

## **4. Rice case worm: *Paraponyx stagnalis* {*Nymphula depunctalis* (Guenee) (Lepidoptera: Pyralidae)**

**Identification:** The adult moths are snowy white, about 6 mm long, and have a wing expanse of about 15 mm. The white wings are marked with a few light brown to black specks and two or three submarginal fulvous bands.

**Biology** The adults are nocturnal, hiding in rice fields during the day and laying eggs at night. Females oviposit 2.5 days after emergence, usually starting within 1-4 days. Eggs, are laid in batches of 10-20, one or two adjacent rows on the undersides of leaves floating on water. A single female lays an average of about 50 eggs in her lifetime. Mated females die 1 day after oviposition; unmated females can live up to 1 week. The egg is light yellow, circular, about 0.5 mm in diameter, and somewhat flattened with a smooth surface. Before it hatches, the egg turns darker with two purplish dots, which represent the eyes of the developing larva. Average incubation period is 4 day. The freshly hatched larva is pale cream, about 1.2 mm long and 0.2 mm across the head. The head is light yellow. The second instar larva is somewhat greenish. Five larval instars are completed in an average of 20 days. The full-grown larva is about 14 mm long and 1.6 mm in diameter. It is pale green with a semi transparent skin and light brown prothoracic shield and head. During the day, larvae float on the water; at night they climb plants to cut off leaves to make new cases, or feed on severed leaves on the water surface. The pupa, about 5.5 mm long and 1.5 mm wide, is cream colored when freshly formed, but turns silvery white towards moth emergence. The pupal period lasts for about one week. The adult usually emerges during the night through an opening at the upper end of the case. The life cycle is completed in one month.

**Occurrence:** The caseworm occurs only in rice fields with standing water.

**Nature of damage:** Larvae begin to feed shortly after hatching and start making leaf cases 2 days later. The freshly hatched larvae feed on the surface of the tender leaves, but later instars feed from within the case or on the surface of even the older leaves. Damage is caused by larvae feeding and cutting off the leaf tips for making leaf cases. In making a case, the larva moves to the tip of a young leaf, cuts the leaf blade on one side of the midrib, then secretes a silken thread to bind the two margins of the leaf blade into a tubular structure. The larva detaches this tube from the leaf by severing the other part of the leaf blade. The larva replaces these leaf casings with new ones after each molt and undergoes pupation within the leaf case.

**Symptoms of damage:** Damage is characterized by ladder-like appearance of the removed leaf tissue, leaving the upper epidermis somewhat papery. Damaged plants occur in patches in the field. Heavily infested plants may still recover in 1 month, but are already stunted. They produce fewer tillers and smaller panicles, and maturity is delayed. Yield loss occurs if, during the first 30 days after transplanting, other pests such as whorl maggot or stem borer infest the crop, reducing the plants' ability to recover.

**Diagnosis:**

- White moths flying in the field or on the water surface.
- Cases found at the base of the plant.
- White Grazing appearance of the field .
- If the pest attacks immediately after transplanting, then plants may dry.