IPM Package of Practices for the management of Paddy Gall Midge (*Orseolia oryzae)*

Rice is the principle food crop in India. Rice crop is prone to stress throughout the crop growth period due to onslaught from different pests such as insects, nematodes, diseases, weeds and rats. Rice gall midge is an insect-pest of Paddy crop, causes a tubular gall at the base of tillers, causing elongation of leaf sheaths called onion leaf or silver shoot.

The Rice gall midge is found in irrigated or rainfed wetland environments during the tillering stage of the rice crop. It is also common in upland and deepwater rice. The adults are nocturnal and can easily be collected using light traps. During the dry season, the insect remains dormant in the pupal stage. They become active again when the buds start growing after the rains. The population density of the Rice gall midge is favored mainly by cloudy or rainy weather, cultivation of high-tillering varieties, intensive management practices, and low parasitization.

Major states affected: Tamil Nadu, Kerala, Karnataka and Andhra Pradesh

Damage Symptoms:

The symptom appears from the nursery to the flowering stage.

- Formation of a hollow cavity or tubular gall at the base of the infested tiller. The gall formed is a silvery white hollow tube, 1 cm wide and 10−30 cm long.
- Affected tiller inhibits growth of leaves and fails to produce panicles
- Deformed, wilted, and rolled leaf
- Elongation of leaf sheaths, also called onion leaf or silvershoot. Presence of silver shoot or “onion leaf” in the place of central leaf is the prominent symptom.

The plant stunting and leaf deformity, wilting and rolling are also symptoms observed on plants caused by drought, potassium deficiency, salinity, and ragged stunt

virus, orange leaf virus and tungro virus diseases. The rolled leaves can also be associated with the symptom caused by rice thrips. To confirm cause of problem, check for presence of insect. Particularly, elongate-tubular eggs and maggot-like larva feeding inside developing buds.

Presence of onion or silver shoot

Presence of tubular galls

Identification of pest :

Eggs : Reddish, elongate, tubular eggs just near the ligule of the leaf blade

Larva : Maggot is pale to red colour feeds inside the gall.

Pupa : Pupates at the base of the gall and moves to tip of the gall.

Adult : Adult is orange coloured mosquito like fly

Egg

Maggot

Adult

IPM Package of Practices

Pre-sowing stage:

- Precautionary measures to be followed before plating of the crop.
- Practice early deep ploughing to avoid the ratoon of previous crop.
- Maintain the field bunds clean and hygiene.
- Application of Neem cake @ 100 kg during the time of last ploughing.

Sowing and post sowing cultural and mechanical control:

- Adopt better sowing method, clean cultivation and mechanical measures.
- Timely management measures at sowing stage reduce Gall midge damage to greater extent.
- Early planting is highly recommended to reduce the incidence of gall midge.
- Planting of early maturing resistant/tolerant varieties may help to avoid high infestations.
- Application of potash fertilizer at the recommended optimum dose based on the duration and variety of the crop used at the time of sowing.
- Clean cultivation by removing weeds which serves as alternate host of Gall midge.
- Dipping germinated seed in 0.2% chlorpyrifos solution for 3 hours before sowing give protection up to 30 days.

Seedling (Nursery) to Vegetative stage:

- Follow application of Neem based pesticide, bio pesticides, botanicals and bioagents; minimize use of chemical pesticides.
- Avoid staggered planting (complete transplanting in an area within 3 weeks) to reduce infestation.
- In transplanted crop the root of seedlings may be dipped in 0.02% chlorpyrifos suspension for 12 hours prior to planting.

- Most vulnerable stage, very crucial period for management. The Gall midge adults are found to be active between dusk time. Hence, install Light traps @ 1 No./acre between 06.00 P.M. to10.00 P.M. to attract gall midge adults.
- Draining out water from Paddy fields for 5-7 days will drastically bring down Gall midge population.
- Collect and destroy infested crop debris and maintain field sanitation.
- Spray 10% Neem leaf extract/ 5% NSKE/ 1% Neem oil/ 0.3% Fish oil resin soap/ 3% Dasagavya/ 3% Herbal plant extracts to bring down the pest population.
- Release of *Platygaster oryzae* parasitised galls at 1/10 m^2 on 10 days after transplanting (DAT).
- Use only moderate amounts of nitrogen and potassium fertilizers and adopt split applications to reduce population growth rates.
- If incidence is more than 10%, any of the recommended synthetic pesticides. viz., Fipronil 5% SC @ 1-1.5 kg/ha/ Fipronil 0.3% GR @ 16 kg-25 Kg/ha/ Thiamethoxam 25% WG @ 100 g/ha.

Note: Indiscriminate use of chemical pesticides will lead to gall midge pest resistance, resurgence and create imbalance in pest defender population which will result in increased pest population/ damage.