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DETECTION OF A NEW ENDEMIC LEAF DISEASE IN MALAYSIAN RUBBER PLANTATIONS

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ABSTRACT

A rather new endemic leaf disease in rubber trees has affected many rubber-producing countries including Malaysia. The symptom was observed as a circular spot with a brown necrotic lesion on matured rubber leaf. The new leaf disease causes defoliation of rubber leaves and a reduction in latex yield. The identity of the causal pathogen is a matter of key importance to designing precise control measures in managing the disease. Thus, the objectives of this study were; (i) to isolate, characterize and identify the causal pathogen causing this disease in different localities using phenotypic and molecular characterization and (ii) to conduct in vitro pathogenicity test to fulfill Koch's postulates. Sampling was carried out at 7 different locations in 5 states in Peninsular Malaysia. Rubber leaves exhibiting symptoms of circular spots with brown necrotic lesions were collected and brought back to the Biological Control Laboratory, Faculty of Agriculture, Universiti Putra Malaysia for further analysis. Pure cultures of fungal isolates obtained were characterized based on cultural, morphological and molecular techniques. In addition, a pathogenicity test was conducted on three months old rubber seedlings clone PB 350. A detached matured rubber leaf was used in the in vitro pathogenicity test. Based on the isolation and identification results obtained, 24 isolates were identified as *Colletotrichum siamense*. Results from the in vitro pathogenicity test indicated that leaves inoculated with spore suspension or mycelial plug of *C. siamense* yielded a large lesion similar to the infected rubber leaf samples obtained from the plantations. Therefore, it can be concluded that *C. siamense* could be the primary causal pathogen of Colletotrichum Circular Leaf Spot (CCLS) disease in Malaysia.

Keywords: Rubber, Disease, Colletotrichum Circular Leaf Spot (CCLS), *Colletotrichum Siamense*.