

In vitro antifungal activity of thiram against *Ganoderma boninense*

ABSTRACT

Basal stem rot (BSR) which is caused by *Ganoderma boninense* (GB) is the most serious disease faced by oil palm industry, especially in Malaysia. To date, there is no satisfactory control measure for this disease, and researchers are investigating different approaches in managing the disease. The current study investigates the antifungal properties of Tetramethyl thiuram disulfide or commonly known as thiram, against GB. The in vitro antifungal activity of thiram were expressed in inhibition of GB mycelia growth on Potato Dextrose Agar (PDA) incorporated with different concentrations of thiram (0.010, 0.012, 0.014, 0.016, 0.018, 0.020, and 0.030 mg/ml). The lower concentrations of thiram, such as 0.010 mg/ml, failed to inhibit the growth of GB completely. However, higher concentrations of thiram (0.012 to 0.020 mg/ml) significantly slow the growth rate of GB in comparison to control (without thiram). The concentration of thiram at 0.030 mg/ml completely inhibits the growth of GB. To further evaluate the effectiveness of the treatment, the GB treated mycelia were examined for their ergosterol content using HPLC. The result shows that a higher amount of ergosterol content was found in less effective treatments, and no ergosterol was found in sample when GB is completely inhibited.