

A Study on Soil Micro-Arthropods Assemblage in Selected Plantations in The Nilgiris, Tamilnadu

Authors : J. Dharmaraj, C. Gunasekaran

Abstract : Invertebrates are the reliable ecological indicators of disturbance of the forest ecosystems and they respond to environment changes more quickly than other fauna. Among these the terrestrial invertebrates are vital to functioning ecosystems, contributing to processes such as decomposition, nutrient cycling and soil fertility. The natural ecosystems of the forests have been subject to various types of disturbances, which lead to decline of flora and fauna. The comparative diversity of micro-arthropods in natural forest, wattle plantation and eucalyptus plantations were studied in Nilgiris. The study area was divided in to five major sites (Emerald (Site-I), Thalaikundha (Site-II), Kodapmund (Site-III), Aravankad (Site-IV), Kattabettu (Site-V). The research was conducted during period from March 2014 to August 2014. The leaf and soil samples were collected and isolated by using Berlese funnel extraction methods. Specimens were isolated and identified according to their morphology (Balogh 1972). In the present study results clearly showed the variation in soil pH, NPK (Major Nutrients) and organic carbon among the study sites. The chemical components of the leaf litters of the plantation decreased the diversity of micro-arthropods and decomposition rate leads to low amount of carbon and other nutrients present in the soil. Moreover eucalyptus and wattle plantations decreases the availability of the ground water source to other plantations and micro-arthropods and hences affects the soil fertility. Hence, the present study suggests to minimize the growth of wattle and eucalyptus tree plantations in the natural areas which may help to reduce the decline of forests.

Keywords : micro-arthropods, assemblage, berlese funnel, morphology, NPK, nilgiris

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