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Depth wise variations of soil physico-chemical properties and distribution of *Cyphoderus javanus* in different sites of Thiruvananthapuram district

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Abstract

The present study was undertaken to determine the influence of depth on soil physico-chemical properties and distribution of a tropical soil collembolan *Cyphoderus javanus* in various sites of Thiruvananthapuram district (Neyyar, Vithura and Agastyavanam Biological park) on the basis of altitude. During the study period, soil edaphic factors like temperature, pH, moisture, organic carbon, exchangeable acid, exchangeable base, gravel, slit, sand and clay content in the three study sites exhibited slight variation according to depth. Highest value of chemical factors like nitrogen, phosphorus, potassium, calcium and magnesium were noticed in upper soil layers and minimum value in lower layers of soil. At all three sites, the mean population density of *Cyphoderus javanus* was found to be higher during post monsoon season and lowest during pre-monsoon season.Vertical distribution pattern of *Cyphoderus javanus* during various seasons at three sites were noticed, in which post monsoon period showed greater population density, followed by monsoon and pre-monsoon. The majority of collembolan was recorded higher in top layer soil than deeper layers of soil in all three sites.These results suggest that the depth wise and seasonal changes as well as soil physico-chemical factors play an inevitable role in controlling the population densities and diversity of *Cyphoderus javanus*along with habitat differences.

Keywords: *Depth, Vertical migration, Soil collembolans, Population density*

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