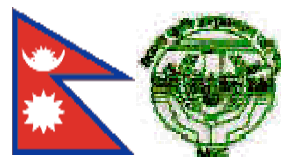


Sheath blight management in rice



What is sheath blight?

Sheath blight, caused by *Rhizoctonia solani* Kuhn, is one of the major fungal diseases of rice after blast and brown spot in Nepal. The disease was recorded in 1968 in Nepal and is distributed in all rice growing areas in the country.

What are the major symptoms?

The fungus causes lesions on seedlings, leaf sheath and on leaves. Small oval or circular, greenish-gray spots appear first on leaf sheath. The spots soon enlarge to 2-3 cm length, with irregular dark brown margins and bleached to grayish white centers. The lesions spread rapidly upwards under high humidity and temperature conditions. In severe cases, entire leaves are blighted and plants are lodged. White sclerotia appear on dry lesions and become brown after maturity. Sclerotia fall from the plant and remain alive in the soil for several years.

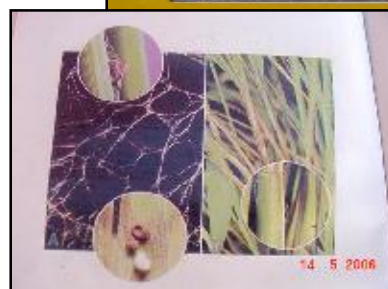
Why do we need to manage the disease?

The fungus overwinters in the soil as a hard, weather resistant structure called a sclerotium. A sclerotium floats to the water surface in the field. The fungus grows out from the sclerotium and move into the leaf sheath when it contacts rice plant. Under favorable conditions, the disease causes complete crop loss. Growing susceptible cultivars accumulate more sclerotia in the soil that further provides more inoculum for succeeding crop and hence more damage. In general, it causes 5-10% yield loss but in epidemic year it may damage yield by 30-40%. The disease also deteriorates milled grain quality (breaking of grains). Therefore, it is essential to control the disease to reduce crop damage in the present and future.

What are the management methods/measures?

- **Host resistance:** Sources of resistance in rice to this disease is not reported. Hence, varieties with some level of resistance such as Makwanpur 1, Radha 11, Radha 12, Sabitri, Hardinath 1 are suggested to grow.
- **Cultural practices:** The pathogen has a very wide host range- so practice of clean cultivation is effective in minimizing the disease. Alternate wetting and drying; timely weed management; spaced planting and balanced fertilization (especially P_2O_5 and K_2O) are some of the practices that can reduce inoculum and disease development.

- **Healthy seeds/ seedlings:** The fungal mycelium may survive on seed that becomes sources of inoculum in the seedbed. Hence use of healthy seeds can minimize the disease spread. Soil solarization during May month is effective in reducing the soil borne inoculum of the pathogen and helps produce healthy seedlings for transplanting.
- **Chemicals:** Three foliar spray of Validamycin @ 2.0 ml/L at 10 d interval minimizes disease spread.
- **Others:** Soil application of Neem cake @ 150 kg/ha; foliar spray with leaf extract of *Ocimum sanctum* @ 2.5 ml/L; foliar spray of cow dung etc are other methods to reduce the disease incidence and severity. Soil application of *Trichoderma* also mitigates the situation. Creating awareness among the rice growers and field staff about the disease epidemiology may play a significant role for disease management in present and future context.



For more information visit Rice Knowledge Bank www.knowledgebank.irri.org

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