Novel Suction-Bait Trap to Manage Infestation of Melon Fruit Flies in Cucurbits

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Melon fruit fly, Bactrocera cucurbitae (Coquillet) (Diptera:Tephritidae)is a serious pest of cucurbitaceous vegetables in Kerala. The study is to find the efficacy of a newly designed suction-bait trap using various baits to trap and control the population of Bactrocera cucurbitae in the agricultural fields of Thengode of Ernakulam district.Minor objectives:(i)To design a new model of suction trap to catch and kill melon fruit flies,(ii)To identify the effectiveness of pheromone, food and light,(iii)To identify the effectiveness of the combination of food, pheromone and light attractants in newly designed suction-bait trap. The sampling study shows an average of 20.8 insects are collected. The study also shows that the flies were more active during early morning than late evening hours. The suction trap was more effective than the passive pheromone trap. Pheromone could attract only male flies. The use of water/oil on the base tray inside the net bag is very effective in killing the flies.The unpleasant odour produced by the flies trapped, acts a warning signal to other flies, so cleaning of the trap was found to be necessary. The combination of protein powder- palm wine- sugar solution -Ocimum tenuiflorum (krishnatulsi) was found to be very effective than the food mixture without protein powder. Yellow fluorescent tubes were found to be more effective than u-v light.Food-pheromone-light combinations as an attractant results in trapping more flies,(male as well as female). This gave production almost equal to when pesticides were used. At present melon fruit flies control relies mainly on chemical insecticides which can significantly alter ecosystems. The trap is made up of easily available materials, a common man can make it easily.

Awards Won:

Second Award of $1,500

China Association for Science and Technology (CAST): Award of $1,200