

Effects of different water regime and nitrogen rate on the incidence and severity of sheath blight of rice

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Water and nitrogen management play vital roles in rice production. However, mismanagement of these two management practices may trigger plant disease epidemics such as sheath blight of rice, caused by *Rhizoctonia solani*, which is favoured by wet conditions, high relative humidity, and high nitrogen (N) fertilizer levels. In order to understand how different combinations of water and nitrogen management affect sheath blight epidemics, we designed a split-plot experiment with two irrigation regimes, flooded (W_1) and alternate wetting and drying (W_2), combined with different N applications at 0 (N_0), 120 kg ha⁻¹ (N_1), and 150 kg ha⁻¹ (N_2) of total N in our study. Disease scoring using a sheath blight assessment scale for field evaluation developed at IRRI was used to assess the severity on infected sheaths and leaves while sheath blight incidence on tillers were counted per hill. Assessments were made at 22-, 35-, 49-, 62-, and 83-day after inoculation. Results showed that there are no significant differences on sheath blight incidence and severity between the two irrigation regimes, but significant differences were found on N applications for all disease assessment dates, plots receiving the highest N level had the highest incidence and severity of sheath blight. Further study for coming dry seasons is required to validate these results.