

In vitro and in vivo biocontrol performance of *Trichoderma harzianum* Rifai on *Ganoderma boninense* Pat. related to pathogenicity on oil palm (*Elaeis guineensis* Jacq.)

ABSTRACT

Ganoderma boninense, causes basal stem rot disease in oil palm, which leads to severe losses to the palm oil industry. The antagonistic effect of *Trichoderma harzianum* on *G. boninense* (a causal pathogen for oil palm) was tested by in vitro and in vivo studies. *T. harzianum* inhibited the mycelia growth of *G. boninense* on in vitro plate assay experiment and in vivo on the glass house grown oil palm plants. During the in vivo experiment, at first time point after one month, *G. boninense* development was found in oil palm root tissues in control plants whereas in *T. harzianum* treated plants no disease symptoms were observed until at the end of the experiment. It is a broad spectrum approach to use *T. harzianum* to control *G. boninense* infection of oil palm.

Keyword: Biocontrol; *Ganoderma*; In vitro; In vivo; Oil palm; *Trichoderma*