

Identification and Management of Major Insect Pest of *Kharif* Pulses

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Pulse crops are affluent in protein and chief source of protein especially for vegetarian people in India. A number of insect pests attack on pulse crops causing considerable yield loss. Among them, thrips, whitefly, leafhopper, black aphid, pod borers, stem fly etc. are considered as the pests of major importance. These insects are-

1. Gram pod borer, *Helicoverpa armigera* (Hubner)

It is a cosmopolitan insect and distributed throughout the India

Mark of identification - Larvae with five pairs of prolegs on the third to sixth and tenth abdominal segments. fully grown larvae are 30-40 mm long. Male usually greenish-grey and female orange-brown; forewings with a line of 7-8 blackish spots on the margin and a broad, irregular, transverse brown band; hindwings are pale-straw colour with a broad dark-brown border.



Figure1. Gram pod borer

Symptom of Damage - Small larvae feed on foliage but larger larvae bore into flower bud, flower and pods and consume developing seed.

2. Legume Pod Borer, *Maruca vitrata* (Geyer)

It is a pantropical lepidopteran pest of legumes.

Marks of Identification Larvae are pale cream, with two rows of dark dots on their backs. The moths have brown front wings, with white patches. The hind wings are mostly white with a brown border.



Figure 2. Legume Pod Borer

Symptom of Damage The larva webs together the buds, flowers and leaves and feeds on them by remaining inside. It also bores into pods and feeds on the seeds (Yadav and Patel, 2015a).

3. Tur pod bug, *Clavigralla gibbosa* (Spinola)

It is widely distributed in Asia and Africa. In India, *Clavigralla spp.* are distributed in south, north and northeast parts (Romeis et al., 2000).



Figure 3. Tur pod bug

Marks of Identification Adult is greenish brown with spined pronotum and swollen femur. Nymphs are reddish in colour with lateral spines on prothorax and abdomen.

Symptom of Damage Nymphs and adults suck the sap from seeds, leaves and flowers and causing shriveling of pods and premature fall of leaves and flowers.

4. Plume Moth, *Exelastis atomosa*

It is known from Cape Verde, Ethiopia, Kenya, Madagascar, South Africa, Swaziland, Tanzania, India, Nepal and Iran

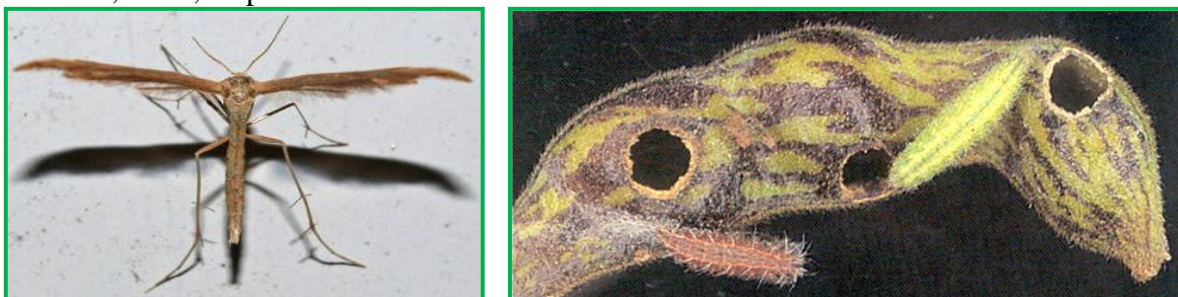


Figure 4. Plume Moth

Marks of Identification Eggs are green. Larvae are green or brown, spindle shaped and covered with spines and hair. Adult is small moth with yellowish brown wings, forewings are cut into two plumes and hind wings into three.

Symptom of Damage Larva thrusts its head inside the pod leaving the rest of body outside. Large round hole is present on each locule.

5. Pod Bug, *Riptortus pedestris*

It is widely distributed and found in India wherever pulses are grown.



Figure 5. Pod Bug

Marks of Identification Nymphs are dark brown look like ants. Adults are brownish black and hemispherical.

Symptom of Damage Nymphs and adults suck the sap from shoots and pods. Pods or seeds attacked by *Riptortus spp.* usually show spots and discoloration.

Management

Cultural practices	<ul style="list-style-type: none"> • Deep ploughing of fields during summer. <ul style="list-style-type: none"> • Soil solarization • Timely sowing should be done. <ul style="list-style-type: none"> • Field sanitation, rogueing. • Destroy the alternate host plants • Crop rotation with non-cereals. <ul style="list-style-type: none"> • Adopt ecological engineering by growing the attractant, repellent, and trap crops around the field bunds.
Chemical control	<p style="text-align: center;">1. Gram pod borer indoxacarb giving better results. Flubendiamide 39.35 SC and chlorantraniliprole 18.5SC are novel insecticides (Dey et al., 2012).</p> <p style="text-align: center;">2. Legume Pod Borer The recommended insecticides are flubendiamide 39.35 SC, emamectin benzoate 5 SG, indoxacarb 14.5 SC and spinosad 45 SC (Dey et al., 2012)</p> <p style="text-align: center;">3. Tur pod bug Spraying of recommended insecticides like spinosad 45 SC, indoxacarb 14.5 SC etc. is effective.</p> <p style="text-align: center;">4. Plume Moth, <i>Exelastis atomosa</i> Effective insecticides are spinosad and emamectin benzoate</p> <p style="text-align: center;">5. Pod Bug, <i>Riptortus pedestris</i> Spraying of recommended insecticides like dimethoate 30 EC, imidacloprid 17.8 SL, thiamethoxam 25 WG etc.</p>

References

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2. Swaminathan, R., Singh, K., & Nepalia, V. (2012). Insect-pests of green gram *Vigna radiata* (L.) Wilczek and their management. *Agricultural science*, 10, 197-222.