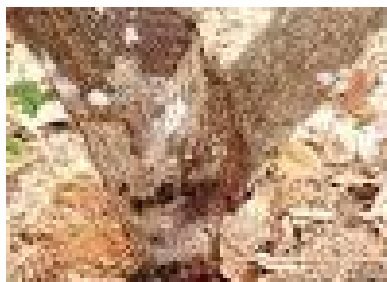
- ☐ Undertake pruning to regulate the shade to facilitate proper penetration of sunlight inside the canopy.
- ☐ Spray the following insecticides, thoroughly covering foliage and bark during early morning hours.  
Monocrotophos 36 SL 3.0 L at new flush formation.
- ☐ Spray endosulfan 35 EC or carbaryl 50 WP 3.0 Kg In 1500-2000 L of water per ha + Urea 3% at flower initiation and again at fruiting time

**2.Stem and root borer: *Plocaederus ferrugineus* (Cerambycidae: Coleoptera)****Distribution:**

The pest is distributed in most of the cashew growing regions of the country including Kerala, Karnataka, Goa, Maharashtra, Tamil Nadu, Andhra Pradesh, Gujarat, Chhattisgarh, Odisha, Jharkhand, West Bengal and North-East regions.

**Damage symptoms:**

During the initial stages of pest attack, exudation of gum and frass can be noticed in small quantities at the base of CSRB infested trees. During later stages of attack, the infested tree canopy shows a sickly appearance with yellowish leaves and premature dropping of leaves occurs. During the severe stages of attack, the twigs dry off and the bark on the trunk starts splitting. At this stage, large quantity of chewed fibres and gum, as well as frass can be seen as huge lumps at the base of the infested trees and the tree finally succumbs to death.



**Life history:**

Ovoid, dirty white eggs laid under loose bark in their early stages and into the wood in their late stages. Egg period 4-6 days. Full grown grub measures 7.5 cm and tunnels its way into the root region, grub period 6-7 months. Pupation occurs in a calcareous pupal chamber and pupal period 60 days. Life cycle completed in one year.

**Management strategies:**

- ☐ Undertake periodical cleaning of collar region, removal of grubs, pupae and eggs and inter ploughing wherever possible during monsoon months.
- ☐ Uproot and remove dead trees from the plantation
- ☐ Avoid injury to the trunk or exposed portion of the root.
- ☐ Swab the bark of the exposed roots and shoots with carbaryl 50 WP 2 g/L, lindane 20 EC 1 ml/L
- ☐ Swab with kerosene - coal tar mixture (1:2) upto one metre height on the trunk and on exposed bark after shaving the infested bark to prevent egg laying.
- ☐ Place carbofuran 3 G 5 g or inject 10 ml monocrotopos 36 SL and plug with mud to kill the grubs.

**3.Thrips: *Rhipiphorothrips******cruentatus,******Selenothrips******rubrocinctus* (Thripidae: Thysanoptera)****Distribution:**

Throughout cashew growing regions. Among the flower thrips, *S. dorsalis* and *R. raoensis* are prevalent in the East coast regions of India, whereas in West coast regions, *H. ceylonicus* and *F. schultzei* are prevalent.

**Damage symptoms:**

Three species of thrips mainly cause damage to tender cashew leaves. If they attack at nursery stage, even death of seedlings may occur. Among the thrips, *S. rubrocinctus* is very serious in nursery and young cashew plantations. In seedlings, initially it attacks lower leaves and cause premature leaf fall, stunting and finally drying of seedlings. In grown up plants, it damages young leaves, shoots, inflorescence and flowers and is more active during summer months. The adults and immature stages of thrips colonise the lower surface of leaves. Flower thrips attack buds, flowers, immature apples and nuts. Thrips infestation causes shedding of flowers, immature fruit drop, formation of scabby as well as, malformed apples and nuts. Up to 15-25 per cent fruit drop is noticed due to thrips damage.



#### **Life history:**

The adults are dull dark brown body or black in colour with reddish strip on the first three abdominal segments, 1.3 – 1.8mm long. Lays eggs on lower leaf surface. Egg period lasts between 3-7 days depending on the temperature. Nymphs are wingless, vermiform, while adults are winged. In *S. rubrocinctus*, nymphs hatch in 12 days, move freely carrying a drop of excrement at the anal end. The nymphal, pre-pupal and pupal period lasts for 10, and 2-3 days, respectively.

#### **Management strategies:**

- ☐ Spray dimethoate 30 EC or methyl demeton 25 EC 1.5 L in 1500 -2000 L of water per ha.
- ☐ There are several predators like various syrphids (*Paragus* sp.), coccinellids (*Pseudospidemerus circumflexa* Mots., *Menochilus sexmaculata*, *Coccinella transversalis*, *Scymnus* sp., *Illeis cincta*), lace wing bugs etc that take care of this pest.

#### **4. Bark borer: *Indarbela tetraonis* (Metarbelidae: Lepidoptera)**

##### **Distribution and status:**

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