Rice Blast

Rice Science for a Better World

rice fact sheets

What is a rice blast?

Rice blast is one of the most important diseases found in rice. It is caused by the fungus (*Magnaporthe grisea* (Hebert) Barr) and can affect the leaf, culm, nodes and neck of the panicle. With blast, leaf lesions are distinctively grey in the center, exhibit dark borders and are diamond-shaped (large in the middle and tapering to ends). Leaf symptoms are similar to Bipolaris leaf spot (also known as brown spot). When blast attacks nodes on the stem, it can be confused with rat damage (although rats are associated with physical damage). Panicles affected by neck rot can be confused with stemborer damage (except with blast, the panicle is still connected to the stem).

Why should rice blast be controlled?

Blast can be a major disease of both lowland and upland rice, especially under blast-favorable conditions such as high relative humidity (e.g. cloudy skies and frequent rain), extended duration of leaf wetness, and high levels of fertility. When present, it can cause very severe losses—in rare, but extreme cases up to 100%.

How is rice blast controlled?

Cultural Practices

- Planting resistant varieties against the rice blast is the most practical and economical way of controlling rice blast.
- Early sowing of crops is advisable as later sown crops can be infected by inoculum coming from earlier sown neighboring crops.
- Use balanced rates of nutrition. Excessive fertilizer use (especially nitrogen) can promote excessive luxuriant crop growth which increases the relative humidity and leaf wetness of the crop canopy. This can lead to increased infection. Split applications of nitrogen—based on the actual requirements of the crop—are recommended to reduce the disease.
- Inter-planting of resistant and susceptible varieties can reduce infection on the susceptible variety. This was successfully shown in southern China where four rows of resistant varieties are planted for each row of susceptible varieties.
- High silica in the plant helps prevent blast. Soils low in plant-available silicon can be amended with calcium silicate slag; although such applications may not be economic.

Chemical Control

Chemicals are rarely used to control blast. Scout the field for the presence of blast. Check 20 hills while walking diagonally across a field. Direct control may be required if there are more than 30% of plants infected

The choice of fungicide depends on many factors such as the application equipment available, cost of the insecticide, experience of the applicator, or presence of fish. The benefits of using an insecticide must be weighed against the risks to health and the environment. Before using a pesticide, contact a crop protection specialist for suggestions, guidance, and warnings specific to your situation.

Severely damaged panicle.

Leaves infected by blast.

For more information:

For more information on Rice and Diseases, visit the Rice Knowledge Bank at http://www.knowledgebank.irri.org.
For an overall view of crop management practices, visit http://www.knowledgebank.irri.org/tropRice.
To diagnose problems in the field, visit http://www.knowledgebank.irri.org/ricedoctor.

Developed with input from C Vera Cruz, N Castilla, T Mew and MA Bell.

IRRI International Rice Research Institute