

What is a Planthopper?

Planthoppers are tiny brown-gray insects (0.1 - 0.4 cm long). Long-winged forms of brown planthoppers (BPH), *Nilaparvata lugens* (Stål), and white backed planthoppers (WBPH), *Sogatella furcifera* (Horvarth) develop when food is unavailable, or when they are crowded. Long-winged adults can disperse for hundreds of kilometers.

Why control Planthoppers?

High populations of planthoppers cause leaves to initially turn orange-yellow before becoming brown and drying. This condition, called hopperburn, kills the plant. BPH can also transmit ragged stunt and grassy stunt diseases. Neither disease can be cured.

How to control Planthoppers?

Outbreaks result when pesticides destroy natural enemies (BPH eggs hatch unchecked, and surviving BPH quickly build-up populations to damaging levels), or when long-winged planthoppers are carried in by the wind.

Prevention

- Remove weeds from the field and surrounding areas.
- Avoid indiscriminate insecticide use, which destroys natural enemies.
- Use a resistant variety.
- 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 planthoppers 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 planthopper 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.

For more information:

- For more information on planthoppers, visit the IPM materials in the Rice Knowledge Bank at: <http://www.knowledgebank.irri.org>.
- To diagnose problems in the field visit <http://www.knowledgebank.irri.org/ricedoctor>.



Adult brown planthoppers on rice leaf and hopperburn caused by planthoppers in the rice field.

Control

Mechanical & physical measures:

- Flood the seedbed, for a day, so that only the tips of seedlings are exposed will control BPH.
- Sweep small seedbeds with a net to remove some BPH (but not eggs), particularly from dry seed beds. At high BPH densities, sweeping will not remove sufficient numbers of BPH from the base of the plant.

Biological control:

- If natural enemies out-number BPH the risk of hopperburn is low. Even rice already damaged by hopperburn should not be treated with insecticides if natural enemies out-number BPH. Natural enemies of BPH include water striders, mirid bugs, spiders, and various egg parasitoids.

Chemical control: Only apply an insecticide to the seedbed for BPH or WBPH if all of these conditions are met:

- an average of more than 1 planthopper per stem,
- on average, more planthoppers than natural enemies,
- flooding the seedbed is not an option.

The benefits of an insecticide must always be weighed against the risks. Before selecting a pesticide contact a crop protection specialist for guidance specific to your situation. Always read the instructions and always use adequate safety procedures.

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