Rice Blast Disease
(Pyricularia grisea)

Distribution:
Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chattisgarh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Punjab, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal are the states where the disease was found serious.

The fungus Magnaporthe grisea (Hebert) Barr (Anamorph: Pyricularia grisea (Cooke) Sacc) is the causal agent of rice blast disease. It causes disease at seedling and adult stages on the leaves, nodes and panicles. On leaves, lesions are typically spindle-shaped; wide in the center and pointed toward either end. Large lesions usually develop a diamond shape with grayish center and brown margin.

Under favorable conditions, lesions on the leaves expand rapidly and tend to coalesce, leading to complete necrosis of infected leaves giving a burnt appearance from a distance. Hence the name rice blast given to this disease.

The node region of the plant is also infected by the pathogen and also infect the panicles affecting the seed formation. Lesions can be found on the panicle branches, spikes, and spikelets.

The critical growth stages are seedling stages, tillering stage and panicle initiation stage of the crop.

Symptoms:
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Rice seedlings and young or tender tissues are more vulnerable than the older ones. At optimum temperatures, new blast lesions appear within 4-5 days after they fall on leaf surface. In warm and wet weather conditions, new conidia are produced within hours from the appearance of the lesions and this continues for several days. Most of the conidia are released between mid night and sunrise. This is a polycyclic disease and completes several cycles within a season and causes epidemics. The critical growth stages are seedling stages, tillering stage and panicle initiation stage of the crop.

The pathogen perpetuates as mycelium and conidia on diseased rice straw and seed, and possibly on weed hosts also.

The fungus produces conidia and releases in to the atmosphere when there is high relative humidity (>90%). The conidia are air borne and fall on the rice plant and adhere strongly to the leaves through the mucilage produced by them at the tip.

These conidia germinate when the rice leaves are wet or have high moisture. They form the appressoria on the leaves through which they adhere to the leaf surface. They penetrate the leaf surface through the penetration peg from the appressoria or enter through the stomata.

Disease cycle in the field:
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Management:
Grow Resistant Varieties like Tulasi, Aditya, Suraksha, Rasi and IR 64.
Spray the chemicals: In blast endemic areas treat the seeds with Tricyclazole 75 wp @ 1.5 g/kg seeds or with Carbendazim 50 wp @ 2 g/kg seeds. Need based application of Tricyclazole 75 wp @ 0.6g/l or Isoprothiolane 40 EC @ 1.5 ml/l or Iprobenphos 48 EC @ 2ml/l or Carbendazim 50 wp @ 1g/l