

Rice Blast

C/O: Pyricularia grisea (P. oryzae), Magnaporthe oryzae, Magnaporthe grisea

Order: Magnaporthales

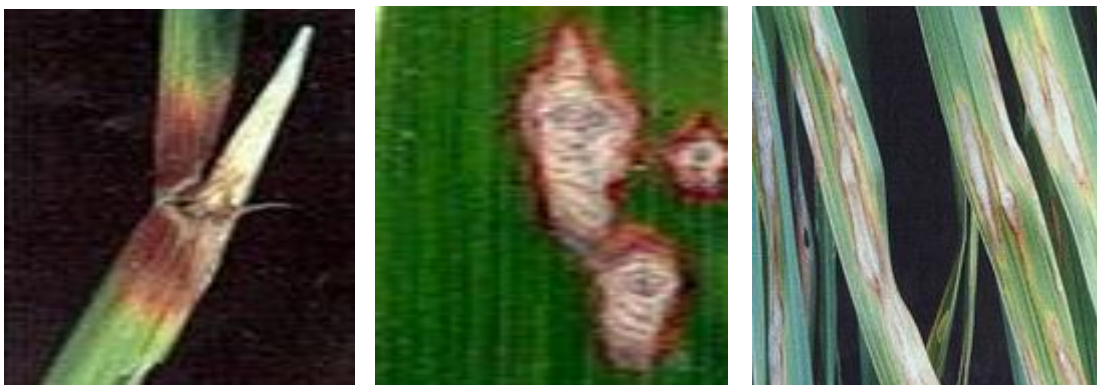
Family: Magnaporthaceae

Occurrence

- Earliest known plant disease
- Also known as rotten neck or rice fever.
- Reported from 80 rice-growing countries. First recorded in India during 1918.
- Expected grain loss : 70 to 80%

Symptom of damage

- Disease can infect paddy at all growth stages and all aerial parts of plant (Leaf, neck and node).
- Among the three leaves and neck infections are more severe.



- Small specks originate on leaves - subsequently enlarge into spindle shaped spots(0.5 to 1.5cm length, 0.3 to 0.5cm width) with ashy centre.
- Several spots coalesce -> big irregular patches

Leaf Blast

- Severe cases of infection - entire crop give a blasted or burnt appearance- hence the name "BLAST"
- Severe cases - lodging of crop (after ear emergence)

Neck Blast

- Neck region of panicle develops a black color and shrivels completely / partially grain set inhibited, panicle breaks at the neck and hangs

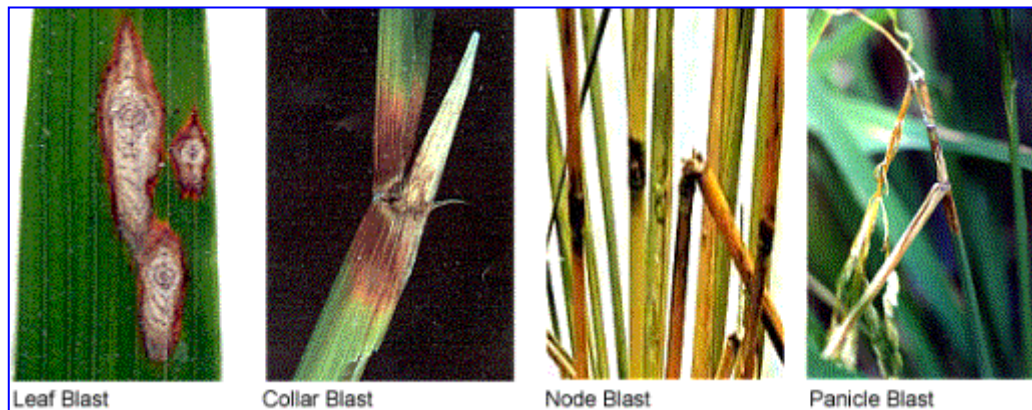
Nodal Blast: Nodes become black and break up

Photo: Different kinds of rice blasts.

EPIDEMIOLOGY

1. Cloudy skies, frequent rain, and drizzles favor the development and severity of rice blast.
2. High nitrogen levels, high relative humidity, and wet leaves encourage infection caused by the fungus.
3. The rate of sporulation is highest with increasing relative humidity of 90% or higher.
4. For leaf wetness, the optimum temperature for germination of the pathogen is 25-28 °C.

Management**Cultural method:**

- Remove collateral weed hosts from bunds and channels
- Use only disease free seedlings
- Avoid excess nitrogen
- Apply N in three split doses (50% basal, 25% in tillering phase and 25% N in panicle initiation stage)
- Use resistant variety CO 47.

Chemical Method

- Spray after observing initial infection of the disease,
- Carbendazim 50WP @ 500g/ha (or)
- Tricyclozole 75 WP @ 500g/ha (or)

- Metominostrobin 20 SC @ 500ml/ha (or) 47
- Azoxystrobin 25 SC @ 500 ml/ha

Biological control

1. Seed Treatment with TNAU Pf 1liquid formulation @ 10 ml/kg of seeds
2. Seedling root dipping with TNAU Pf 1liquid formulation (500 ml for one hectare seedlings)
3. Soil application with TNAU Pf 1liquid formulation (500ml/ha)
4. Foliar spray with TNAU Pf 1liquid formulation @ 5ml/lit

Nursery stage

Light infection - Spray Carbendazim

Pre-Tillering to Mid-Tillering

Light at 2 to 5 % disease severities - Apply Carbendazim @ 0.1 %. Delay top dressing of N fertilizers when infection is seen.

Panicle initiation to booting-At 2 to 5% leaf area damage spray Carbendazim or Tricyclazole @ 0.1 %.

Flowering and after

At 5 % leaf area damage or 1 to 2 % neck infection spray Carbendazim or Tricyclazole @ 1 g /lit of water.