D-09: Some aspects of the population ecology of earthworms in the Central Region of Sri Lanka

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Earthworms which are one of the most important macrofaunal groups of the soil ecosystem, have not been investigated in detail in Sri Lanka, except for taxonomic work.

The present study on the population density of earthworms in 7 different habitats in the Wet and Intermediate zones was carried out during the wet and dry seasons of 1990/1991.

The habitats studied in detail were coconut estates grasslands, homestead gardens, marshy areas, rubber estates, tea estates and forest floor.

Random quadrat sampling was done using 50 cm x 50 cm plots. 0.55% formalin solution was used to bring the earthworms to the surface.

Pheretima spp. and *Megascolex* spp. were found to be common in these habitats. The population density of earthworms varied from 248 individuals m^{-2}- (Tea estate) to 744 individuals m^{-2} (Forest floor) in the wet season and 220 individuals m^{-2} (Tea estate) to 544 individuals m^{-2} (Rubber estate) in the dry season. The biomass of earthworms varied from 61.36 g^{-2} (Tea estate) to 195.31 g^{-2} (Forest floor) in the wet season and 36.80 g^{-2} (Tea estate) to 176.16 g^{-2} (Rubber estate) in the dry season.

In relation to earthworm abundance, habitats can be graded as follows: Forest floor/rubber estates, marshy areas, homestead gardens, grasslands, coconut estates, and tea estates. The differences in population density was studied in relation to the temperature, pH, type of the soil and rainfall.