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Studies on Population and Management of Melon Fruit Fly Bactrocera cucurbitae (Coquillett) in Vegetables Agro-Ecosystem in District Hyderabada

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Abstract : The Melon Fruit Fly Bactrocera cucurbitae (Coq.) belongs to family: Tephritidae order: Diptera and is distributed throughout the vegetable growing areas of Pakistan. The B. cucurbitae is injurious pest of more than 125 species of the vegetables throughout the world. In the present studies we investigated the population of this important pest in cucurbit crops and influence of abiotic parameters such as: temperature, relative humidity and rainfall. The study was carried out at two different locations of District, Hyderabad. The locations were Jeay Shah and Dehli farm where three cucurbit vegetable crops, such as bottle gourd (Lagenaria siceraria), bitter gourd (Momordica charantia) and ridge gourd (Luffa acutangula) were grown. The traps were baited with Cue-lure and deployed at three meter height in the all locations from 01.01.2015 and up to 30.06.2015. Results revealed that overall significantly higher ($P < 0.05$) population was recorded on L.acutangula, M.charantia and L.siceraria (130.64, 127.21, and 122.91), respectively. However, significantly higher ($P < 0.05$) population was observed on L. acutangula (339.4±22.59) during the 4th week of May 2015 followed by M. charantia (334.6±22.76) L. siceraria (333.2±20.13). Whereas; lowest population was recorded on L. siceraria (5.8±1.39) followed by L. acutangula and M. charantia (6.8±0.80g, 8.0±1.30) respectively during the 4th week of January. The population of B. cucurbitae was significantly correlated with the temperature while negatively correlated with relative humidity. Meanwhile in the parasitism preference experiment pupal parasitoid Dirhinus giffardii showed significantly higher ($P<0.05$) parasitization when the pupae of B.cucurbitae were reared on Cucumber (Cucumis sativus) (24.8±0.48) and also female were yielded from pupae reared on C.sativus under no choice experiment. Similarly higher parasitization and female were recovered when pupae were supplied C. sativus under free choice experiment. Results of the present investigation would be useful in developing a sustainable pest management strategy in the vegetable agro-ecosystem.

Keywords : Dirhinus giffardii, Bactrocera cucurbitae Cucumis sativus, diptera, free choice, parasitization
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