

2023-2024 Autumn.

Lecture 06

Insects of Industrial Crops (Cotton Insects)

The Insects of Cotton are:

- 1- Spiny Bollworm
- 2- American Cotton Bollworm (Tomato Fruit Worm)
- 3- Cotton Leaf Worm
- 4- Cotton Seed Bug
- 5- Green Vegetable Bug
- 6- Black Cutworm
- 7- Cotton Thrips
- 8- Cotton Whitefly
- 9- Cotton or Melon Aphid
- 10- Cotton Jassids (Leafhoppers)
- 11- Two-Spotted Cricket
- 12- Small Grasshoppers

1- Spiny Bollworm

***Earias insulana* (Boisd.) (Lepidoptera: Noctuidae)**

Description:

Eggs: Blue colored sculptured eggs laid singly on shoot tips and flowers.

Larva: Dark brown colored with attractive white spots and when fully grown, is 15–18 mm long.

Pupa: Pupates in silken cocoon on plant or side soil and is about 13 mm long.

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Adult: The adult is a small moth with green or yellowish-green wings, pale hind wings, and a wing-span of 20–22 mm.



Damages:

The larvae bore into growing points or into the internodes, feeding on soft tissue, and causing death of the tips. They also bore into flower buds, open flowers and young bolls, which may be shed, leaving “flared” squares, and later into larger bolls, which are usually not shed.



2- Cotton Seed Bug

***Oxycarenus hyalinipennis* (Costa) (Hemiptera: Lygaeidae)**

Description:

The **eggs** are 1mm long, oval shaped, creamy white and laid in open bolls. The **nymphs** are bright red and can be found in clusters

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among the lint. **Adults** are oval-elongate, 3-5mm long and their forewings are transparent with a black spot in the center. Their bodies are dark brown/ black and are visible through the wings.

Damage:

Adults and nymphs feed on ripe cotton seeds. The only economic damage is from reduction of seed weight in late bolls, which may be as much as 15% and also reduction of seed viability under moist conditions favorable to feeding. Because this damage tends to be only to seeds in late bolls it is not normally considered a pest requiring control measures.



3- Green Vegetable Bug

Nezara viridula (Linnaeus) (Hemiptera: Pentatomidae)

Description:

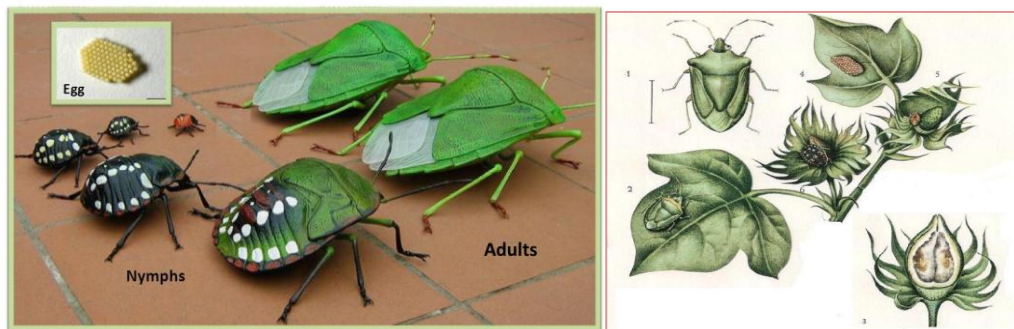
The **eggs** are yellow-white when laid. In 4 - 5 days the eggs turn pink and become red orange a day later.

Newly emerged **nymphs** are red and stay on the eggs mass for 48 hours or longer. In this time they darken in color to a reddish brown. At each molt the bug increases in size, growing from 0.15 cm newly emerged to 1.25 cm at the fifth and last nymphal instar. All nymphs are about as broad as long, dark in color, with red and white or yellow markings on their bodies.

The **Adult** stink bug is shield-shaped. They are usually green color, but may occasionally be a reddish brown.

Damage:

The bugs feed by piercing plant tissue with needle-like styles. The actual feeding puncture is not immediately visible. Adults and nearly all nymphal instars (2nd to 5th nymphal instars) feed on a variety of plant tissue. Succulent parts of the plant and the developing flowers or fruit are preferred. Feeding injury becomes visible sometime after actual feeding.



Green Vegetable Bug
Nezara viridula (Linnaeus) (Hemiptera: Pentatomidae)

4- Black Cutworm

Agrotis ipsilon (Hfn.) (Lepidoptera: Noctuidae)

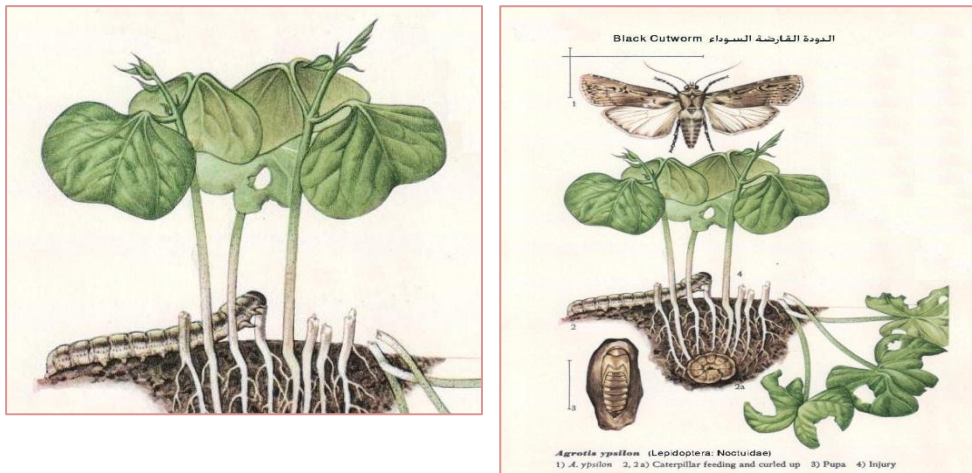
Description:

The **egg** is white, round, and about 0.5 mm. There are six **larvae instars** ranging from 5 to 50 mm in length. The larva is basically one color varying from light gray to nearly black. The spiracles are distinctly black. When disturbed, the larva curls up. The **pupa** brown in color is about 15 to 20 mm long, with distinct mouthparts and antennae. The **moth** is characterized by long, narrow, usually dark forewings which are pale near the tips. There are three black dashes on each forewing. Hind wings are white with dark veins and broad, dark, indefinite margins. The wingspan varies from 40 to 50 mm.

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Damage:

The young larvae feed on the leaves of many crops; the older caterpillars feed at the base of crop plants or on the roots or stems underground. Seedlings are typically cut through at ground level; one caterpillar may destroy a number of seedlings in this manner in a single night.



5- Cotton Whitefly

Bemisia tabaci (Genn.) (Homoptera: Aleyrodidae)

Description:

The oblong **eggs** are smooth and about 0.2 mm long and 0.1 mm. There are four **nymphal instars** before the adults emerge: **Crawlers (first instar):** When the eggs hatch greenish-yellow, flattened, oval first instar nymphs about 0.3 mm long emerge.

Second and third instar nymphs: During this stationary stage they look like soft scale insects, oval but slightly pointed towards the tail. **Fourth instar nymphs or pupae:** Late in the third instar and through the fourth instar nymphs develop obvious red eyes and are referred to as red-eyed nymphs. They are yellow and about 0.6-0.8 mm long.

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Adult whiteflies are small 0.8 to 1.2 mm long. Adults hold their wings vertically tilted, like a peaked roof. They have white wings and yellow bodies.

Damage:

Typically, whitefly infestations result in reduced flowering, defoliation, sticky and discolored plant parts as well as plant death under heavy infestation. Although whitefly is more common on glasshouse grown ornamental species, it is a pest of many plant species causing both direct and indirect damage. The whitefly is also a vector for many plant viruses.

