

INSECT PESTS OF RICE

YELLOW AND WHITE STEM *BORERS:*



WHITE STEM *BORER*



YELLOW STEM *BORER*

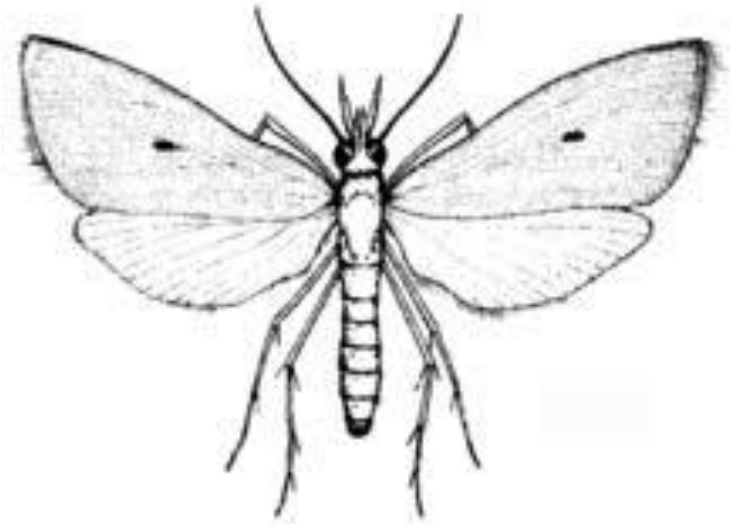
Taxonomy

- *T.N:* *Scirpophaga incertulas* (Yellow)

Scirpophaga innotata (White)

- *Family:* Pyralidae

- *Order:* Lepidoptera



Identification

➤ **Yellow stem borer:**

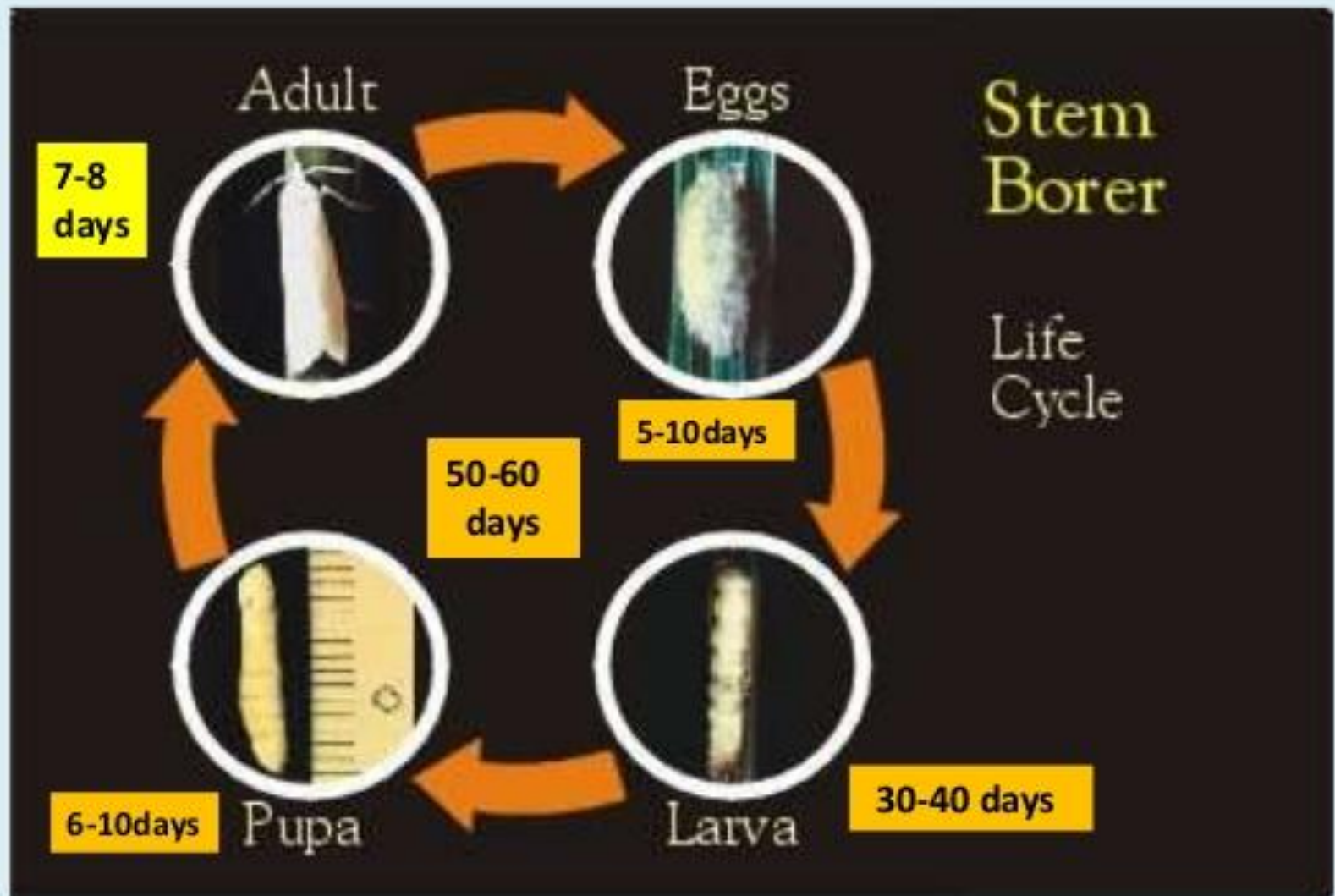
- Eggs are creamy white, covered with yellowish brown hair
- Larva dirty white
- Adult is of straw colored



➤ **White stem borers:**

- Eggs are creamy white
- Larva dirty white
- Adult colour is white with black spot on each for wing





Life Cycle

- The pest is active from **April to October**
- The female lays **50 eggs in clusters** on the underside of the leaves
- These eggs hatch in **one week**
- The larvae grow in **six instars** and are full grown in **4 weeks**
- Larvae pupate inside the attacked plant while the **pupal duration is 2 weeks**
- About **5-7 generations** in a year

Damage

- It is most destructive pest, causing **up to 90% loss**
- After hatching, **larvae bore into the stem from the growing points downwards**
- Attacked plant at early stages show “**Dead heart**” (drying up of the central shoot)
- While at later stage show “**White ears**” (ears without grains)



Symptoms of stem borer damage on rice



Control

- Removal and destruction of stubbles
- Collection of egg clusters
- Trapping the moths by the light traps
- Rotation of crop e.g. wheat following rice
- *Trichogramma* spp. is an effective egg parasitoid
- Carbofuran G 14 kg/acre or
- Carbosulfan G 8-12 kg/acre

RICE LEAF FOLDER



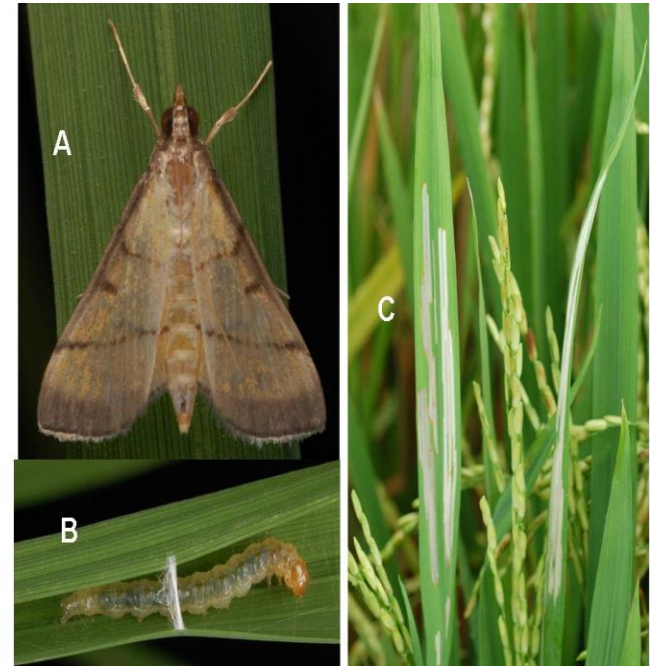
Taxonomy

- *T.N:* *Cnaphalocrocis medinalis* L.
- *Family:* Pyralidae
- *Order:* Lepidoptera

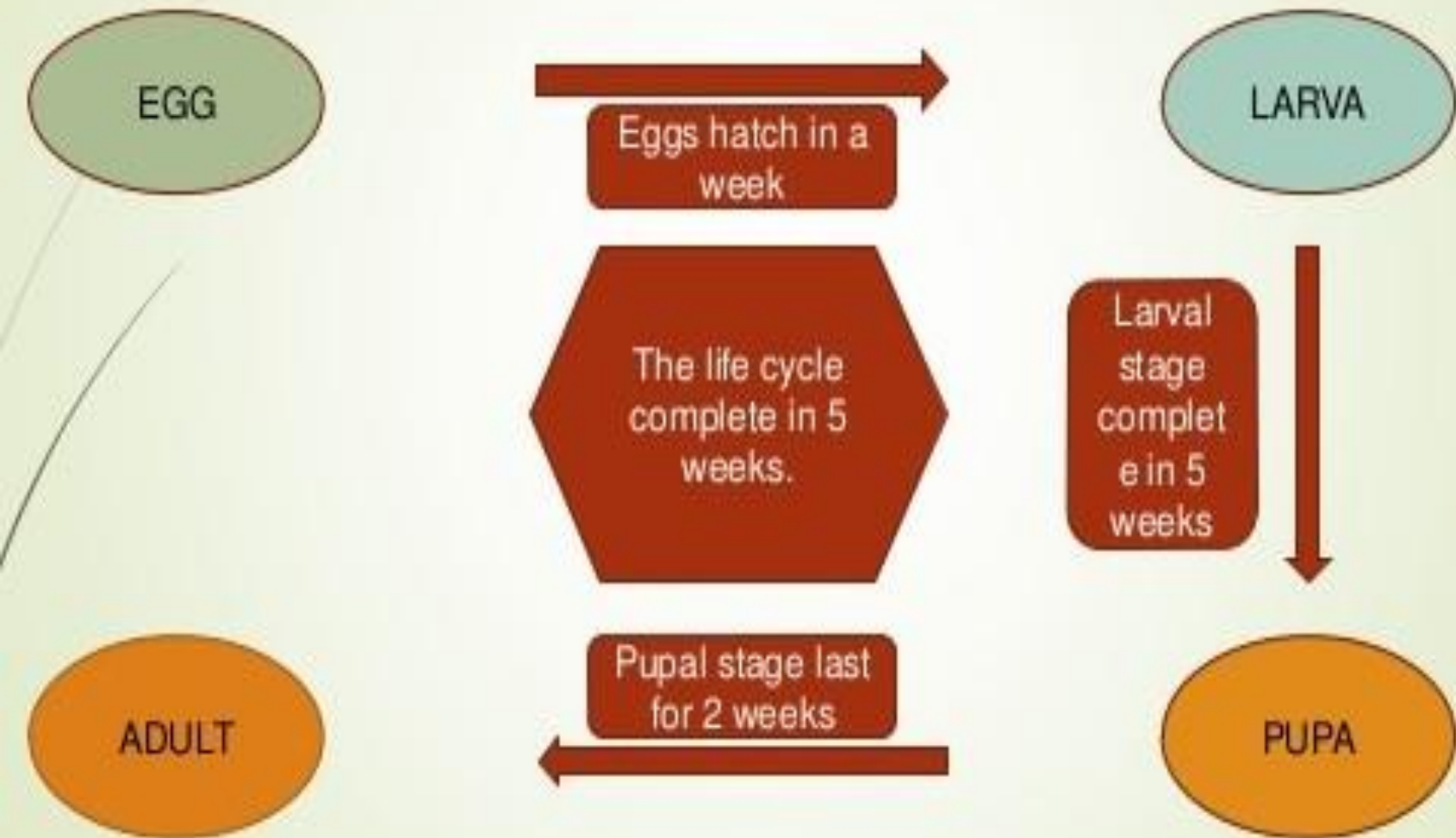


Identification

- Eggs are creamy white
- Larvae are light yellow or greenish in colour
- The moths are golden or yellowish brown
- Their wings have 2-3 wavy lines characterized by dark bands



Life cycle



Life Cycle

- The moths **rest on the undersurface of the leaves** during the day
- They lay **oval, cream-white eggs singly** or in pairs on the leaves and leaf-sheaths
- The eggs hatch in **one week**
- The larval stage is completed in **5 weeks**
- Pupation takes place in loose silken webs in between the leaves or in the leaf-sheaths
- The **pupal stage lasts for 2 weeks** during the active season
- The life cycle is completed in **5 weeks**

Damage

- Young larvae feed on tender leaves without folding them
- Older larvae fasten the longitudinal margins of leaves together with a silky substance and feed inside the fold by scraping the green matter
- The scrapped leaves become membranous, turn white and finally wither
- A single larva may damage a number of leaves as it migrates from one leaf to another
- As a result of the attack, photosynthetic activity of leaves is affected and the plants are predisposed to fungal and bacterial infections



Control

- Removal and destruction of weeds
- Trapping the moths by the light traps
- *Trichogramma* spp. is an effective egg parasitoid

Application of

- Cartap G 9 kg/acre
- Chlorpyrifos EC 1000 ml/acre

WHITE-BACKED PLANT HOPPER



Taxonomy

- *T.N:* *Sogatella furcifera*
- *Family:* Delphacidae
- *Order:* Homoptera



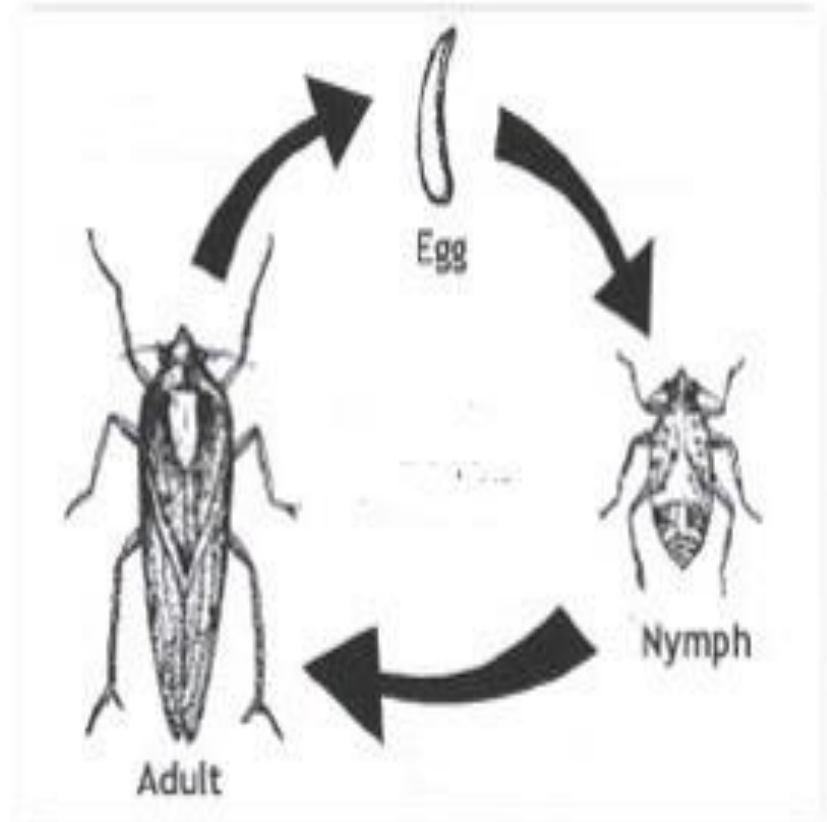
Identification

- Adult is a **wedge shaped insects**, having **straw color** with **white back**
- Nymph is **grayish white** which **turn to dark grey** when it is nears to maturity
- The adult and nymphs of this insects are **very active** and they can easily **jump from one leaf to another** on a slight disturbance



Life Cycle

- Adult female generally lays **100-150 eggs** on the leaf sheath
- After hatching, the nymphs feed on leaves and transformed into adults
- Life cycle is completed
in **3 weeks**
- Plant hopper females live for
about **2 weeks**
- There are **several**
generations in a year



Damage

- The adults and nymphs **suck cell sap** from the leaf surface and tend to **congregate on the leaf sheath** at the base of the plant
- The **leaves** of attacked plants **turn yellow** and later on **rust red**
- These symptoms start from the leaf tips and spread to the rest of the plant
- Various **brownish spots** also appears on the feeding sites
- Damaged plants finally **dry up without producing ears**
- This insect also **secretes honeydew** on which a **sooty mould** appears, imparting a smoky hue to the rice fields



Control

- A spacing of **20 × 15 cm** should be followed to avoid the rapid development of hopper population
- Alternate drying and wetting the field during peak infestation and **draining out the standing water** from the field 2-3 times checks the population of the hoppers to a large extent
- Grows resistant varieties

Spray

- Carbaryl D 5 kg/acre
- Imidacloprid SL 250 ml/acre