

IPM FOR CUCURBIT FRUIT FLY

CCARI/Success Story/2022-6

PHEROMONE-BASED IPM TECHNOLOGY FOR THE MANAGEMENT OF CUCURBIT FRUIT FLY (*ZEUGODACUS CUCURBITAE*)

Authors : Dr. Maruthadurai R., Senior Scientist (Agricultural Entomology)
Dr. R. Ramesh, Principal Scientist (Plant Pathology)

PROBLEMS/CONSTRAINTS

Melon fly, *Zeugodacus cucurbitae* (Diptera: Tephritidae) (Coquillett), is a severe and economically significant insect pest of cucurbitaceous crops, with cucumber being one of its most preferred hosts. The polyphagous melon fly damages 136 plant species from 62 plant genera and 30 plant families, resulting in a significant yield loss of 30 to 100%. Melon fly damage is the major limiting factor in obtaining good quality fruits and high yield in cucumber. Rampant use of chemical insecticides for the management has led to several problems associated with pesticide residues affecting human health and the environment. Lack of awareness among the farmers on the use of pheromone-based IPM Technology.



INTERVENTIONS

A community-based extension approach was used to mass trapping cucurbit fruit fly *Z. cucurbitae* through pheromone traps. The pheromone-based IPM technology for the management of melon fly for two years during 2017-2019 was demonstrated and popularised. Farmers were trained to prepare cue lures and traps. Eight on-field demonstrations covering approximately an area of 25 ha both in North and South Goa district were done. The demonstration provided to the farmers on pheromone traps, trap servicing, lure placement, replacement and identification of fruit flies etc. Besides, a total of 615 cue lure traps were distributed to 150 farmers. Further other IPM practices like Phyto-sanitation, collection and destruction of affected fruits were demonstrated to the farmers. NABARD funded this project. The weekly observation was recorded on the number of attracted fruit flies in the pheromone traps.



Demonstration on use of cue lure traps for melon fly

IMPACT

Farmers were trained to preparation cue lure traps. The cumulative damage in the control plot was 30%, while the average fruit fly infestation was 10% in the pheromone implemented field. Loss in yield of 20 % was saved due to treatment. We have popularized the pheromone technology and created awareness among the farmers for the eco-friendly management of melon fly. Efficacy of cue lure pheromone traps in cucurbitaceous vegetables showed that maximum attraction of 120 fruit flies/trap was recorded in the last week of July. The maximum attraction of melon flies was found during July and August.

The average yield of cucumber is 27 t/ha, which due to infestation was reduced by 30%. Due to the recommended treatment the reduction in yield was reduced by 20%. Loss in yield that was saved due to treatment is 20% (5.4 t/ha), i.e. an estimated gain of Rs 37800 (@7000/t) with a cost of treatment Rs 4500/ha.

Farmers are very much interested in adopting eco-friendly technology in managing melon fly. The cue lure based pheromone traps can be easily prepared by the farmers. There is a greater scope to extend the community extension approach in mass trapping cucurbit fruit fly *cucurbitae* through pheromone traps in other areas.



Distribution of cue lure pheromone traps