

Salahaddin University - Erbil
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Field crop insects

Lab 2

Cereal Crop

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Cereal Crop

The most common cereal crops include **wheat, rice, maize(corn), barley, and oats**

These grains are packed with nutrients like carbohydrates, proteins, vitamins, and minerals, making them a main food in many cultures.

The Insects of Cereal Crops include :-

- 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- maize weevils
- 13- Black Cutworm

1- Sunn Pest

Eurygaster integriceps

(Hemiptera: Scutelleridae)

Description:

Eggs green in color; spherical or barrel shaped, length about 1mm; chorionic surface smooth and shiny; laid in small clusters, on the leaves and stems of host plants, particularly wheat, barley, and oats.



Nymphs :-

are rounder in shape and normally dark brown to black
have 5 instars nymphs are smaller and wingless
but they share the same basic body shape and coloration
as adults.



•**Adults:-** Adults are about 12 millimeters long with a broad oval body and a wide, chitinous scutellum that covers the wings and abdomen.

•The color can vary, but they are typically light brown with darker markings on the head and scutellum.



Damage:-

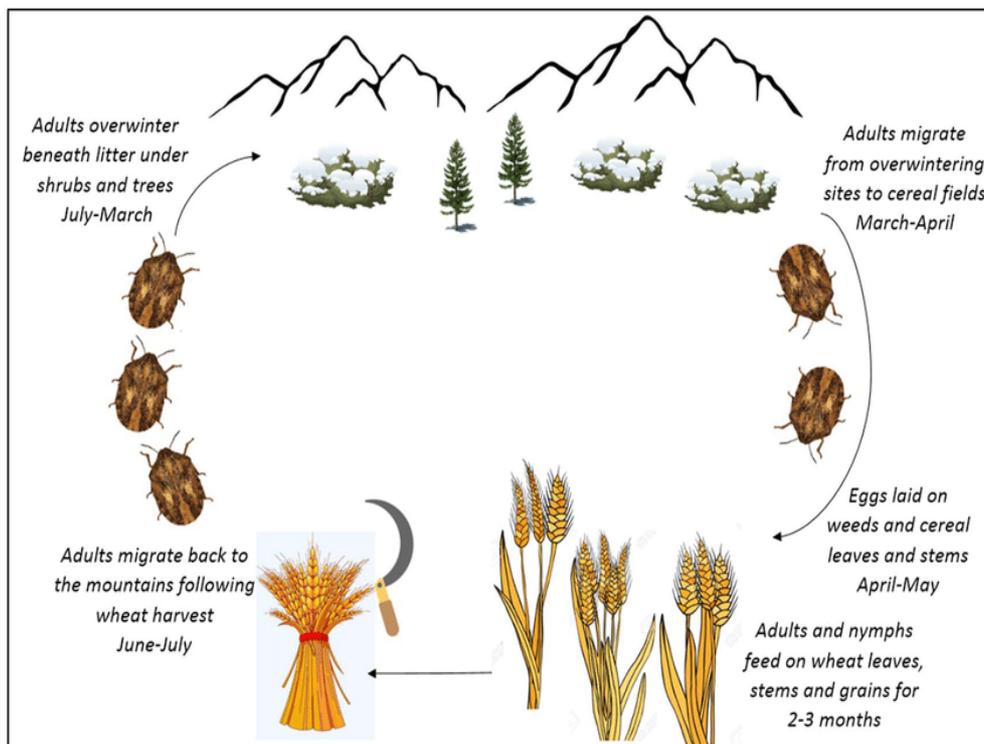
1.Direct

feeding: Nymphs and adults: Both stages of the sunn pest use their piercing-sucking mouthparts to feed on the sap of leaves, stems, and developing grains. This can cause wilting, stunting, and reduced yields.

•**Injection of toxins:** During feeding, sunn pests inject saliva containing enzymes that break down plant tissues and make them easier to digest. These enzymes can also harm the plant's overall health and reduce grain quality.

2.Indirect damage:

•**Transmission of plant diseases:** Sunn pests can act as vectors for certain plant viruses, spreading them from plant to plant.



2- Wheat Thrips

Haplothrips tritici

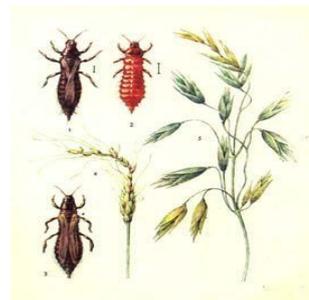
(Thysanoptera:Phlaeothripidae)

- Adults are minute, measuring only about 1.5-1.8 mm in length.
 - Their bodies are typically blackish-brown to black, although some individuals can be paler.
 - They have four fringed wings,
 - although the hind wings are much smaller
 - than the forewings.
- and characteristic mouthparts adapted for piercing and sucking plant fluids.



Damages:

1. Leaf stippling: Feeding leaves silvered covers or stripes.
2. Distorted growth: Thrips feeding on developing grains can cause them to shrivel and distort.
3. Reduced yield: Severe infestations can significantly reduce wheat yield and quality.
4. Transmission of viruses: Increased susceptibility to fungal diseases



3- Wheat Aphid

Toxoptera graminum

(Homoptera: Aphididae)

Description:

Size: Adults are tiny, measuring only about 2mm long.

Color: Typically yellowish-green, but can vary from pale green to dark brown.

Body: Soft-bodied, pear-shaped with slender legs and antennae.

Mouthparts: Piercing-sucking mouthparts used to extract plant juices.

Reproduction: **Parthenogenetic**, meaning females can reproduce without mating. (viviparous) and have sexual reproduction (oviparous)

Adults: Winged or wingless forms present, with winged adults responsible for long-distance dispersal.



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

Damage

1. Direct feeding: Aphids wound plant tissues and suck out sap, stunting plant growth.
2. Toxin injection: During feeding, they inject toxins that further harm the plant, causing leaves to roll, curl, and discolor.
3. Honeydew: Aphids excrete a sticky sugary liquid called honeydew, which attracts sooty mold, further reducing photosynthesis and yield.
4. Virus transmission: Certain species of wheat aphid can also transmit plant viruses,

Impact:

- Severe infestations can lead to significant yield losses, sometimes amounting to up to 50%.
- Reduced grain quality

4- Wheat Ground Beetle

Zabrus tenebrioides

(Coleoptera: Carabidae)

Eggs :-white in color.

Larvae:- 30 to 35 mm long, white; head and prothorax dark brown, mesothorax, metathorax, abdominal plates and legs light brown.



Adult:

Color: deep black, often with a pale metallic shine.

Size :These medium-sized beetles measure 12-16mm in length.

Body shape: They have a dorsal, convex body with rounded elytra that completely cover their abdomen.

- Head: They have a large head with strong mandibles for chewing.
- Legs: Their legs are long and powerful,
- adapted for running and burrowing.

**Damages:**

The main damage is that done by the adult beetles to the new growth just below ground level. Seeds: During flowering and grain formation, adults feed on the developing seeds, causing yield losses and reducing grain quality.

One adult beetle may destroy several seedlings in a row. Losses of young plants can be extensive.

The larval damage burrow into the soil and feed on plant roots, weakening the plants and reducing their ability to take up water and nutrients.

the symptoms of larval attack are general wilting and yellowing of the leaves.

