

**Identification:** The caterpillars are creamy white and have a few bristly hairs and their body tapers posteriorly. The moths have pale-yellow abdomen. The head and the thorax are greyish. The fore wings are pale straw yellow and the hind wings are whitish.

**Life cycle:** The pest is active from March to October. The moths lay cream colored scale like eggs singly or in batches. A single female may lay 100-200 eggs in its life span of about a week. The eggs hatch in one week. They pass through 4 or 5 stages and are full-fed in 8 weeks. After pupation, they transform themselves into adults in one week. The life cycle is completed in 11 weeks and the pest has 5-6 overlapping generations in a year.

**Damage:** The young larvae feed for a few minutes on exposed plant parts and then bore into the shoot by making longitudinal tunnels. The caterpillars feed exclusively in the main stem and have never been observed to bore into the fruits. As a result of their attack in the field, plants are seen withering and drying up.

**Control:**

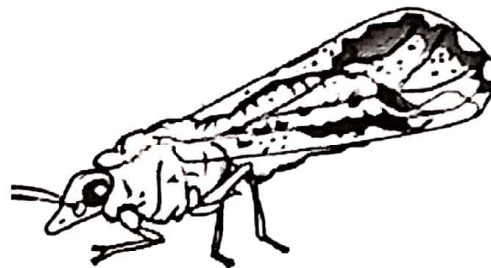
- The withered plants should be uprooted and burned.
- When the attack of this borer is serious, avoid rationing of brinjal crop.
- Spray the crop with emamectin benzoate 200 gram/acre or cypermethrin EC 200-250 ml/acre.

## 4.7 INSECT PESTS OF FRUITS

### 4.7.1 CITRUS PSYLLA

T.N: *Diaphorina citri*

(Psyllidae; Homoptera)



**Identification:** The insect is brown with its pointed head. The nymphs are flat, louse like and orange yellow, congregates in large numbers on the young leaves and the buds.

**Life cycle:** The adults lay 500 almond-shaped, orange and stalked eggs on tender leaves and shoots of citrus trees. The eggs are laid either singly or in groups which

hatch in one week in the summer. There are 5 nymphal stages and the development is completed in 2 weeks. Full grown nymphs migrate to the lower surface of the leaves and convert into adults. There are 8-9 overlapping generations in a year.

**Damage:** With the help of their sharp, piercing mouthparts, they suck the cell-sap. The vitality of the plants deteriorates and their young leaves and twigs stop growing further. The leaf-buds, flower-buds and the leaves may wilt and die. Moreover, the nymphs secrete drops of a sweet thick fluid on which a black fungus develops, adversely affecting photosynthesis. This insect is also responsible for spreading the greening virus. If the pest is not checked in time, the entire orchard may be lost within one or two years of continuous damage.

**Control:**

- Lady bird beetles and green lace wings are important natural enemies of citrus psylla.
- Spray trees with imidacloprid SL 40ml/100 l of water or endosulfan EC 200ml/100 l of water.

#### 4.7.2 CITRUS CATERPILLAR / LEMON BUTTERFLY

T.N: *Papilio demoleus*

(Papilionidae; Lepidoptera)



**Identification:** Eggs are small, rounded and pale in colour. The caterpillar is yellowish green with few oblique brownish strips. It has a horn like structure on the dorsal side of the body. The caterpillars also have two reddish sacs posterior to head. The adult is a large beautiful butterfly with green coloured wings having black spots.

**Life cycle:** The female lays nearly 100 – 150 eggs singly or in groups. Larva lives for 1-2 weeks. Larva spins a cocoon around its body and pupates. Pupal duration is one week. Adult life is less than one week.

**Damage:** Larva feeds on young / tender leaves and terminal shoots. Their habit is to eat from

edge up to midrib. Larger caterpillar can feed on mature leaves.

**Control:**

- Hand picking of larvae.
- *Trichogramma spp.* are effective egg parasitoids.
- Spray of 3% neem extract is also affective.
- Spray trees with endosulfan 35 EC / methamidophos 60 SL (200ml/100 L of water)

#### 4.7.3 CITRUS LEAF-MINER

T.N: *Phyllocnistis citrella*

(Gracillariidae; Lepidoptera)

**Identification:** Eggs are minute and transparent. Larva is legless, pale yellow in colour. Adult is a tiny moth and silvery white in colour. Fore and hind wings have fringe of hairs.

**Life cycle:** The female lays eggs singly on leaves. Larva lives for 2-4 weeks. Mature larva settle down in galleries near the leaf margins. Later on, larva spins a cocoon and pupates. Pupal duration is 1-2 weeks. Adult life is 2-3 weeks.

**Damage:** This pest is active throughout the year. Larvae mine into young / tender leaves and form zigzag galleries between upper and lower leaf layers. Infestation of this insect results in infection of citrus canker.

**Control:**

- Collection and burning of mined leaves.
- Spray of 2 % neem extract is also affective.
- Bifenthrin 10 EC 40ml/100 L of water
- Imidacloprid 200 SL 40ml/100 L of water

#### 4.7.4 MANGO HOPPERS

T.N: *Amritodus atkinsoni*

(Cicadellidae; Homoptera)

**Identification:** Adult are grayish. There are three dark brown spots on the head, a median band and two black spots on the pronotum.