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biosciences
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Factsheet for Rice Diseases in East Africa

Causal agent: Fungus



Fig 1 Spores of *Microdochium oryzae*
Favourable conditions for disease development

- The disease is favoured by temperatures (range 20-30 °C ; optimum 26°C) and high relative humidity (>90%).
- Fungal spores can only germinate on leaves under wet conditions.
- Disease severity increases if excessive nitrogenous fertilisers are applied in the field.
- Above optimal plant density favours formation of huge canopy and high relative humidity, conditions which enhance pathogen growth and colonization.
- The fungus can remain in seeds, crop stuble and debris of infected host for several months, which became sources of inoculum for the next season.
- The disease is found in upland, rain-fed and irrigated areas.
- Host range includes rice, wheat and rye, and wild grasses (such as Banyard grass).

Leaf Scald (*Microdochium oryzae*)

Geographical distribution

- Disease incidences are low in rice growing regions of East Africa.

Crop damage and associated loss

- When conidia lands on the surface of the host, it germinates to form mycelia.
- The mycelia forms a penetration peg, which enters through the stomata into the leaf cells. This leads to a swelling and disruption of the functions of the stomata.
- Disruption of plant cells causes lesions, which start on leaf tips or from the edges of leaf blades.
- The lesions develop a pattern of light (tan) at the tips and darker reddish-brown areas (chevron) in the middle of the leaf.
- The leading edge of the lesion usually is yellow to gold. When leaves dry, they turn straw colored and appear scalded. To differentiate scald from bacterial blight, immerse the leaf in water for up to 10 minutes and confirm a lack of bacterial ooze.
- In other parts of the world, leaf scald has been associated with up to 50% yield loss.

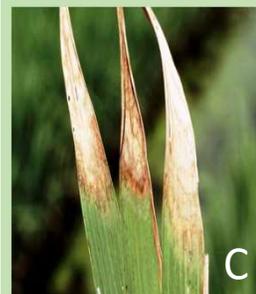


Fig 2. Leaf scald symptoms. A) Tan type B) Chevron at middle and C) chevron at the tip. Courtesy of Donald Groth, LSU

Management Strategies

1. Cultural control

- Fungal growth and continuous leaf wetness can be prevented by a regulation of the relative humidity in an alternate wetting-drying watering regime.
- Application of nitrogenous fertilisers at recommended rates (refer to Water and Nutrient Management Factsheet).
- Inoculum build up can be controlled by timely removal of ratoons, stuble and alternate weeds from the field.
- Enhance drying up of the inoculum by adopting crop rotation with non-host crops.

2. Chemical control

- If seeds are suspected to be infected, they can be dressed with fungicides at recommended rates (such as with Seed Plus 30WS (Imidacloprid 10%; Metalaxyl 10%; carbendazim 10%) at 2.5-5 kg/1 ton of seeds.

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