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## PROCEEDINGS





## **Comparative study of insect diversity in an abandoned chena and vegetable agro-ecosystem in Dambulla, Sri Lanka**

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Insects are the most diverse group of organisms in the world and they play a major role in ecosystem diversity and sustainability. The composition of plants in an ecosystem could be a major determinant on the insect community because plants provide food, habitats and shelter for insects. The effect of agricultural practices on the diversity of insect fauna is not fully understood in the local context. Therefore, this study was conducted to assess insect diversity and abundance in two different ecosystems: an abandoned chena (5Ar) and a vegetable agro-ecosystem located in Dambulla, Sri Lanka. Soil dwelling insects and aerial insects were collected using ten pitfall traps (200 ml) and two light traps (12V, 1.5W) installed in each location (300m apart). Samples were taken after 24 hours at one month intervals. The number of insects trapped was compared using poisson regression analysis and the diversity was compared using Shannon diversity and Bray Curtis similarity indices. The evenness of families were assessed using Pielou's index. A total of 2,505 insects belonging to 54 families and 11 orders were collected during the study. The highest soil dwelling and aerial insect diversity was recorded in the abandoned chena ( $H' = 0.498$ , 0.878), it followed vegetable agro-ecosystem ( $H' = 0.380$ , 0.782). The evenness of the insect fauna of abandoned chena and vegetable agro-ecosystem was 0.536 and 0.442, respectively. Bray Curtis similarity index of insect community between vegetable agro-ecosystem and abandoned chena ( $D = 25.6\%$ ). The insect abundance was significantly high ( $p < 0.05$ ) in the abandoned chena, followed next by the vegetable ecosystem. However, over time, it was not significantly different from the insect diversity in the chena. It is concluded that the abandoned chena can be used to restore and conserve the insect diversity.

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