A Threat to Karthakolomban Mango Cultivation in North Central and North Western Provinces in Sri Lanka

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ABSTRACT

Sudden death of mature Karthakolomban mango plants were reported in North Central and North Western areas in late 2017. The symptoms include dieback of twigs and a scorched appearance of the limb of symptomatic trees. The young green twigs start withering at the base and extend outwards along the veins of leaf edges. The affected leaves turn brown, their margins roll upwards followed by a leave fall. Twigs and branches of infected plants show an internal discoloration. Brown color streaks in vascular regions are visible on splitting the twigs lengthwise. The plants are subjected to water stress conditions and farms that have not taken any water retention measures demonstrate severe symptoms. The objectives of this study were to identify the causal organism(s) and provide recommendation to control the disease. Symptomatic twigs were surface sterilized and aseptically inoculated in to Potato Dextrose Agar (PDA) medium and incubated in room temperature at 27 ± 20^{o}C at normal light conditions to identify the organisam. Single colony forming units were prepared using dilution plate technique and purified culture was prepared. Colony characters were observed microscopically in one week old cultures and same culture plates were subjected to molecular analysis through Polymerase Chain Reaction and DNA sequencing by using ITS 1 and ITS 4 bi-direction. With respect to the morphology, culture plates were found to be white and they soon became black and formed a branched, mycelium. Black pycnidia were produced on the surface. Conidia were initially hyaline, unicellular sub ovoid to ellipsoidal with a granular content. Mature conidia were two celled and thick walled. The DNA sequence analysis through blast in NCBI confirmed the pathogen as *Lasiodiploidea theobromae* strain BT03 with 63% query value and accession was KM357551.1. This pathogen can be controlled via integrated management method, such as mulching, removal of symptomatic branches properly and foliar spraying with fungicide tebuconozole.

Key words: Die back, *Lasiodiploidea theobromae*, Mango, Tebuconozole

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