Plant hopper

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Rice Fact Sheet

Common name
Brown plant hopper, White backed plant hopper

Scientific name
Two species of plant hopper infest rice. These are the brown plant hopper (BPH), *Nilaparvata lugens* (Stal); and the whitebacked plant hopper (WBH), *Sogatella furcifera* (Horvath).

What it does
High populations of plant hoppers cause leaves to initially turn orange-yellow before becoming brown and dry and this is a condition called hopper burn that kills the plant. Brown plant hoppers can also transmit ragged stunt and grassy stunt diseases. Neither disease can be cured.

Adult brown plant hopper

Why and where it occurs
plant hoppers can be a problem in rainfed and irrigated wetland environments, and in areas with continuous submerged conditions in the field, high shade and humidity.

Closed canopy of the rice plants, densely seeded crops, excessive use of nitrogen, and early season insecticide spraying also favors insect development.

Hopper burn or wilting of plants caused by plant hopper

How to identify
Check for the presence of insect:
- Crescent-shaped white eggs inserted into the midrib or leaf sheath
- White to brown nymphs
- Brown or white adults feeding near the base of tillers
- Presence of black mould at base of plant

Check the field for:
- hopper burn or yellowing, browning and drying of plant
- Ovipositional marks exposing the plant to fungal and bacterial infections
- Presence of honeydew and sooty molds in the bases of areas infected
- Plants with ragged stunt or grassy stunt virus disease

Plant hopper

Hopper burn is similar to the feeding damage or "bugburn" caused by the rice black bug. To confirm hopper burn caused by plant hoppers, check for the presence of sooty molds at the base of the plant.

How to manage
Outbreaks result from pesticides destroying natural enemies (BPH eggs hatch unchecked, and surviving BPH quickly build-up populations to damaging levels), or when longwinded plant hoppers are being carried in by the wind.

To prevent outbreaks of plant hopper:

- Remove weeds from the field and surrounding areas.
- Avoid indiscriminate use of insecticide, which destroys natural enemies.
- Use a resistant variety. Contact your local agriculture office for an up-to-date list of available varieties.
- Critical numbers: At a density of 1 BPH/stem or less there is still time to act in case the numbers increase.
- Look for BPH daily in the seedbed, or weekly in the field, on stems and the water surface. Check each side of the seed bed (or direct-seeded fields). For older rice plants, grasp the plant, bend it over slightly, and gently tap it near the base to see if plant hoppers fall onto the water surface. For transplanted rice look at bases of 10 to 20 hills as you cross the field diagonally. There is no need to scout for BPH or WBPH beyond the milk stage.

- Use light traps (e.g., an electric bulb or kerosene lamp near a light colored wall or over a pan of water) at night when rice is prone to plant hopper attack. Do not place lights near seedbeds or fields. If the light trap is inundated with hundreds of BPH, it's a signal to check your seedbed or field immediately; then scout every day for the next few weeks. If farmers monitor on a daily basis anyway, then a light trap is unnecessary.
- Alley planting: Leave a row after every 8 rows, while transplanting will help in better spraying of insecticides and regular monitoring of the crop.
- Spray pymetrozine 50% WG @ 0.6g/L of water, buprofezin 15% + acephate 35% w/w WP @ 2.5g/L of water, dinotefuran 20% SG @1g/3L of water, flonicamid 50% WG @ 1g/L of water.

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