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AfricaRice
Rice science at the service of Africa
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INTERNATIONAL RICE RESEARCH INSTITUTE

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Bakanae Disease of Rice (*Fusarium fujikori*)

Factsheets for Rice Production, East Africa

Causal agent: Fungus



Fig 1. Macroconidia of *Fusarium fujikori*

Source: Nelson, P.E. et al. (1983).
Fusarium spp. An Illustrated manual for identification

Favourable conditions for disease development

- The disease is seed and soilborne.
- High temperature (27-30°C) and relative humidity.
- Disease incidence is higher in rice seed harvested during wet season.
- Disease incidence are higher in transplanted rice compared to direct sowed rice.

Geographical distribution

- Sporadic cases of the disease have been reported in rice growing areas in East Africa.

Crop damage and associated losses

- The disease occurs at any stage of rice growth but its most damaging at seedling stage.
- Infected seeds may fail to germinate.
- There is overgrowth of infected seedlings resulting into thin, pale and yellow seedlings.
- Infected seedlings show brown rot at the base.
- Affected seedlings wilt and die.
- Infected rice plants appear conspicuously taller than other healthy plants..
- Infected rice plants produce few tillers, no grain and wither after sometime.
- Development of adventitious roots on several lower nodes above the soil level.
- Rotting of the nodes starting from base of the rice plant.



Fig 2. Unusually tall and pale rice plant infected by Bakanae disease.

Source:

www.dpi.nsw.gov.au/biosecurity/plant/insect-pests-and-plant-diseases/Bakanae



Fig 3. Basal rotting of rice plants infected by Bakanae disease.

Source: Ahangar et al. (2014).
Journal of Agriculture and Life Sciences, 1 (2).45-47

Management Strategies

1. Cultural Control

- Plant of certified seed.
- Remove diseased plants and discard them by burying or burning.
- Crop rotation with non-host crop. Avoid crop rotation with maize, sorghum and sugarcane, cowpea, tomato since they are alternate hosts.

2. Biological control

- Seed dressing with biocontrol agents *Trichoderma* spp (e.g. Trianum P®, Rootgard®) and *Pseudomonas fluorescens* (e.g. Brochure B1.75 WP®) at a rate 5gms/kg of seed for each.

2. Chemical control

- Treat seeds with Seed Plus 30WS (Imidacloprid 10%; Metalaxyl 10%; Carbendazim 10%) at a rate of 2.5-5kg/ton of seeds.

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