



## Major Pests of Soybean Leaf

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### ABSTRACT

The article focuses mainly on information about the pests that damage soybean leaves. Information about some of them is also given.

### Keywords:

Soybean leaf, insects, eggs, White fly, Bihar hairy caterpillar.

The population dynamics of major defoliator and stem pests, infesting soybean in relation to weather parameters were envisaged to have insight into the predisposing ecological factors for occurrence of the pest. The climatic factors such as temperature, rainfall and humidity usually act in a density independent manner influencing insect to a greater or lesser extent. The experiment was conducted in pesticide free conditions. The population dynamics of pests of soybean was studied in different meteorological weeks. The population dynamics of leaf miner (*Aproaeremamodicella* Deventer), stemfly (*Melanagromyza* sojaj, Zehntner), girdle beetle (*Obereopsis* Brevis Swedenbord), and some defoliators was worked out by recording their observations weekly.

The line sowing of seed (MAUS-71) was done by maintaining 45cm distance between two rows and 5cm between two plants. The number of defoliating larvae/meter row length (mrl) was recorded at three places on weekly basis and leaf damage due to defoliators was worked out in terms of per cent defoliation.

Number of larvae/plant in 10 plants, total number of leaflets and damage leaflets due to leaf miner was recorded and percentage was worked out. Total number of plants and number of plants succumbed to stem fly infestation/mrl at 3 places per plot on 7 and 10 days after sowing were recorded and expressed in per cent. Plant height and length of stem tunneled in 10 plants at physiological maturity was observed and expressed in percentage. One meter row length area was marked at five places and total number of plants and girdled plants by girdle beetle permrl were recorded. However, its continuous cultivation with simultaneous increase in area has led to increase in disease, insect and weed incidence. Currently, soybean is severely attacked about half a dozen major diseases, a dozen of insect pest and several major weeds. Yield losses due to individual disease/insect/weed species ranges from 20 to 100 per cent. However, with integrated pest management schedule, 30-35 per cent additional yield can be obtained.

*Aphid:(Aphis glycines)*

Adult soybean aphids can occur in either winged or wingless forms. Wingless aphids are adapted to maximize reproduction, and winged aphids are built to disperse and colonize other locations. Immature soybean aphids resemble adults but are smaller and always wingless. Wingless soybean aphids are pearshaped, 1/16" long, and range from pale yellow to lime

green in colour. On late-season soybeans, some aphids may be pale and smaller and often occur on lower leaves of the plant. Adults have dark-tipped cornicles ("tailpipes") at the end of the abdomen. Winged soybean aphids have a dark thorax (central body segment) and cornicles, and transparent wings that extend well past the abdomen.



White fly: (*Bemisia tabaci*)

Due to attack of the insect the leaves turn yellow and become curled. This insect spread the mosaic disease in soybean.

- ✓ Nymphs and pupae: Black and round or oval. Pupae have marginal bristles.

- ✓ Adults: Small, yellow bodied insects with white wings which are densely covered with a waxy powder



Girdle beetle: *Oberea (Obereopsis) brevis*

Visible symptoms can be observed at the seedling stage characterized by two circular cuts on the plant's branch or stem. Seedlings and young plants are wilted or dead while older plants' leaves are just wilted or brown,

and all dried up. Circular rings will be seen on affected branches, The infested part above the cut will dry up eventually. At a later infestation stage, the plant is severed at about 15-25 cm above the ground. Larva: White, soft-bodied

worm with a dark head. Adult: The freshly emerged adult is yellow, red, brown on the head, thorax and bases of elytra.

*Tobacco caterpillar (Spodoptera litura):*

Symptoms Larvae of this insect feed on leaf and scrapping the leaf tissue. Older larvae disperse and feed continuously on leaf at night. They are usually hide in the soil during the day. Female adult laying their eggs in the herd on the lower surface of leaves. The fully developed caterpillars of this insect are dark brown in

colour. This insect has a yellow stripe on both sides of the body and also black spots on their body part. The larvae and adult of this insect grow rapidly at temperatures between 15-35°C.

*Damage*

After eating the leaves, these caterpillars start feeding on young pods also and consequently damaging 40-50 % of the pods. Soybean crop has more prone to the attack of caterpillar when higher dose of nitrogen given to the crop.



*Bihar hairy caterpillar: Spilosomaobliqua Symptoms:*

Young larvae feed gregariously on chlorophyll mostly on the under surface of the leaves, due to which the leaves look like brownish-yellow in colour. The final instar larvae feed on the leaves from the margin. The damaged leaves of the plant appear in skeletonised/ net/ web form.

Eggs: Lay in clusters of 600-700 under the surface of the leaves.

Larva: Orange coloured with broad transverse band with tufts of yellow hairs that are dark at both ends. Pupa: Forms a thin silken cocoon by interwoven shed hairs of the larvae.

Adult: Crimson coloured moth with black dots and a red abdomen.

Pinkish wings with numerous black spots.

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