

Lecture 03

Cereal Crop

Include the following crops: (Wheat, Barley, Rice and Corn)

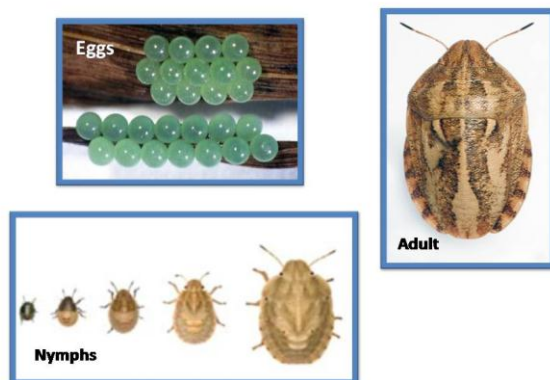
The Insects of Cereal Crops:

- 1- Sunn Pest (Sunn Bug), 2- Wheat Thrips, 3- Wheat Aphid
- 4- Wheat Ground Beetle, 5- Hessian fly, 6- Rice Stem Borer
- 7- Rice Thrips, 8- Corn Stem Borer, 9- Corn Leaf Aphid
- 10- (Tomato Fruit Worm, 11- Cotton Leaf Worm, 12- Sugar Beet Armyworm, 13- Black Cutworm

1-Sunn Pest *Eurygaster integriceps* (Hemiptera: Scutelleridae)

Description:

Eggs green in colour; spherical or barrel shaped, length about 1 mm; chorionic surface smooth and shiny; laid in small clusters, typically in multiples of 14; red eye spots appear in last phase of embryonic development. **Nymphs** green in colour; 2nd and 3rd instar nymphs have a light abdomen and dark head and thorax. 4th instar nymphs have rudiments of forewings, and 5th instar has rudiments of both fore and hind wings. **Adults** with varying coloration, more often light brown, 12 mm in length. Body wide-oval, Scutellum big, wide, chitinous, covering wings and whole abdomen.

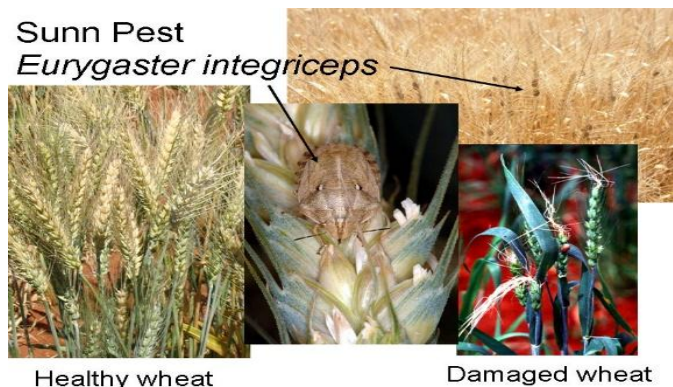


Sunn Pest (Sun Bug)
Eurygaster integriceps (Hemiptera: Scutelleridae)

Damages:

Sunn Pest causes two types of damage:

1. Wheat yield loss: causing reductions as high as 90%.
2. Grain quality damage: If 2-5% of the grains in a lot have been fed upon by Sunn Pest, the entire lot may be unusable to make bread.



2- Wheat Thrips *Haplothrips tritici*

(Thysanoptera: Phlaeothripidae)

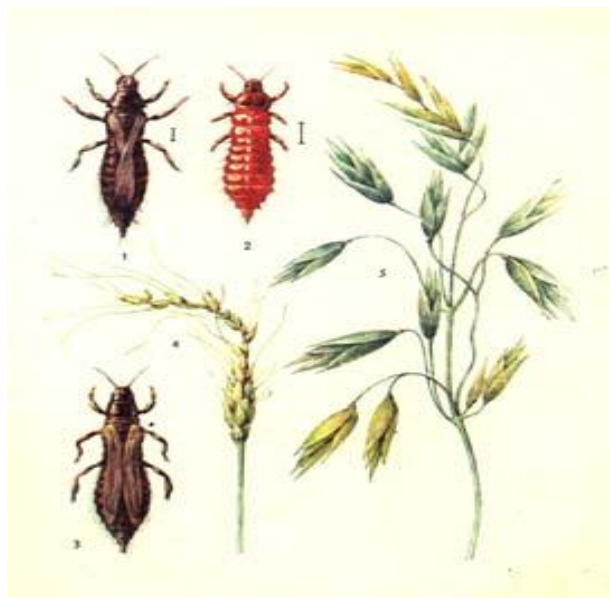
Description:

Eggs are usually oblong and a creamy color. **Nymphs** are very small about 0.25 mm long; and are white or cream-colored during the first instar, gaining more color during later instars. The margins of the wings are fringed with hairs. **Adult** males may be wingless. Adult thrips are tiny insects, only 0.4-1.8 mm long and are various colours. These adults, which are slender, torpedo shaped, fast-moving, generally have 4 wings.



Damages:

Both immature and adults feed by rasping the leaf surfaces, sheaths, and heads with their mouth styles and sucking up the sap which flows from the injured area. This injury causes distorted leaves and heads with a silvery and/or flecked appearance. The tips of the leaves generally wither, curl up, and die. Thrips can also transmit viruses.



3- Wheat Aphid *Schizaphis graminum* (Homoptera: Aphididae)

Description:

The oval eggs are black, and the body of female is light green with longitudinal stripe along the dorsal side. The body length varies from 2.7 to 2.9 mm; the antenna is half as long as body length. Insect density increases quickly during the phase of plant elongation, and huge colonies can cover leaves completely.



Wheat Aphid
Toxoptera (Schizaphis) graminum
(Homoptera: Aphididae)

Damage

Feeding by Wheat Aphid initially causes yellow or red leaf spots. Continued feeding leads to general yellowing and reddening, leaf and root death, and can lead to plant death. Plant size, yield and survival are greatly affected by Wheat Aphid feeding on susceptible small grain cultivars.

Feeding results first in a small yellow chlorotic spot surrounded within 24 hr by a ring of water-soaked tissue. The spots enlarge, become brighter yellow and coalesce with other feeding spots within a few days. The midrib becomes necrotic as the spots cover the majority of the leaf surface.



4- Wheat Ground Beetle *Zabrus tenebrioides* (Coleoptera: Carabidae)

Description:

Eggs white in colour, and Larvae 30 to 35 mm long, white; head and prothorax dark brown, mesothorax, metathorax, abdominal plates and legs light brown. Adult 15 mm long, dull black dorsally, light brown ventrally. A relatively large head and a bulging thorax give it a "hunchbacked" appearance. Elytra are bulgy. Tibiae and tarsi are reddish brown.



Wheat Ground Beetle
Zabrus tenebrioides
(Coleoptera: Carabidae)

Damages:

The main damage is that done by the adult beetles to the young shoots just below ground level, the stems being eaten through. One adult beetle may destroy several seedlings in a row. Losses of young plants can be extensive. Some adult damage consists only of a hole in the side of the stem, with the resulting 'dead-heart'. The larval damage is less significant and consists of the roots being eaten away; the symptoms of larval attack are general wilting and yellowing of the leaves.



5- Hessian fly *Phytophaga destructor* (Diptera: Cecidomyiidae)

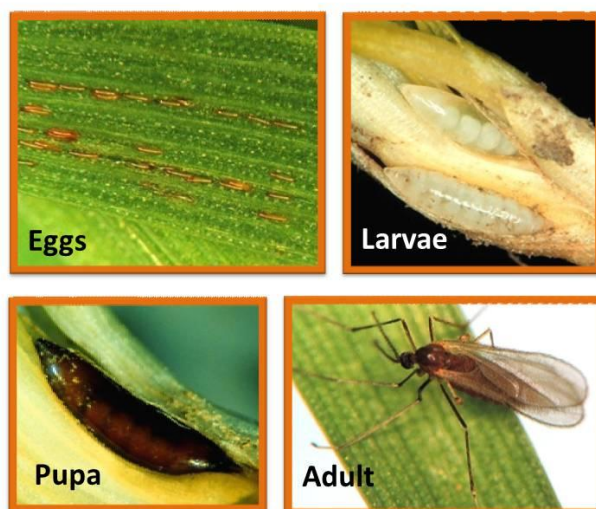
Description:

Egg - The thin, cylindrical egg is 0.4 to 0.5 mm long. Although uniformly glossy red when laid, it gradually becomes deeper red at one end and opaque white at the other.

Larva - The newly hatched maggot is red for 4 or 5 days after which it turns white. As the larva matures, a translucent green stripe appears down the middle of its back. The full grown maggot is 3.5 to 5.5 mm long and about 1 mm wide.

Pupa - The brown-headed pupa is basically white with a reddish tinge. The puparium within which the pupa is found is spindle-shaped, red to dark brown, and 2.5 to 6.2 mm in length.

Adult - The adult Hessian fly is a small, dark, long-legged, two-winged insect which resembles a mosquito. The female fly, about 4 mm long, has a distinct reddish tinge. The brown or black male is 2.5 to 3.5 mm long and bears two pairs of abdominal claspers.



Hessian fly, *Phytophaga destructor*
(Diptera: Cecidomyiidae)

Damage:

Hessian flies are one of the most destructive pests of wheat. The maggot's parasite between the leaf sheath and the stem and extract juices from the plant. Fall-infested wheat usually dies during the winter. Spring-infested wheat produces grain but usually lodges before harvest. Economic infestations are uncommon in some locations largely due to proper planting date selection.

