

In vitro studies on the potential *Trichoderma harzianum* for antagonistic properties against *Ganoderma boninense*

Abstract

Ganoderma boninense is a bracket fungus that is pathogenic on oil palms causing basal stem rot, while some members of the genus *Trichoderma* are good biological control agents against numerous plant fungal diseases. We isolated and tested *T. harzianum* for in-vivo nursery to suppress diseases caused by *G. boninense*. A total of 48 local isolates of *T. harzianum* were selected for screening of their antagonistic properties against *G. boninense* (strain PER 71) by dual culture techniques. The results showed that all of the isolates of *T. harzianum* inhibited the growth of PER 71 with percentage of inhibition radial growth (PIRG) values ranging from 47.86 to 72.06%. The best eight samples from the dual cultures were then tested for their production of volatile antifungal compounds against PER 71, which gave PIRG values between 24.53 and 58.70% over 6 days. The values ranged from 18.35 to 40.16% over 6 days for the antifungal activities of their non-volatile compounds. Isolate FA 30 was demonstrated to be the best isolate not only to the dual culture inhibition tests but also the best for the production of inhibitory properties from both volatile and non-volatile antifungal compounds.