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STUDIES ON LONGITUDINAL SPLITTING OF BARK AND WOOD DISEASE IN ACIDLIME: ETIOLOGY, SCREENING OF BIOAGENTS AND FUNGICIDES AND PCR-RAPD ANALYSIS OF PATHOGEN

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ABSTRACT

Pathogen associated with longitudinal bark and wood splitting disease (LBWSD) of acidlime was isolated and identified as *Botryodiplodia theobromae* (ITCC Acc. No. 6004.05). Among ten isolates of *Trichoderma*, isolates TCT_{12} and TCT_6 recorded high percent inhibition of 36.22 and 34.67%, respectively against LBWP-4 isolate. In *In vitro* studies among the systemic fungicides, carbendazim and tridemorph were found very effective. Among the non-systemic fungicides, copper oxychloride was found very effective followed by captafol. Random amplified polymorphic DNA (RAPD) pattern was established for the 6 isolates of *Botryodiplodia theobromae.* These isolates were characterized using 10 random primers of OPM series, out of which 7 primers gave a total of 48 amplification products, showing 75% polymorphism. Genetic distance between each isolates was calculated, and cluster analysis was used to generate a dendrogram showing relationship among them. Similarity matrix thus produced indicated that maximum genetic variation observed between isolates of LBWP-6 and LBWP-2 (77.1%) closely followed by LBWP-3 and LBWP-1 (81.8%). Isolates LBWP-6 and LBWP-5 were genetically closer than any isolate with 50% similarity followed by LBWP-2 and LBWP-1 (51.7%). The gist of analysis is that the *Botryodiplodia theobromae* isolates formed into two genetically distinct closest having LBWP-1 and LBWP-2 in one cluster, LBWP-5, LBWP-6, LBWP-4, LBWP-3 in another cluster in which LBWP-3 and LBWP-4 did not resemble any other isolate

Keywords: Acid lime, Longitudinal Splitting of Bark and Wood Disease, *Botryodiplodia theobromae, Trichoderma* Isolates, Fungicides Screening, PCR-RAPD