

Prof ANIL KUMAR zoology

B.Sc HONS Part-III Paper-VII

Topic: Wheat Pest and its control

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**Q. ②. Give an account of wheat pest and its control.**

**Ans. Pests of wheat (*triticum vulgare*) :** Wheat is the most important cereal in north India. Although it is attacked by several insect pests, yet only a few are considered serious when the crop is in the field (1) Surface or gujhia weevil *Tanymecus indicus*.

Order—Coleoptera

Family—Curculionidae

Host plants—Gram, wheat, barley, brassica crops etc.

Damaging stage—Adult.

**Nature of damage :** The damages is caused by the adult weevils by cutting generally the plumule of tongue seeding of wheat and barley crops just near the ground level. First few leaves of these seedings may also be attacked the seeding which are not more than 60-80 mm in height are attacked and those older than this escape the damage. This weevil is a sporadic pest of considerable importance, breeding on germinating winter attacks the crop in seeding stage.

**Identification and life-history—**

**Adult :** The weevils are earthen grey in colour and measures about 6-8 mm in length and 2-4 mm in width. The pest is active from June to December and passes the rest of the year as groove or pupa in the soil.

**Egg :** The female lays 6-16 eggs in the soil under clouds or in crevices in the ground. The eggs hatch in 42-49 days and the young enter the soil.

**Larvae :** The groove feeds probably on soil humus. They are full grown in 10-18 days.

**Pupa :** Pupation takes place in earthen clammers at depth of 150-600 mm. The pupa stage lasts 49-63 days and the adult emergence next year in June or July.

The pest has only one generation in a year control. Mixing in soil 20 percent BHC dust @ 30 kg/ha or 5 percent aldrin dust or 5 percent heptachlor dust or 5 percent chlodane dust @ 25 kg/ha or thimet 10g @ 15 kg/ha proves effective in controlling the pest.

**(2) Wheat shoot fly—*Atherigona naqvil***

Order—Diptera

Family—Anthomuidae

Host plants — Wheat barley etc.

Damaging stage — larvae.



**Nature of damage :** The damage is caused by the maggots which enter the stem of young seedlings and kill the central shoot which produces dead hearts in the infested plants. The insect is found in almost all the wheat and barley growing areas.

**Identification and life-history :**

**Adult :** The adult is a small dark fly. The fly after emergence is most active from mid January to mid March.

**Egg :** The female fly deposits 15-20 eggs on the very tender leaves and base of the stem of the young seedling.

**Larva :** The maggots which hatch out, bore into the stem and cause dead hearts in infested plants.

**Pupa :** Pupation takes place inside the infested stem.

**Control :** (i) Hand picking is effective in controlling and destroying the pest.

(ii) The late sowing of wheat and barley crop checks the attack of Ananias.

(iii) Soil application of thimet log @ 15 kg/ha in furrows behind the plough at the time of sowing is effective where the pest is of regular occurrence. Spraying the infested crop with 0.03% phosphamidon 100 Ecor 0.07% endosulfan 3 SEC @ 700 liter water/ha proves effective in controlling the pest.

**(3) Aphids :** *Macrosiphum imscanthi takashashi*, *Aphis maidis* *Rhopalosiphum rabiabdominatus*.

Order—Hemiptera

Suborder—Homoptera

Family—Aphididae

Host plants—Wheat, barley

Damaging stage—Nymph and adult.

**Nature of damage :**

The damage is caused by nymphs and adults which suck sap from the ears and tender leaves and decrease the yield of the crop. They are found in clusters near the leaf sheath. Barley crop is much more affected than wheat. In case of wheat crop roof aphids have also been reported from Punjab, Rajasthan and some parts of western U. P. and M. P. The pest is more prevalent in the month of January and February specially when the weather is cloudy.

**Identification and life-history :**

The insects are green, louse like and appear on young leaves or ears in large numbers during the cold and cloudy weather. The nymph and the female look like except that the latter are longer. The winged forms appear only in early summer. The wheat aphids breed at fast rate during cold weather and reach to maximum of its population in February and March when the ears are ripening. The females give birth to young ones and are capable of reproducing without mating. When wheat and barley crops matured and the summer is approaching, the winged form of both males and females are produced and they migrate to other plants like doopgrass. (*synodon ductylon*)



The damage is particularly severe in years of cold and cloudy weather. A heavily matured, well irrigated and succulent crop will harbour the pests for a longer period and suffer greater damages.

**Control :** Spraying the infested crop with 0.03% dimethoate 30 EC or 0.03% formothion 95 percent phosphandon 100 EE or 0.05%, 50 EC or 0.03 Endosulfan, 35 EC 2700 litre water/ha prove effective in controlling aphids.

#### **(4) Brown wheat mite—*Petrobia lateus muller***

Order—Acarina

Family—Acarididae

Host plants —Wheat and barley

Damaging stage — All the stages of mite.

**Nature of damage :** All the stages of mite feed on upper as well as lower surfaces of leaves the leaf sheath and spikes. The plants become infesting wheat and barley particularly in irrigated tracts. Although the attack of mite is also seen in irrigated areas.

**Identification and life-history :** The brown wheat mite has been reported as a serious pest of wheat and barley from many parts of India.

The male of the species are not found therefore reproduction is parthenogenetic. The period of activity continues from early December of mid April and the peak period of activity occurs in March.

Acarus Spp. (Seed mite) feed on the seed contents. Number mites feed on a single seed. This is very common in dry matured fields.

#### **(5) Wheat fly—*Scoliopterus micon***

Order —Diptera

Family—Chloropidae

Host—Wheat and barley

**Damaging stage—**Larvae (maggots)

The damage is caused by the maggots which enter inside the central leaf and tunnel downwards. Whole of the central foliage is damaged. Pupation takes place inside the stem and 2-3 pupa are found in a single plant.

**Control :** Spraying the infested crop with 0.03% fenitrothion 50 EC or 0.03% methyl demeton @ 500 litre water/ha proves effective in controlling the mites.