False smut (Ustilaginoidea virens)

Causal agent: Fungus

Fig 1. Spores of Ustilaginoidea virens
Source: Donald Groth, LSU Ag Centre.

Conditions favourable for disease development
- The disease is severe under high humidity (>90%) and temperatures between 25-30°C.
- Soils with high nitrogen content.
- Presence of rain and windy conditions that enhance dispersal of spores.
- Rice crop at flowering stage.

Geographical distribution
- False smut is not a major disease of rice in East Africa but isolated cases have been observed in some growing regions.

Crop damage and associated loss
- False smut reduces grain yield, quality and germination.
- Infection occurs during panicle development but symptoms are noticed during flowering.
- Rice spikelet and individual grains are covered with the fungus and converted into a yellowish smut ball. The smut ball then changes colour to yellowish orange, green, olive green and greenish-black on maturity.
- Powdery dark green spores are released when the smut ball burst.

Management Strategies

1. Cultural control
   - Plant certified seed.
   - Treat seeds by dipping in water at 52°C for 10 minutes.
   - Destroy infected plant materials by burying or burning.
   - Plant resistant cultivars.
   - Maintain appropriate agronomic systems (Refer to agronomic factsheet)

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

3. Chemical control
   - Treat seeds with Seed Plus 30 WS (Imidacloprid 10%; Metalaxyl 10%; Carbendazim 10%) at a rate of 2.5-5.0 kg/ton of seed.

Fig 2. False smut, yellow spore galls on rice panicle
Source: Dr. Lusike Wasilwa

Fig 3. False smut black spores
Source: Dr. Lusike Wasilwa