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Variability of *Colletotrichum* Species Causing Colletotrichum Leaf Disease in two Main Rubber Growing Districts: Kalutara and Ampara in Sri Lanka

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Abstract

Colletotrichum Leaf Disease (CLD) caused by *Colletotrichum* sp. is one of the most destructive leaf diseases in natural rubber (*Hevea brasiliensis*). As the causative agent of CLD in rubber has been changed time to time, continuous characterisation of currently persisting species is critical. Disease samples were collected from two main rubber growing districts. The pathogen was isolated from the leaf lesions. Cultural and reproductive characters of each isolate were observed after 10 days of incubation. Conidia concentration of each isolate was compared using haemocytometer. Growth rates were measured on Potato Dextrose Agar (PDA) plates. Fungicide sensitivity was tested with different concentrations of carbendazim using poisoned food technique. Pathogenicity test was performed by using 10^5 conidia/ml suspension. The disease index (DI) value for each leaf was calculated. All the isolated colonies showed approximately similar colours, shape and other morphological characters with slight differences. Conidia of all the isolates were aseptate with one cell, green colour, smooth-walled, cylindrical, rounded at both ends, guttulate and granular. All the isolates were pathogenic. Conidia production varied between 0-2.09×10^7 spores/ml. All the isolates showed approximately similar growth rates. All the isolates were able to exhibited 100% inhibition between 0.1-20 ppm concentrations of carbendazim. All the non-wounded leaves treated with the spore suspensions of each isolate exhibited different levels of lesions except the control and one isolate (A5). All of them were susceptible for the disease showing highest DI value as 2.444 while A5 did not exhibit any lesion development on the leaves. However, lesions were appeared in A5 after 03 days of incubation when the leaves were artificially wounded. According to the study, getting an idea of morphology, growth rate, conidia concentration and pathogenicity can be used as good criteria for fast detection of the pathogen and molecular techniques are recommended for the confirmation of different species.

Keywords: Natural rubber, Colletotrichum leaf disease