

# Phenotypic evaluation of sheath blight resistance using the maize meal sand inoculation method in 3k genome panel subset of rice (*Oryza sativa* L.)

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## ABSTRACT

Sheath blight, caused by *Rhizoctonia solani* Kühn, is a major constraint to rice (*Oryza sativa* L.) yield and grain quality. A subset of 364 rice genotypes from the 3k Rice Genome Panel along with four checks (Swarna, Tetep, HR12 and TN-1) was evaluated for resistance using the maize meal–sand inoculation method. The field experiment was conducted in an Augmented Randomized Complete Block Design with eight blocks and 30-day-old seedlings were transplanted at uniform spacing. A virulent isolate (SB-184) of *R. solani* was revived and used to prepare the inoculum, applied at the maximum tillering stage (30–45 days after transplanting). Disease severity was assessed at 21-day intervals using plant height, lesion length, relative lesion height (RLH) and percent disease index (PDI). RLH and PDI were calculated following standard procedures and disease scoring was done following the 0–9 IRRI SES scale (2013). Significant variation in sheath blight response was observed among genotypes, with several accessions exhibiting low RLH and PDI, indicating potential as donors for breeding resistant cultivars.

**Keywords:** *Maize meal–sand inoculation, Percent Disease Index PDI, 3K Rice Genome Panel, Relative Lesion Height RLH*