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Guild diversity of insects associated with paddy fields under two different cultural practices in Thenmaradchi division, Jaffna, Sri Lanka

T. Aranraj*, and R. Gnaneswaran

Department of Zoology, Faculty of Science, University of Jaffna, Sri Lanka

Abstract
This study on insect communities in rice agro-ecosystems was conducted in Thenmaradchi Division, Jaffna, Sri Lanka, with the objective of comparing the diversity of insects and their ecological guilds associated with paddy in different cultural practices P1 (traditional agro practices with no agrochemical usage) and P2 (conventional agro practices with agrochemical usage). Periodical insects were collected by sweep net from demarcated sub divided units (4 × 1 = 4m^2) in P1 and P2 from November 2017 to March 2018. Collected insects were taxonomically identified and categorized into different guilds. The abundance of each group was also recorded. A total of 1647 (971 from P1 and 676 from P2) insects were collected during the period and categorized in to 09 orders and 33 families. 51 species were recorded from P1 and 43 from P2. The Simpson's and Shannon wiener indexes for P1 were 2.957 and 0.920 respectively and for P2 were 1.214 and 0.912 respectively. They were then categorized into various guilds such as phytophagous pest species [P1 - 60.26%; P2 - 56.80%], Predator [P1 - 18.48 % (n=180); P2 - 18.49 % (n=125)], Parasitoid [P1 - 0.92%; P2 - 2.66%] and Scavenger [P1 - 18.06%; P2 - 18.93%]. The number of phytophagous species from traditional and conventional practices were respectively 21 and 19. Whereas the predator species collected from traditional and conventional practices were 19 and 13, respectively. And Order Hemiptera contributed to the highest number of individuals in pest and predatory guilds both types of paddy fields. Even though the numbers are comparatively higher in traditional practices, but it is not significant. From the findings there were no significant guild diversity of insects found in traditional and conventional practices, so stable relationship could be maintained between rice insect pests and their predators through minimal biocide applications. This information can be incorporated into integrated pest management.

Keywords: Conventional, Integrated Pest Management, Paddy, Phytophagus, Traditional,

Corresponding Author: aranraj2012@gmail.com