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Rice Sheath Rot

Factsheets for Rice Production, East Africa

Causal agent: Fungus and bacteria

Rice sheath rot is a disease complex caused by various fungi and bacterial pathogens with *Sarocladium oryzae*, *Fusarium* spp. belonging to the *Fusarium fujikuroi* complex and *Pseudomonas fuscovaginae* being the main pathogens involved.

Favourable conditions for disease development

- Disease is favoured by high humidity (65–85%) and temperature ranging 20–30°C.
- Primary source of infection is the plant debris.
- Secondary infection is spread by spores produced on the leaf sheath.
- The disease is seed borne.
- Conditions that predispose crop to the pathogen include: closer planting, high doses of nitrogenous fertiliser, and injuries made by insect pests.

Geographical distribution

- The disease has been reported in all rice growing areas in East Africa

Crop damage and associated losses

- Yield loss of up to 85% has been reported under favourable disease conditions (Bigirimana *et al*, 2015).
- Initially oblong greyish brown spots on the upper most leaf sheath enclosing young panicles, which enlarge and develop grey centres and brown margins. These may coalesce and cover the entire leaf. The affected sheath develop a dry rot.
- Young panicles remain within the sheath or emerge partially.
- Emerged panicles develop a reddish-brown to dark brown discolouration and with no grain.
- Infection results in chaffy, discoloured grains, and affects the viability and nutritional value of seeds.



Fig 1. Brown lesions on the sheath of infected rice plant
Source: Groth, D., LSU AgCenter, www.lsuagcenter.com



Fig 2. Reddish-brown lesions on the panicle of infected rice plant
Source: Groth, D., LSU AgCenter, www.lsuagcenter.com

Management Strategies

1. Cultural Control

- Use of certified seed.
- Destroy infected materials by burying or burning.
- Minimize injuries due to insect damage to prevent entry of disease causing agents.
- Maintain good agronomic practices. (Refer to agronomic practices factsheet).

2. Biological control

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

3. Chemical control

- Treat seeds with Seed Plus 30WS (Imidacloprid 10%; Metalaxyl 10%; Carbendazim 10%) at a rate of 2.5-5kg/ton of seeds.
- Spray the crop with Azadirachtin (e.g., Achook EC, Neem cake, Nematon, Nimbecidine)
- Spray with carbendazim e.g. Pearl®, Rodazim® or Thiophanate-methyl e.g. Topsin M® as per manufacturer recommendations.

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