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Foliar Pathogenic *Colletotrichum* species Associated with Cultivated Rubber Trees in Sri Lanka

I.H.M.I.S. Herath¹, D.S. Manamgoda¹ and D. Udayanga²

¹Department of Botany, University of Sri Jayewardenepura, Sri Lanka

²Department of Biosystems Technology, University of Sri Jayewardenepura, Sri Lanka

Colletotrichum leaf disease (CLD) is regarded as one of the major threats on rubber trees worldwide. Due to recent revolutionary changes in species numbers in the genus *Colletotrichum* based on molecular data, it is essential to re-assess the *Colletotrichum* species associated with rubber trees in Sri Lanka. The objective of this study is to identify *Colletotrichum* species associated with rubber plants in Sri Lanka using morphology and DNA barcoding. Samples with leaf spots were collected randomly from rubber trees at selected sites in Colombo and Matale. Single spore isolation technique was followed to obtain five pure cultures of *Colletotrichum* spp. and their morphological characteristics were observed. Internal transcribed spacer (ITS) loci of all isolates were sequenced. Sequences were initially identified based on similarity search at NCBI and phylogenetic analysis was performed to further confirm the relative phylogenetic placement of *Colletotrichum* species. Pathogenicity tests were carried out to confirm the pathogenicity of the species and the Koch's postulates were proven for potential pathogens. According to the morphological and molecular data, those isolates belong to *C. gloeosporioides*, *C. gigasporium* and *C. truncatum* species complexes. Two different species grouped within *C. gloeosporioides* complex showed highest growth rates in Potato Dextrose Agar (PDA) and Malt Extract Agar (MEA) whereas *C. gigasporium* and *C. truncatum* showed the highest growth rate in PDA and MEA respectively. Typical CLD symptoms were observed with *C. gloeosporioides* complex species after pathogenicity testing whereas *C. gigasporium* and *C. truncatum* were also able to colonize and produce spore masses on rubber leaves. According to our knowledge this is the first record of *C. gigasporium* and *C. truncatum* associated with rubber plants in Sri Lanka. Therefore, this study reveals the unknown diversity of *Colletotrichum* pathogens associated with cultivated rubber trees.

Keywords: Leaf diseases, Plantation crops, DNA barcoding, Species complexes

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