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Seasonal Variations in Density of *Cyphoderus javanus* with Special Reference to Soil Physico-Chemical Factors

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Abstract

Soil is a key element of the ecosystem capable of providing resources essential for the development and survival of various microorganisms. Collembolans are the most abundant ubiquitous soil organisms in terrestrial ecosystems and regarded as ideal biological indicators of soil fertility and ecosystem health. The present investigation has been undertaken to assess the role of soil physio-chemical properties in various seasons on the population density and distribution of *Cyphoderus javanus* in three different places of Thiruvananthapuram district. The results of present study showed that soil edaphic and chemical factors showed site wise and season wise fluctuations. At three various sites, mean population density showed highest peak in top soil layer during post monsoon season (Site I: 26±1.00; Site II:23.6±0.57 and Site III:15.6 ±1.52) and lowest population peak during pre-monsoon season (Site I :16.3±1.52; Site II:11.3±1.73 and Site III :7.3 ±0.57) and also varied from site to sites. An evident pattern of vertical migration of *Cyphoderus javanus* were noticed with changing edaphic factors like soil temperature and moisture. PCA results revealed that moisture, temperature, exchangeable acid, organic carbon, gravel, clay, nitrogen, phosphorus, calcium and magnesium are the prime parameters influencing the density and vertical distribution of *Cyphoderus javanus* in selected sites of Thiruvananthapuram District