

**IDENTIFICATION OF
ALTERNATIVE HOST PLANTS FOR
Colletotrichum gloeosporioides
CAUSING NUTMEG LEAF FALL DISEASE**

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ABSTRACT

Nutmeg (*Myristica fragrans*) is an important Export Agricultural Crop (EAC) grown in Sri Lanka. It has been distributed to an extend of 1029 Ha currently in Sri Lanka. Nutmeg Leaf Fall Disease (NLFD) was reported as an economically important disease in 2004 to the nutmeg cultivations in Sri Lanka and *Colletotrichum gloeosporioides* was identified as the causal organism of the disease. The Department of Export Agriculture has recommended chemical control methods together with cultural practices in order to control the spreading of NLFD. But these controlling measures have not been succeeded in long run. Nutmeg has cultivated as a mix crop in Kandyan home gardens along with other fruit and spice crops. Some of these tropical fruit crops in the nutmeg cultivated lands such as avocado, mango and papaw reported diseases which causal organism is also the same fungus causing NLFD. Therefore, this study was conducted for assessment of cross infection potential between *C. gloeosporioides* isolated from nutmeg and selected tropical fruits (avocado, mango, and papaw). Percent Disease Index (PDI) and Virulence Index (VI) were calculated after cross inoculation in order to quantify the pathogenicity. PDI values of cross inoculated nutmeg seedlings for T₁, T₂, T₃ and T₄ were 17.78, 11.1%, 20%, 4.4% and 26.67% and the VI values were 15.88%, 4.56 %, 7.69 %, and 9.4 % respectively. PDI values of cross inoculated avocado, mango, and papaw were 55%, 60%, 45% and the VI values were 25.8%, 50%, 35.4% respectively. The results revealed that there is a possible disease causing ability from *C. gloeosporioides* strains of avocado, mango, and papaw to nutmeg as well as nutmeg to avocado, mango, and papaw fruits in both ways. All the tested tropical fruits were identified as potential alternative host plants for the causal organism of NLFD. Therefore, the field sanitation of those plants must be recommended as an additional measure, where nutmeg and these fruits are grown together to avoid spreading of NLFD as a long term disease management strategy. Further studies need to be conducted in order for verification.

Keywords: Nutmeg Leaf Fall Disease, *Colletotrichum gloeosporioides*, Alternative host, Cross inoculation, Tropical fruits