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Isolation and identification of soil micro fungi of semi natural montane forest and adjacent pine plantation in Peacock Hill, Pussellawa, NuwaraEliya district

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Soil microbial community structures and functions are the most rapidly responding biotic component of any terrestrial habitat. Soil micro flora and soil physicochemical properties were affected by the establishment of mono cultures such as Pinus spp. and *Eucalyptus* spp. In Sri Lanka there is little published literature on investigations of these changes due to the habitat destruction. Therefore the present study was carried out in an attempt to identify and compare the soil fungal diversity and potential decomposing abilityof the soils of a Pinus plantation and the adjacent, semi natural montane forest in Peacock hill, in Pussellawa. Soil samples (15 replicate samples) were collected following stratified random sampling from three sub sites of areas10m×15m. Comparative studies of fungi in each sample were carried out following the soil plate method. Pure substrates (starch, pectin, cellulose and lignin) were used to test the potential decomposing abilities and metabolic capacities of the fungi with more than 30% of frequency. Results showed that significantly higher fungal diversity in semi natural montane forest (32 different fungal spp.) than in the *Pinus* plantation (9 different fungal spp.) *Trichoderma* spp., *Mortierella* spp., *Penicillium* spp., *Acremonium* spp., *Aspergillus* spp., *Rhizopus* spp. and white sterile spp. were isolated at higher frequencies from semi natural montane forest. Frequently isolated fungal species from the Pinus plantation were *Mortierella* spp. and Dark sterile spp.*Penicillium* spp. and *Trichoderma viride* were common to both sites. Fungi isolated from both sites showed versatile abilities in utilization of many substrates such as starch, cellulose, lignin and pectin. The present study showed significantly negative impacts from exotic Pinus plantation on fungal community structure in the particular sites.

Keywords: Fungi, monoculture, semi natural montane forest soil, *Trichoderma spp.*

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