

---

## **A preliminary study on Collembolans associated with three vegetable crops grown at selected locations in Southern Sri Lanka**

W.T.N. Thushangi, W.T.S. Dammini Premachandra\* and M.G.V. Wickramasinghe

*Department of Zoology, University of Ruhuna, Wellamadama, Matara, Sri Lanka.*

Collembolans are one of the invertebrate groups inhabiting in soil. They serve as decomposers and are important as soil quality indicators. To date, Collembolans in vegetable fields are poorly known in Sri Lanka. Collembolans inhabited each of the three, Brinjal, Okra and Tomato fields, in Denipitiya, Labuduwa and Ridiyagama, respectively, were investigated, during July- September 2013. At each location, a 100m<sup>2</sup> plot was selected with respect to each vegetable field and ten soil corer samples, each of 500g, were taken at random, fortnightly. The Collembolans in all these soil samples were extracted using floatation method and numbers in the supernatant was counted using a stereo-microscope in a well plate. Identification of Collembolan was done upto the generic level using taxonomic keys. Eight genera, *Cyphoderus*, *Entomobrya*, *Folsomia*, *Guthriella*, *Isotomodes*, *Neaura*, *Podura* and *Tullbergia* in six families, Cyphoderidae, Entomobryidae, Isotomidae, Neuridae, Onychiuridae and Poduridae, were detected. The highest Collembolan diversity ( $6.33 \pm 0.17$ ) and abundance ( $395.33 \pm 0.90$ ) were recorded at Labuduwa followed by Denipitiya. *Cyphoderus*, *Folsomia*, *Guthriella*, *Isotomodes*, *Neaura* and *Tullbergia* were common at all the three locations. In contrast, *Entomobrya* was restricted to Labuduwa. *Podura* occurred in Labuduwa and Ridiyagama while *Tullbergia* was prevalent at Labuduwa and Denipitiya. *Cyphoderus*, *Folsomia*, *Guthriella*, *Isotomodes*, *Neaura*, *Podura* and *Tullbergia* were common at three vegetable fields. *Cyphoderus* showed the highest abundance ( $234 \pm 4.09$ ) at Labuduwa ( $P < 0.002$ ) whereas *Folsomia* acquired the second highest ( $219.1 \pm 1.12$ ) at the same location. The abundance of *Isotomodes* ( $19.33 \pm 0.66$ ) *Podura* ( $51.6 \pm 1.21$ ) and *Entomobrya* ( $9.66 \pm 0.06$ ) was the lowest ( $P < 0.0001$ ) at all locations.

**Key words:** Abundance, diversity, invertebrates, vegetables

\*dammini@zoo.ruh.ac.lk