

Rice stem rot (430)

Summary

- Widespread. Africa, Asia, North, South, and Central America, the Caribbean, Europe, Oceania. In Australia, Fiji, New Caledonia, Papua New Guinea.
- Serious outbreaks reported. On rice mainly and wild grasses.
- Symptoms occur near water level at heading and grain filling: stem rot, chalky grains and unfilled panicles.
- Infection begins when floating minute fungal balls ('sclerotia') infect leaf sheaths, causing black spots and rots, lodging of stems, and production of spores ('conidia', 'ascospores', sclerotia) inside leaf sheaths. Insect damage and too much N and too little K increases disease.
- Spread as sclerotia in water and on seed. Survival as sclerotia in straw and stubble in soil.
- Cultural control: frequent ploughing before sowing; possibly liming soil; drain fields occasionally to reduce sclerotia; ensure correct N:K balance, and split fertilizer applications; collect straw and burn, or plough in stubble and straw after harvest; rotate with forage or legume crops.
- Chemical control: unlikely to be economic, although recommendations include copper hydroxide, fentin hydroxide, thiophanate-methyl. Possibly insect control should be given priority.



Photo 1. Infection of tillers by stem rot, *Magnaporthe salvinii*.



Photo 2. Rice stems with spots and large lesions of stem rot, *Magnaporthe salvinii*.



Photo 3. Sclerotia of stem rot, *Magnaporthe salvinii*, on the inside of a leaf sheath.

Common Name

Rice stem rot

Scientific Name

Magnaporthe salvinii. It is also known under its asexual names, *Leptosphaeria salvinii* and *Sclerotium oryzae*. Note, a similar fungus, identified as *Sclerotium hydrophilum*, associated with infections of the outer leaf sheath of rice and weed grasses occurred on the Guadalcanal Plains, Solomon Islands, in the mid-1970s.



Photo 4. Sclerotia on leaf sheaths, and spots on a stem, caused by stem rot, *Magnaporthe salvinii*.

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Information (and Photo 1) from Stem rot. Rice Knowledge Bank. IRRI. (<http://www.knowledgebank.irri.org/training/fact-sheets/pest-management/diseases/item/stem-rot>); and CABI (2018) *Magnaporthe salvinii* (stem rot) Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/32263>); and from Elazegui F, Islam Z (2003) Diagnosis of common diseases of rice. International Rice Research Institute. (<http://www.knowledgebank.irri.org/images/docs/diagnostic-of-common-diseases-of-rice.pdf>). Photo 2&3 Donald Groth, Louisiana State University AgCenter, Bugwood.org. Photo 4 Milton Rush, Plant Pathology, Louisiana State University, Bugwood.org.

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