

Susceptibility of Malaysian rice varieties to *Fusarium fujikuroi* and in vitro activity of *Trichoderma harzianum* as biocontrol agent

ABSTRACT

Aims: Bakanae disease on rice has been widely distributed in all countries where rice is grown commercially, especially in Asian countries including Malaysia. As an alternative measure in controlling *Fusarium fujikuroi*, two approaches have to be adapted i.e. by using resistant varieties and biocontrol agents as reported in the present study. **Methodology and results:** A total of 31 Malaysian rice varieties were used in screening and results showed that variety MR211 was the most susceptible and MR220 was slightly susceptible. Out of 60 isolates of *Trichoderma harzianum* isolated from soils in Malaysia and tested against the pathogen under in vitro condition, 13 isolates showed high percentage of inhibition (PIRG > 60%). All isolates of *T. harzianum* showed that the PIRGs were significantly different at $p \leq 0.05$ with those of control plates. **Conclusion, significance and impact of study:** Biocontrol agent and resistant variety are better alternative for controlling plant diseases. We found a variety MR220 was slightly susceptible, but none of tested varieties is resistant towards pathogen of bakanae disease. *T. harzianum* has the ability to inhibit the growth of *F. fujikuroi* (T3068P) under in vitro condition. The findings of the Malaysian susceptible/resistant variety and potential *T. harzianum* isolate as a biocontrol agent of bakanae are important for future tests in the plant house and field trials.

Keyword: Screening; *Fusarium fujikuroi*; Bakanae; *Trichoderma harzianum*; Rice variety; Biocontrol