Reference: - eagri.org

PESTS OF RICE

S.No.	Name of Pest	Scientific Name
1	Thrips	Stenchaetothrips biformis
2	Green Leafhopper	Nephotettix virescens
3	Brown Plant Hopper	Nilaparvata Lugens
4	Yellow stem borer	Scripophaga incertulas
5	Gall midge	Orseolia oryzae
6	White Backed Plant Hopper	Sogatella furcifera
7	Rice Earhead Bug	Leptocorisa acuta
8	Mealy Bug	Brevennia rehi
9	Rice Black Bug	Scotinophora lurida

1.**Thrips** (Stenchaetothrips *biformis)*

Host range: *Echinochloa* sp

Damage symptoms

- Both nymphs and adults lacerate the tender leaves and suck the plant sap, causing yellow or silvery streaks on the leaves of young seedlings.
- Terminal rolling and drying of leaves from tip to base is the typical symptom of attack.

Management:

- Submerge infected crops intermittently for 1-2 days.
- There are identified cultivars with known resistance to the rice thrips.
- Grow resistant cultivars like PTB 12, PTB 20, PT 321, H 4

2. Green leafhopper: Nephotettix virescens

Host range: Rice, millets, grasses

Damage symptoms

- Both nymphs and adults desap the leaves and cause "hopper burn" due to heavy infestation.
- Yellowing of leaves from tip downwards is the typical symptom caused by this pest.
- it is more important as a vector forrice tungro virus, rice yellow dwarf and transitory yellowing diseases

Management

- The most effective means of GLH management is to use GLH-resistant and tungro-resistant varieties like IR 50, IR 54, IR 64, CR 1009, PY 3, Co 46 and white ponni .
- Apply neem cake @ 12.5 kg/20 cent nursery as basal dose.
- Transplanting older seedlings (>3 weeks) reduces viral disease susceptibility transmitted by leafhoppers.

3.Brown Plant Hopper (Nilaparvata *lugens)*

Host range: Rice, sugarcane, grasses

Damage symptoms

- Nymphs and adults congregate at the base of the plant above the water level and suck the sap from the tillers.
- The affected plant dries up and gives a scorched appearance called "hopper burn".
- Circular patches of drying and lodging of matured plants are typical symptoms caused by this pest.
- It is the vector of grassy stunt, ragged stunt and wilted stunt diseases.

ETL:8-10 Nos./hill or 20 Nos./hill when spider is present at 1 No./hil

Management

- Avoid staggered planting and destroy ratoons of the previous rice crops in your village
- Use a balanced dose of fertilizer. Apply Urea, DAP and MOP at the rate of 6.4 Kg, 2.2 Kg and 1.7 Kg per Katha respectively
- Avoid dense planting by planting rice seedlings at 20cm X 20cm apart

4.Yellow stem borer: *Scirpophaga incertulas* (Pyraustidae: Lepidoptera)

Host range: Rice

Damage and symptoms

- Larva feeds on the stem and causes drying of the central shoot known as "dead heart" in the young seedlings, and drying of the panicle in grown up plant called "white ear".
- Damage ranges from 30-80%.

ETL

- 2 egg masses/ m2
- 10% dead hearts - Vegetative stage
- 2% white ear - Flowering stage

Management

- Grow resistant varieties *viz.,* Ratna, Jaya, TKM 6, IR 20 and IR 26, Sayasree, Saket, IET 3127, IET 2812, MTU 5849, PTB 12, PTB 20, PT 321, H 4
- Release the egg parasitoid, *Trichogramma japonicum* twiceon 30 and 37 DAT @ 5 cc/ha/release.
- Apply *Bacillus thuringiensis* var *kurstaki* and neem seed kernel extract in the combination of 2.5 g/L and 1% to reduce the oviposition by the stem borer.

5. Gall midge: *Orseolia oryzae* (Cecidomyiidae: Diptera)

Host range: Rice, wild species of Oryza and grasses like Paspalum scrobiculatum, Panicum spp, Cyanodan dactylon and Eleucine indica.

Damage symptoms:

The maggot feeds at the base of the growing shoot causing formation of a tube like gall similar to "onion needle" or "silver-shoot".

ETL: 10% silver shoots

Management

- Early ploughing

- Harvest the crop and plough immediately
- Remove the alternate hosts and adjust the time of planting (early)
- Optimum recommendation of potash fertilizer

6. White Backed Plant Hopper (*Sogatella furcifera*)

Host range -Rice, maize, millets, sugarcane, grasses

Damage symptoms

- Both nymphs and adults suck the sap and cause stunted growth and *"Hopper Burn"* leading to yield loss.
- *"Hopper burn"* is caused in irregular patches.

ETL: 1 hopper/ tiller in the absence of predatory spider and 2 hoppers /tiller when spider is present at 1/hill.

Management

- Avoid use of excessive nitrogenous fertilizers
- Control irrigation by intermittent draining
- Synchronous planting within 3 weeks of staggering and maintaining a free-rice period could also decrease the build-up of Brown plant hopper.
- There are varieties released by IRRI, which contain genes for White backed plant hopper resistance, like IR26, IR64, IR36, IR56, and IR72.
- Avoid close planting and provide 30 cm rogue spacing at every 2.5 to 3.0 m to reduce the pest incidence.

7.Rice earhead bug (*Leptocorisa acuta)*

Host range: Rice, Millets

Damage symptoms

- Both nymphs and adults suck the sap from individual grains at milky stage.
- Affected grains become chaffy with black spots at the site of feeding puncture.
- Yield loss may be 10- 40%. Obnoxious odour emanates on disturbing the bugs in the field.

ETL: 5 bugs/100 earheads at flowering and 16 bugs/100 earheads from milky stage to grain maturity

Management

Dust any one of the following at 25 kg/ha twice, the first during flowering and second a week later:

- Quinalphos 1.5 D
- Methyl parathion 2% DP
- KKM 10 D (The new KKM dust formulation consists of 10% of *Acorus calamus* rhizome powder and 90% of flash which is a waste product from Thermal Power Station)

Spray any one of the following twice as above

- Malathion 50 EC 500 ml/ha
- Neem seed kernel extract 5% 25 kg/ha
- Notchi or Ipomoea or Prosopis leaf extract 10%

8.Mealy bug (*Brevennia rehi*)

Host range: Rice, graminaceous weeds

Damage symptoms

- Plants become weak, yellowish and stunted.
- Presence of white waxy fluff in leaf sheath is a typical symptom of damage.

Management

- Prune out light infestations or dab insects with a Q-tip dipped in rubbing alcohol.
- Do not over water or overfertilize — mealybugs are attracted to plants with high nitrogen levels and soft growth.
- Commercially available beneficial insects, such as ladybugs, lacewing and the Mealybug Destroyer (Cryptolaemus montrouzieri), are important natural predators of this pest.
- Use the Bug Blaster to hose off plants with a strong stream of water and reduce pest numbers. Washing foliage regularly with a leaf shine — made from neem oil — will help discourage future infestations.

9. Rice black bug (*Scotinophora lurida)*

Host range: Rice, millets

Damage symptoms

- Both nymphs and adults suck plant sap from the culm during tillering to flowering at the base of the plant
- During tillering stage, it causes drying up of central shoot (dead heart), stunted growth and reduced tillers.
- During reproductive stage, it affects the panicle development and causes chaffy grains (white ears).

ETL: 10% damage at tillering stage or 5 bugs / hill

Management

- Keep the field free from weeds and grasses.
- Drain the excess water from the field.
- Set up light traps to attract and kill large number of bugs.
- Conserve the predators *viz.,* spiders, coccinellids and wasps to check the pest.
- Ducks can be allowed in the field to pick up the bugs
- Spray NSKE 5% or monocrotophos 36 SL @ 1000 ml/ha or acephate 75 SP @ 625 g per ha for effective pest suppression