

**Phytol-containing seaweed extracts as control for
*Ganoderma boninense***

ABSTRACT

Basal stem rot (BSR) is a disease in oil palm caused by a fungal pathogen, *Ganoderma boninense*. Utilisation of seaweeds as a control agent has not been explored. This study investigated the anti-fungal potential of Malaysian seaweed extracts against *G. boninense* and identification of the compounds. Seaweeds cf *Sargassum oligocystum*, *Caulerpa racemosa*, *Caulerpa racemosa* var. *lamouroxii* and cf *Halimeda macrophysa* were collected and subjected to crude extraction with various solvents. Methanolic extracts of all species displayed the highest yield with an average of 15.25% compared to dry weight. Anti-fungal assays were carried out against *G. boninense* using the poisoned food technique and three highest inhibitions were exhibited by *C. racemosa* var. *lamouroxii* dichloromethane extract (46.82%), cf *H. macrophysa* dichloromethane extract (33.49%) and *C. racemosa* methanol extract (28.06%). Dominant compounds detected via gas chromatography-mass chromatography (GC-MS) in extracts with anti-fungal potential includes phytol. Anti-fungal assay using standard phytol showed growth inhibition of *G. boninense* of up to 21% inhibition. *Caulerpa racemosa* var. *lamouroxii*, cf *H. macrophysa*, *C. racemosa* and cf *S. oligocystum* dichloromethane extracts contain 474, 117, 106 and 19 mg litre⁻¹ of phytol respectively. These findings suggested that Malaysian seaweeds are a good source of anti-fungal compounds for utilisation in controlling the BSR disease of oil palm in Malaysia.

Keyword: Anti-fungal activity, Basal stem rot disease, *Ganoderma boninense*, Phytol, Seaweeds.