Pest of Sugarcane (Pyrilla perpusilla): Distribution, Life cycle, Nature of damage and Control measures

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Scientific classification
Kingdom: Animalia
Phylum: Arthropoda
Class: Insecta
Order: Hemiptera
Family: Lophopidae
Genus: Pyrilla

Distribution

Pyrilla perpusilla commonly known as Sugarcane plant hopper is mainly found is Asian countries like Afghanistan, Bangladesh, Burma, Cambodia, India, Indonesia, Nepal, Pakistan, South China, Sri Lanka, Thailand, and Vietnam. The original host of P. perpusilla is not known but it has been recorded feeding and reproducing on a wide range of species of Gramineae, Leguminae and Moraceae families.

Identification of Pyrilla perpusilla

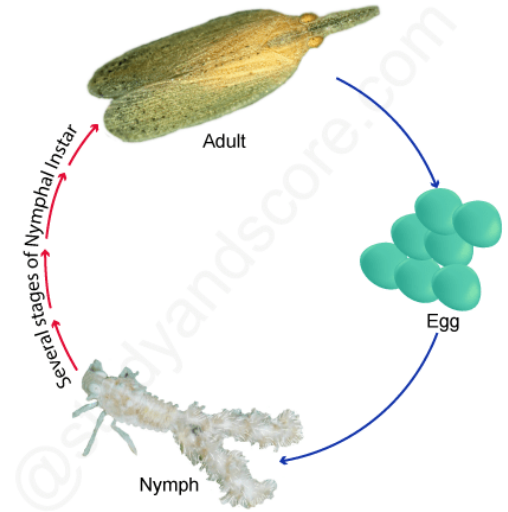
Adult Pyrilla perpusilla is a pale tawny-yellow, soft-bodied insect with head prominently drawn forward to form a snout. The wingspan of males is 16 - 18 mm and 19 - 21 mm for females.

Females have cretaceous threads called anal pads, arranged as bundles on terminal segment. The fore wings are semi-opaque in nature, with yellow-brown color. The

fore wings are lightly covered with minute black spots. Both adults and nymphs are very active and suck sap from the leaves of sugarcane. On the slightest disturbance, they jump from leaf to leaf.

Lifecycle or Pyrilla perpusilla

Egg: Females lay eggs on the lower, shady and concealed side of the leaves near the midrib. Eggs are laid in clusters of 30-40 in number in rows of 4-5. They are covered by pale waxy material. Eggs are oval-shaped, pale whitish to bluish green when laid and turn brown just before hatching. A female lays 600 - 800 eggs in her lifetime.



LIFE CYCLE OF SUGARCANE PEST (*Pyrilla perpusilla*)

Nymph: Nymph passes through five nymphal instar stages to reach adult stage. The following table gives the information about the features of each instar nymph

	Body Size	Body Color	Eyes	Duration
I Instar Nymph	**L-1.4 mm B-0.6 mm**	**Greenish white**	**Dark red**	**7 Days**
II Instar Nymph	**L-2.1 mm B-0.9 mm**	**Pale white to brown**	**White and translucent with black spot**	**5 Days**
III Instar Nymph	**L-2.7 mm B-1.2 mm**	**Pale brown**	**Grey green**	**5 Days**

	Body Size	Body Color	Eyes	Duration
IV Instar Nymph	**L-3.3 mm B-1.6 mm**	**Dark brown**	**Watery green**	**6 Days**
V Instar Nymph	**L-4.9 mm B-2.3 mm**	**Pale to dark brown**	**Water green**	**9 Days**

- First instar nymph has Whitish thorax with a thin transverse pale brown band on the posterior end. Last abdominal segment is green with whitish threads.
- Second instar nymph has dark brown strips along the lateral margin
- Third instar nymph has a thoracic region with one dark brown dorsal patch on either side. Abdominal segments are pale blue on dorsal side and pale yellow on ventral side.
- Abdominal segments of fourth instar nymph have a dark brown band on the dorsal surface and pale green ventral surface
- Abdominal segments of fifth instar nymph have a dark brown transverse band on the dorsal surface and pale white ventral surface. Anal tufts are buff colored

Adult: Just after molting, the adults are white colored but later their body turns straw colored, eyes turn pale green and head develops a snout with a black spot at the posterior side. The anterior area has numerous minute black spots.

Female measures 10 mm length and 2.2 mm breadth whereas male measures 8 mm length and 3.5 mm breadth. Adult females are ready to mate 2 days after emergence from the 5th nymphal instar. Female lays eggs mainly during the day.

Damage caused by Pyrilla perpusilla

- Pyrilla is a major pest in Bihar, Delhi, Haryana, Punjab, Madhya Pradesh, Uttar Pradesh, Maharashtra, Gujrat, and Orissa. In the recent years, its incidence has increased in peninsular India. Leaves turn yellowish white and wither away due to heavy infestation.
- This infection causes great loss to the yield to poor growth of seed sets and difficulties in milling cane from affected plants.

- Sucking of sap from the leaves weakens the plant and reduces the sucrose contents by up to 50%.
- The hoppers exude a sweet sticky fluid called "honeydew" which promotes a quick growth of fungus *Capnodium* sps. Completely coverage of leaves by the sooty mold affects photosynthesis.

Control measures of Pyrilla perpusilla

- The Burning of trash helps in destroying unhatched eggs and overwintering nymphs.
- During pre-monsoon, dusting the fields with HCH 5-10% at 20-30 kg/ha or methyl parathion (2%) at 12.5 kg/ha with a rotary duster can be helpful.
- During Pyrilla epidemics aerial sprayings of the following insecticides must be done
  ***** Fenthion (560 ml/ha),
  ***** Malathion (500 ml/ha),
  ***** Phosphomidon (250-300 ml/ha)
  ***** Monocrotophos (1250 ml/ha),
  ***** Endosulphan (750 ml/ha)