CHARACTERIZATION OF PATHOGENS ASSOCIATED WITH CIRCULAR LEAF SPOT DISEASE OF *Hevea brasiliensis* IN KALUTHARA AND MONARAGALA DISTRICTS

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2025

ABSTRACT

The circular leaf spot disease (CLSD) is a newly reported devastating disease of rubber cultivation in Sri Lanka. The CLSD is a serious threat to *Hevea brasiliensis,* affecting the both latex yield production and overall plant health. Previous investigations have reported the possible involvement of *Colletotrichum* spp. and the Pestalotioid group as fungal pathogens of CLSD. However, etiology and management of the CLSD are not fully understood. The purpose of this study was to isolate, identify, and assess the pathogenicity of pathogens associated with CLSD in Kalutara and Monaragala districts. Symptomatic leaf samples were collected and the associated fungi were isolated. Morphological analysis revealed the species diversity within these two primary causative agents. Pathogenicity tests utilizing spore suspensions and plug inoculations revealed differences in virulence among isolates. The disease severity assessments demonstrated that *Colletotrichum* isolates KD/C/1 and MK/C/1 exhibited the highest disease index (DI) values (3.3241 and 3.2083, respectively), indicating strong pathogenic potential. In contrast, Pestalotioid isolates showed relatively lower virulence, with the lowest DI values recorded for KNK/P/2 (1.6944) and MP/P/1 (1.5463). Furthermore, wounding condition significantly increased disease severity across all isolates, confirming the role of leaf integrity in pathogen establishment. Statistical analyses revealed substantial variations in growth rates of fungi, with MP/P/2 and MK/C/1 displaying the highest conidial growth rates, exceeding 7.5 cm by day 5 and reaching 9.0 cm by day 7. Additionally, analysis of conidial morphology identified significant length variations, with the highest mean length recorded for KN/P/2 (10.08 cm) and the lowest for MK/C/1 (5.67 cm). These findings provide critical insights into the epidemiology of CLSD, emphasizing the importance of targeted disease management strategies. The results underscore the need for resistant clone development, integrated disease management approaches incorporating chemical and biological control measures to mitigate the impact of CLSD on Sri Lanka's rubber plantations.

Keywords: Circular Leaf Spot Disease (CLSD), *Colletotrichum* spp., *Hevea brasiliensis*, Pathogenicity, Pestalotioid group,

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