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"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

The relative abundance and association between fruit flies, *Bactrocera* spp. in Sudan

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Abstract

Flies (Diptera: Tephritidae) are the most destructive insect pests of fruits and vegetables in the world. Fruit and vegetable production is one of the most important agricultural subsectors in Africa, providing income, creating employment opportunities, and enhancing food and nutritional security. Sudan has a vast and divers fruit and vegetable production zones which enable production of horticultural crops all around the year Fruits and vegetables are important components in human nutrition as they are important source for minerals and vitamins. In Sudan the production of fruits and vegetables is affected by fruit flies (*Bactrocera* spp.) that may play a major role in reducing production and limiting the exportation capabilities. The objective of the present study was to investigate the relative abundance and association between fruit flies (*Bactrocera zonata* and *Bactrocera invedens*) (Diptera: Tephritidae). Several field surveys were conducted in Wad Medani Area, Gezira State, Sudan during season 2016/2017. Three locations were selected in the study area and three sites were selected at each location. An orchard was randomly selected at each site and five directions at each orchard were determined. Methyl Eugenol trap was used to estimate the seasonal abundance of the fly among locations and sites. Data were subjected to descriptive analysis and regression analysis. The relative abundance of *Bactrocera dorsalis* (76.9 %) was higher compared to the *Bactrocera zonata* (23.1 %) at Wad Medani area, Gezira State, Sudan throughout the season 2016/17. In conclusion, the finding of this study could be utilised in sustainable pest management strategy for fruit flies (*Bactrocera* spp.) in the agro-ecological system of Gezira State, Sudan

Keywords: Abundance, *Bactrocera*, fruit fly, methyl eugenol

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