ISAE 2022
Faculty of Agriculture
University of Ruhuna
Sri Lanka

Proceedings of the International Symposium on Agriculture and Environment 2022

ISAE 2022

"Advanced Technologies, Training and Research for Optimizing Agricultural Production"

16th June 2022
Faculty of Agriculture
University of Ruhuna
Sri Lanka

ID 97

Records of fruit flies (Diptera: Tephritidae: Dacinae: Dacini) in a selected mango (*Mangifera indica* L.) (Karutha kollomban) cultivation in Ambalanthota, Sri Lanka

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Abstract

Fruit flies are one of the widely distributed insect pests and they mostly damage economically important fruits and vegetables in the tropical region. However, there are no recently published reports of fruit fly assemblages associated with commercial fruit plantations in Sri Lanka. Hence, the present study aimed to investigate the abundance and diversity of fruit flies attracted to the methyl-eugenol field traps in a selected mango cultivation ("Karutha kollomban" variety) in Ambalanthota, Sri Lanka. Six fruit fly traps (5 cm diameter, 10 cm height, two circular opening-1mm radius and a methyl-eugenol coated sponge) were hung (1.5- 4 m above the ground level and 20m inter-trap distance) in six mango trees which were located in the middle of each randomly selected six sampling plots (400m^2) in the cultivation (0.54 ha). Trapped flies were collected twice a month from October to December 2021 (during the fruiting season) replacing new traps in each sampling round. Collected samples were identified using standard taxonomic keys by observing under the light microscope (Nikon-ECLIPSE-E100) (10×4). Two indices; Simpson Population Dominance Index and the Abundance Index were calculated. The variation of species abundance was compared using one-way ANOVA test. Seven fruit fly species; *Bactrocera dorsalis* (Hendel), *B. kandiansis* (Drew and Hancock), *B. correcta* (Bezzi), *B. latifrons* (Hendel), *B. tuberculata* (Bezzi), *B. nigrofemoralis* (White and Tsuruta) and *B. cacuminata* (Hering) were recorded in this study. Out of the total 803 specimens examined, *B. dorsalis* had a significantly higher abundance (412, 51.31%) ($P<0.05$) than other species, and *B. cacuminata* had the lowest abundance (26, 3.24%). The highest Simpson Dominance index (0.26) was recorded for *B. dorsalis* while other recorded six fruit fly species were less dominant in the selected mango cultivation. Study findings will be important for fruit cultivators to design and implement fruit fly control measures.

Keywords: Abundance, Dominance, Fruit flies, Mango plantations

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