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TSL

biosciences
eastern and central africa



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

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False smut (*Ustilaginoidea virens*)

Causal agent: Fungus

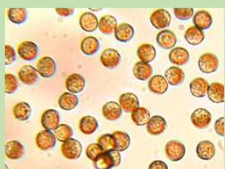


Fig 1. Spores of *Ustilaginoidea virens*
Source: Donald Groth, LSU Ag Centre.

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 bursts.



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



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

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 Trianium P®, Rootgard®) and *Pseudomonas fluorescens* (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.

Contact experts: Mutiga, S. (Mutiga@uark.edu), Mwongera, D; Kirigua, V; Otipa, M; Kimani, J; V. Mugambi, C; Ngari, B; Ochieng, V; Wasike, V; Wandera, F, Wasilwa, L; Too, A; Nyongesa. O. (IRRI); Zhou, B (IRRI); Mitchell, T. (OSU); Wang, G. L (OSU); Were, V. (TSL); Ouedraogo, I. (INERA); Rotich, F. (UoEm); Correll, J. C. (UARK) and Talbot, N. J. (TSL). *E-Guide for Rice Production in East Africa (2019)*

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