IMPACT: Journal of Modern Developments in Arts and Linguistic Literature (IMPACT: JMDALL)
Vol. 1, Issue 2, Dec 2017, 47-56

DIVERSITY OF PATHOGENIC FUNGI ON PLANTATION FORESTS OF NORTH AND NORTH WEST ETHIOPIA

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ABSTRACT

Plantation forests are cultivated forest ecosystems established, by planting introduced or indigenous species. Forest plantations in Ethiopia are mainly exotic genera of Eucalyptus, Cupressus, Casuarina, Pinus, and native Juniperus species. Plantations species have suffered in varying degrees of attack by disease causing agents, particularly the Amhara region is among the regions, with plantation forests that have in recent years been subjected to attack by diseases in Ethiopia. Plantation trees in commercial stands, farm lands and woodlots were surveyed in 20 selected areas of Amhara and Tigray, from May to June 2016 for disease symptoms. Tree samples showing clear disease symptoms, were collected and processed for identification. Leaf blight, leaf spot, tip blight and stem canker were the most common symptoms appeared during the survey period. A total of 42 isolates of fungi colonies were identified from 20 localities. A morphological feature of fungal isolates reveals, six fungal genera belonging to Alternaria, Dioplodia, Pestalotiopsis, Curvularia, Phoma and Penicillum were the cause of the disease symptoms. Among the isolates, 14 (33.3%) were Alternaria species, 15 (37.7%) were Phoma species, and the remaining 13 isolates were Diplodia 3 (7.2%), Pestalopsis 7 (16.7%), Curvularia 2 (4.7%) and Penicillum1 (2.4%). The result of the study shows leaf spot and stem canker is the most prevalent symptoms. Phoma lingam, Phoma glomerata, Alternaria Alternata, genera of Curvularia, Pestalotiopsis, and Penicillum including Diplodia were found to be, the cause of diseases of the trees. Pharma and Alternaria species were the most prevalent isolates, showing the majority of symptoms observed on plantations, were due to their co-infection. The pathogenictity result confirms, fungal isolates were the cause of the diseases. Fungal pathogens observed in this study need attentions, as they can cause severe damages to plantations during favorable environmental conditions. Most of the isolates were found seed pathogens, seeds need to be tested for quarantine fungi and sterilized before using for seedling, plantation at the nursery sites has to be assessed for disease symptoms and treated well before distribution to reforestation sites help prevent and control the spread of these fungal pathogens.

KEYWORDS: Leaf Spot, Phoma Soups, Pestalotiopsis Spp, A. Alternate, Curvularia Spp