Characterization of Fusarium proliferatum through species specific primers and its virulence on rice seeds

ABSTRACT

Bakanae is one of the important diseases of rice (Oryzae sativa L.). To evaluate the pathogen(s) responsible for bakanae disease of rice in Malaysia, 12 isolates of Fusarium spp. were obtained from infected rice plants samples from rice growing in Tanjung Karang and Sekinchan areas of Selangor. All isolates were identified as F. proliferatum based on morphological characteristics and confirmed by amplification of DNA with species specific primer pairs Pro 1/2 at 554 bp. The rDNA-ITS primer sequences showed 99% homology with F. proliferatum isolates AJ810449.1, X94171.1, GU363955.1, EU151488.1, HQ380789.1, HQ332533.1, GU594758.1 and EU03930366.1. Pathogenicity testing on susceptible rice variety MR 211 proved all isolates to be pathogenic based on increase in plant height (%) decrease in main root length (%) and decrease in lateral roots number (%) of inoculated plants compared to control plants.

Keyword: Bakanae disease; Fusarium proliferatum; Oryza sativa L; Pathogenicity; rDNA-ITS