Survey and Identification of Coinfecting Botryosphaeriales Causing Stem Canker Diseases of Eucalyptus camaldulensis in Ethiopia

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Abstract : Eucalyptus is the most widely planted forest tree species in the world. In Ethiopia, pathogenic fungi pose an increasing threat to Eucalyptus species. Due to limited research, there is insufficient information on the associated diseases and pathogens. This study investigated Eucalyptus diseases, the extent of their damage, and the causal fungal pathogens. A Eucalyptus disease survey was conducted in the Eucalyptus forestry areas of Ethiopia during the growth years 2019/20 and 2020/21. Disease assessment and sampling were carried out in eighteen plantations at nine locations. E. camaldulensis was the most dominant species planted in the surveyed areas. The field study shows a high incidence and severity of canker diseases. Diseased stem and branch samples were collected, cultured on malt extract agar media and studied. The results of morphological and ITS sequence analysis confirmed that the fungal species Neofusicoccum parvum, Lasiodiplodia theobromae, and Aplosporella hesperidica caused the observed canker symptoms. This is the first report of Lasiodiplodia theobromae and Aplosporella hesperidica causing diseases in Eucalyptus plants in Ethiopia. Changes in global climate and environmental factors, such as altitude, are believed to have a strong impact on the susceptibility of Eucalyptus plants to diseases. Strict quarantine practices and continuous monitoring of pathogenic and endophytic fungal species associated with Eucalyptus trees are issued to be prioritized to effectively control and manage the disease.

Keywords : Neofusicoccum, Lasiodiplodia, Aplosporella, pathogenicity, phylogeny, severity

Conference Title : ICMPP 2024 : International Conference on Mycology and Plant Pathology

Conference Location : Ottawa, Canada

Conference Dates : July 11-12, 2024