

## Major Insect Pest of Cotton

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Cotton, the king of natural fibres since antiquities, has been entwined in human civilization (Smith and Cothren 1999). It is the most popularly used fibre for clothing and for a host of other purposes since Vedic times in India.

### Sap-Sucking Pests

These insects are specialized with piercing and sucking mouthparts. They inject saliva into the tissues and suck back the phloem substance.

#### 1. Jassids, *Amrasca biguttula biguttula* (Ishida)

**Marks of Identification:** - The nymphs walked diagonally, face usually pale greenish, tegmina shining and wings hyaline iridescent. Forewings were yellowish green in colour.

**Symptoms of Damage** The invasion of hoppers on cotton causes brown blotches/spots on leaf surface that cup upwards. Under heavy damage, the 'hopper-burn' symptoms due to coalesced brown spots make the crop look very ugly with a burnt look.

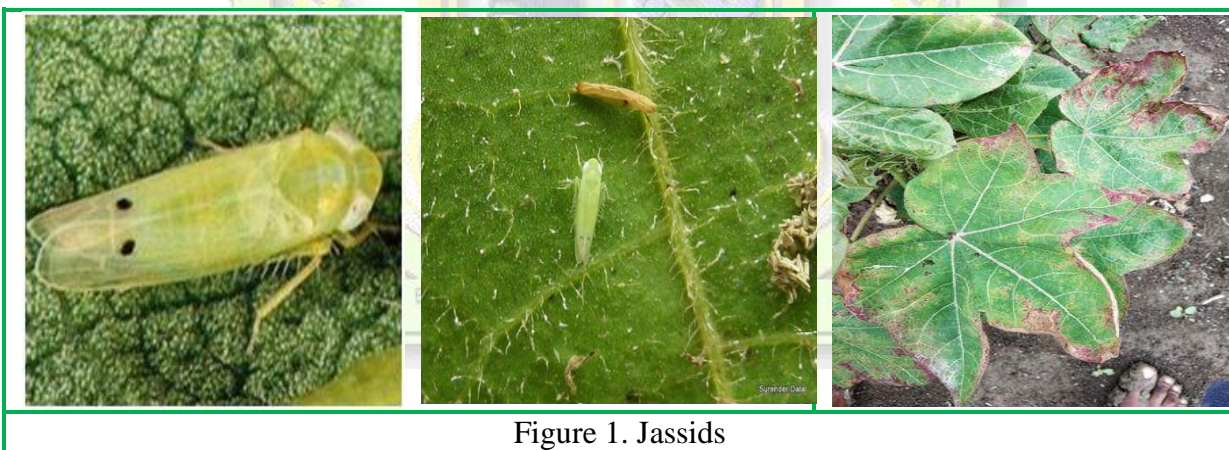


Figure 1. Jassids

#### 2. Whitefly, *Bemisia tabaci* (Gennadius)

**Marks of Identification:** - Appearance of chlorotic spots on the leaves and upward curling of leaves. Leaves become reddish, brittle. Premature leaf dropping, boll bursting and poor quality lint due to honey dew secretion.

**Symptoms of Damage** Whitefly infestation in cotton commences from the seedling stage and peaks up in the grand-growth stage (Husain and Trehan 1933). This cotton pest is well known to be the vector of cotton leaf curl virus (CLCuV) disease.



Figure 2. Whitefly

## Insect Pests Damaging Fruiting Bodies

### 1. Spiny Bollworm, *Earias insulana* (Boisduval), and Spotted Bollworms, *Earias vittella* (Fabricius)

**Marks of Identification** The caterpillars are stout, spindle-shaped, light brown, tinged with green and grey, distinctly pale on the dorsal line with dark brown or black spots at the base of the setae in the second and fifth abdominal segments. The adult moth, while at rest, keeps wings snugly folded. *E. insulana* moths have pale-green wing with silky sheen the abdomen and hindwing are silvery or creamy white in colour.

**Symptoms of Damage** The squares are fed through borehole that is blocked by excrement pellets. The damaged squares and young bolls are shed by plants. They bore on big unripe bolls from bottom.



Figure 3. Spotted Bollworms

### 2. Cotton Bollworm, *Helicoverpa armigera* Hubner

The moths emerge after first few showers and become active in the growing cotton crop that is at bud break stage. They lay eggs on growing squares and exploit all the fruiting forms intensely.



Figure 4. Cotton Bollworm

### 3. Pink Bollworm, *Pectinophora gossypiella* (Saunders)

**Marks of Identification** Second instar caterpillars have creamy-white body, dark brown head and paler thoracic shields. Third instar larvae have creamy-white body with two transverse dorsolateral pink streaks in each body segment.

**Symptoms of Damage:** - The pest feeds on the seeds affecting the growing lint. Immature fibres with poor technical property make the country lose valuable raw material for textile industry. Its discolouration due to excrements of the caterpillar as also due to microbial growth reduces market value of cotton. Larvae in older squares web the unopened petal rims and feed inside, causing 'rosetted' flowers.



Figure 5. Cotton Bollworm

### Management

<b>cultural practices</b>	Avoid monocropping. Growing of less preferred crops like greengram, blackgram, soyabean, castor, sorghum etc., along with the cotton as intercrop or border crop or alternate crop.
	Removal and destruction of crop residues to avoid carryover of the pest to the next season. Judicious use of nitrogenous fertilizers. Judicious water management for the crop
<b>Chemical control</b>	<b>Sap-Sucking Pests</b> ETL: Imidacloprid 17.8% SL 40 – 50 ml/acre or Azadirachtin 0.03% WSP or Buprofezin 25%SC 400 ml/acre or Diafenthiuron 50% WP 240 g/acre or Thiacloprid 21.7%SC 40-50 ml/acre or Flonicamid 50% WG 60 g/acre or Thiamethoxam 25% WG 40 g/acre.
	<b>Insect Pests Damaging Fruiting Bodies</b> Chlorantraniliprole 18.5% SC 60 ml/acre or Lufenuron 5.4% EC 240 ml/acre or Spinosad 45.0% SC 66-88ml/acre. Spraying any one of the insecticides viz., Emamectin benzoate 5% SG 76 – 88 g/acre or Diflubenzuron 25% WP 120-140 g/acre or Chlorantraniliprole 18.5% SC 60 ml /acre.

### References

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