

HADDA BEETLE

T.N. *Epilachna dodecastigma*

Family: Coccinellidae

Order: Coleoptera

- Two species of hadda beetles, viz. *Epilachna dodecastigma* and *E. vigintioctopunctata*, attack different solanaceous vegetables like brinjal, tomato and potato

IDENTIFICATION

- *Epilachna vigintioctopunctata* beetles are deep red and usually have 7-14 black spots on each elytron whose tip is somewhat pointed
- *E. dodecastigma* are deep copper-coloured (reddish brown) and have 6 black spots on each elytron whose tip is more rounded
- Both species have yellowish grubs



The modified, hardened front wings of beetles are known as **Elytra**

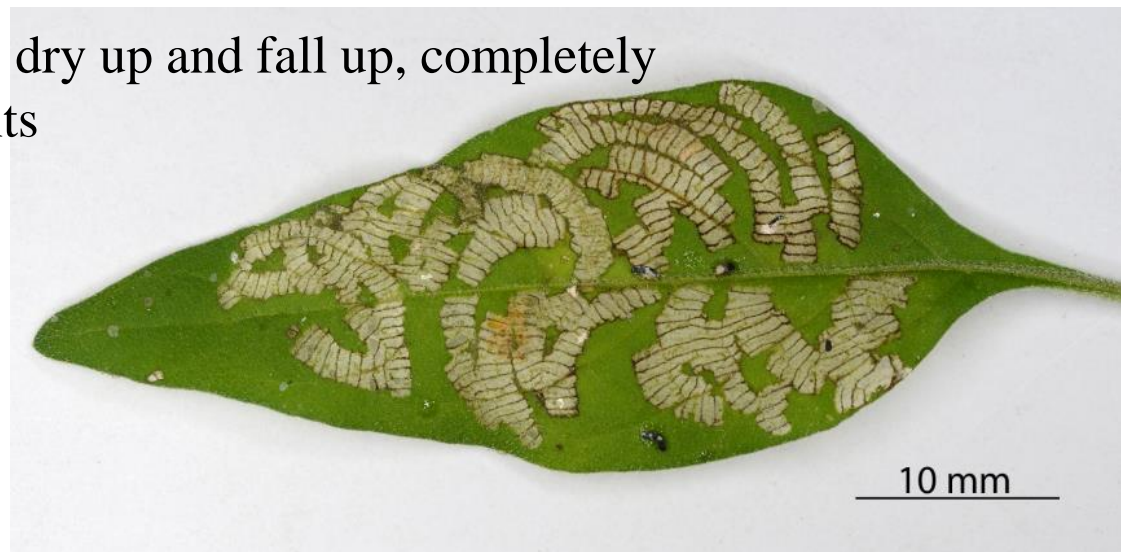
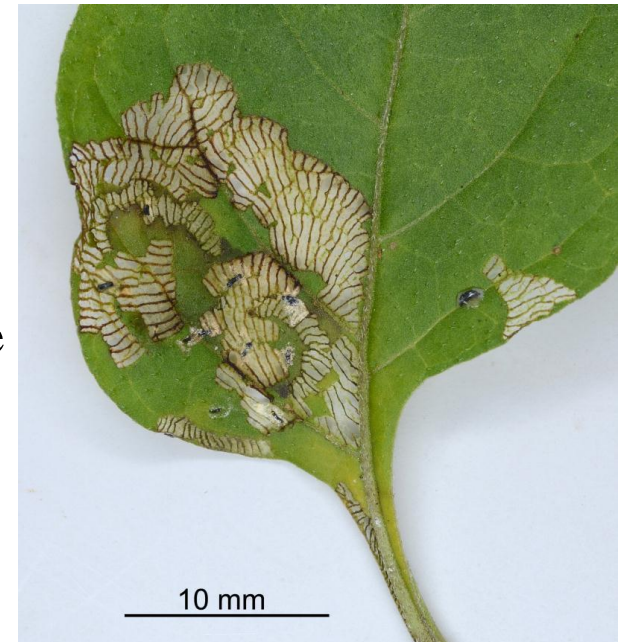
LIFE CYCLE

- The life cycle and the mode of damage of all species of hadda beetles are very similar.
- It passes the winter as a hibernating adult among heaps of dry plants or in cracks and crevices in the soil
- Active period is March-April
- Yellow Cigar-shape eggs, mostly on the underside of the leaves, in batches of 5-40 each
- A single female can lay up to 400 eggs in her life time.
- Grubs are full-grown in 3 weeks.
- Pupae darker and are found fixed on the leaves, stems and most commonly at the base of the plants.
- Pupal stage lasts for 2 weeks.
- 7 generations in a year.



DAMAGE

- In case of hadda beetles, both the adults and the grubs damage by feeding on the upper surface of the leaves
- Regular feeding of the leaf tissue, leaving parallel bands/stripes/lines of uneaten tissue/area of leaves in between
- Leaves turn brown, dry up and fall up, completely defoliating the plants



CONTROL

- Grow the resistant varieties
- Destruction of attacked plants or plant parts
- Hadda beetles can be controlled by using
- Malathion 50 EC or Azadirachtin 0.03% (2.5-5.0 L in 500 - 750 L of water)

BRINJAL FRUIT BORER

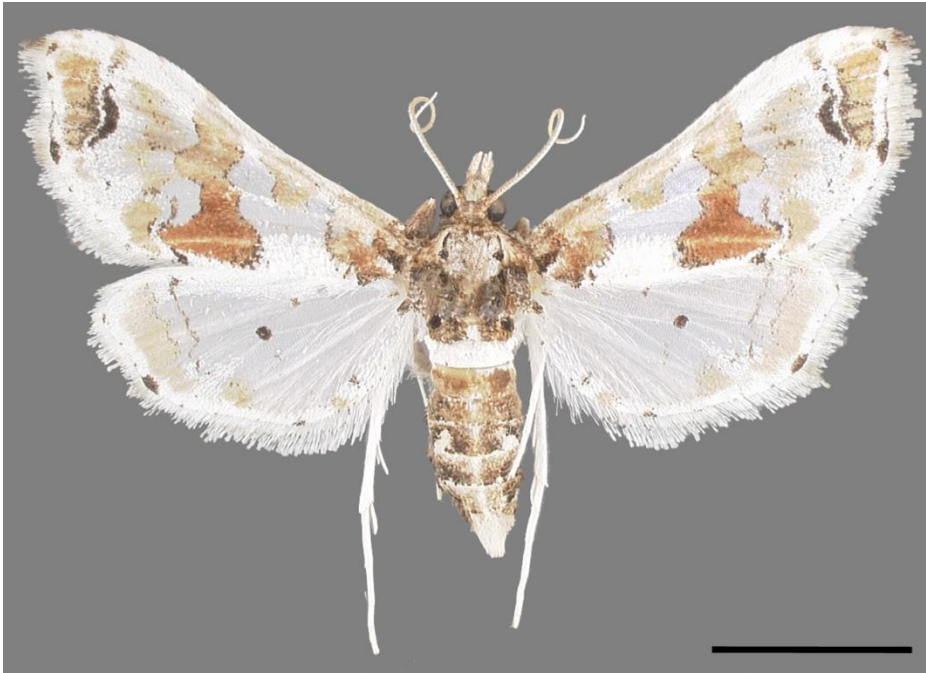
T.N. *Leucinodes orbonalis*

Family: Pyralidae

Order: Lepidoptera

IDENTIFICATION

- Caterpillars are creamy white, when young but become light pink when full-grown
- Moth is white with prominent orange to dark brown L-shaped or triangular spot on the dorsum of thorax and abdomen
- Both wings fringed



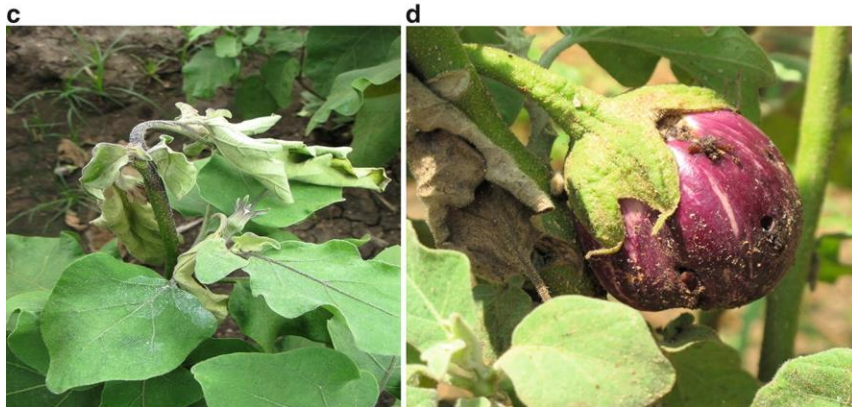
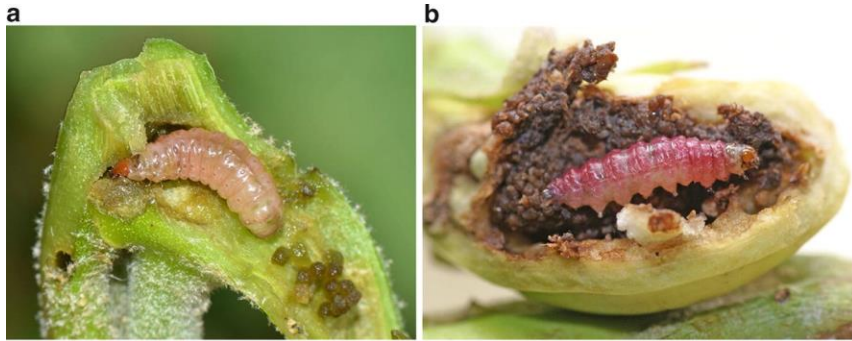
LIFE CYCLE

- Caterpillars hibernate in the winter and pupate early in the spring
- Moth lay 50-100 creamy white eggs, singly or in batches of 2-4 on the underside of leaves, flower buds, green stems or fruits
- Eggs hatch - 1 week
- Larvae – 5 stages and larvale period – 4 weeks
- Pupate in silken cocoon among the fallen leaves.
- Pupal stage lasts 3 weeks
- 5 generations in a year



DAMAGE

- Larvae bore into tender shoots near the growing points, into the flower or into the fruits
- When the terminal shoots are attacked, the growing points are killed
- Damage to the fruit particularly in the autumn is very severe



CONTROL

- Removal and destruction of damage fruits, fallen leaves and shoots
- Deep ploughing should be done to destroy different pest stages in the soil
- Avoid continuous sowing of brinjal crop
- *Bracon* spp. is an important parasitoid of this pest
- Spray the crop with Emamectin benzoate 200 gram/acre

BRINJAL STEM BORER

T.N. *Euzophera perticella*

Family: Pyralidae

Order: Lepidoptera

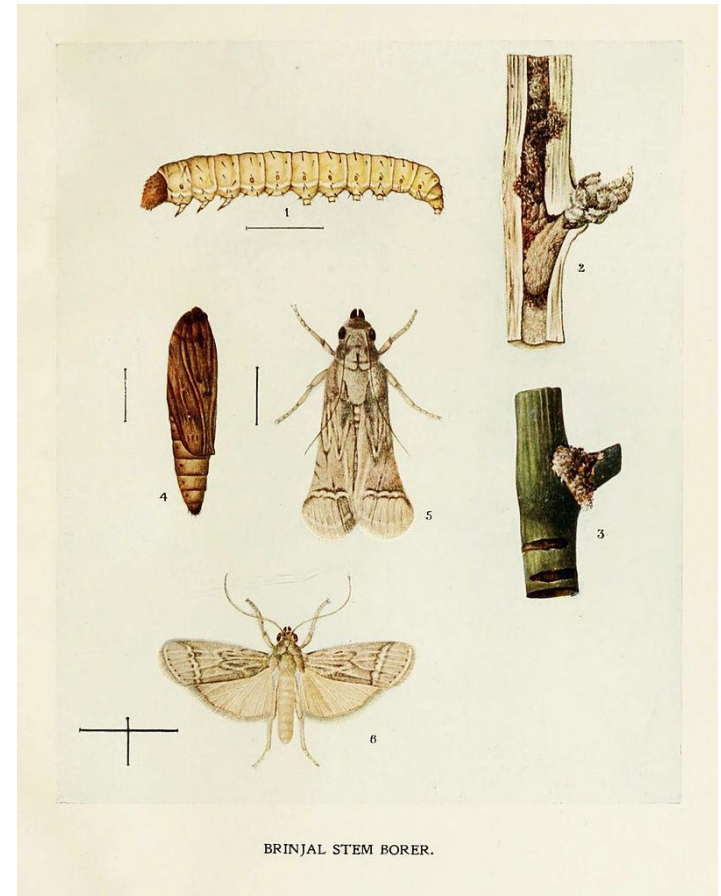
IDENTIFICATION

Larvae

- Larvae are creamy white and have a few bristly hairs and body tapers posteriorly

Adult

- Moths have pale-yellow abdomen.
- Head and the thorax are greyish
- Forewings are pale straw yellow
- Hind wings are whitish



LIFE CYCLE

- The pest is active from March-October
- Moths lay creamy colored eggs singly or in batches
- A single female lay 100-200 eggs in its life span of about a week
- Eggs hatch in 1 week
- Larvae pass through 4 or 5 stages and or full-fed in 8 weeks
- Pupal period – 1 week
- 5-6 generations in a year.

DAMAGE

- Young larvae feed for a few minutes on exposed plant parts (young leaves) and then bore into the shoot by making longitudinal tunnels
- Larvae feed exclusively in the main stem and have never been observed to bore into the fruits
- As a result of their attack in the field, plants are seen drying up
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CONTROL

- Attacked plants should be uprooted and burned
- When the attack of this borer is serious, avoid continuous sowing of brinjal crop
- Spray the crop with
 - Emamectin benzoate 200 gram/acre
 - Cypermethrin EC 200-250 ml/acre