

Texture Weighted Nematode Population with Variation of Soil Depth and Host Ecosystem in Coochbehar District of West Bengal

Dhiren Chettri*, Amit Kr. Das and Ajoy Kr. Mukhopadhyay

*Department of Agricultural Entomology; Faculty of Agriculture; Bidhan Chandra Krishi Viswavidyalaya (Agricultural University); Mohanpur; 741252; West Bengal (INDIA)
E-mail: dhirenchettri@gmail.com*

Abstract—*To meet the purpose an investigation was undertaken through a collection of 42 soil samples from three different plant habitats, i.e., cultivated land, grassland and woodland areas covering the entire geographic areas of the Coochbehar district of West Bengal. Sampling was conducted at district map based pre-fixed sampling spots from two soil strata, viz., 5-20 cm and 21-40 cm (within a span of 15 Days) during May, 2015 and were subsequently analysed in the laboratory at the Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal, India. Experiment results revealed a total of fifteen (15) different nematode genera comprising both the plant parasitic and free living were recorded irrespective of depth, vegetation type and textural class of the soil. Plant feeding nematodes, *Meloidogyne incognita/javanica*, *Helicotylenchus* sp., omnivore nematode, *Dorylaimus* sp., predatory nematode, *Mononchus* sp. and bacterial feeder, *Rhabditis* sp. were present in all soil ecosystems with variable population densities. However, experimental results also revealed that with the change in soil depth their ability to survive in different vegetation type was also found to be different. Likewise, among all the free living nematodes, the omnivore genus *Dorylaimus* was recorded in all the soil ecosystems and ranges of soil depth under investigation. It has also been seen that in most of the ecosystem nematode population density is abundant in upper layer (5-20cm) of soil as compared to that of lower (21-40cm) strata. The result of co-relation analysis showed that a higher*

number of plant parasitic and free living nematodes were positively correlate with the sand content of the soil whereas, clay content showed a negative co-relation with maximum nematode genera recorded under investigation irrespective of soil depth and vegetation type. Few nematodes are correlated with the silt content of the soil.

Keywords: *Nematode; Soil depth; Cultivated land; Grass land and Forest land.*