

Variation in Morphological Characteristic and Growth Rate of Isolated Dikaryotic *Ganoderma boninense* Mycelia on Nutrient Medium and Rubberwood Block: A Cue for Their Virulency

HAGILAA, G, LIM, R R, CHEW, T D, NG, S K, SENG, T Y, CHEAH, T W AND MATHEWS, J,

Undeniably, the formation of new Ganoderma variants within the plantation rapidly declines the life expectancy of oil palm trees. The produced variants induce severe infection on the palm, largely impeding disease management approaches to prevent infection. Selection of the high virulent of Ganoderma spp. affiliated with stem rot disease is crucial for assessing the planting material to identify either resistant or tolerant oil palm cultivars and optimise treatment strategies in line with species varieties. So far, the genetic diversity and virulency of these Ganoderma species in the IOI Group estate have not yet been explored. About seven basidocarps were collected from Ganoderma-infected palms and identified as Ganoderma boninense. The cultural traits of these nine isolates, including P4.1E and PER71 showed distinct phenotypical variations on potato dextrose agar (PDA). Though sequence analysis revealed four PM09C isolates were 100 per cent identical, incompatible reactions were observed among isolates, similar to other isolates from different fields. The mycelia rate expansion on the nutrient medium had a significantly correlated relationship to the disease incidence (DI) ($r = 0.750$), disease severity index (DSI) ($r = 0.690$) and death rate (DR) ($r = 0.732$). Overall, these findings contribute to the understanding of Ganoderma species in the estate and provide valuable insights for developing targeted management strategies in evaluating tolerant planting material for future replanting.

Keywords: Ganoderma, oil palm, basal stem rot, genetic diversity, virulency

