

# Controlling Melon Fruit Fly Infestations: On-Farm Model

## The Situation

In Hawai'i, the melon fly is a major pest of cucurbit vegetables and tomatoes. Crop losses from melon fly range from 10 to 100%. Present control measures consist of using male annihilation cue-lure traps, GF-120 protein bait sprays, Amulet C-L bait stations, and sanitation and insecticide applications to the crop.



Melon fly laying eggs in zucchini

Melon fly bait sprays are commonly applied to plants found in crop borders, where adult flies may seek shelter (roost).

The establishment of preferred roosting hosts in crop borders may help improve suppression of the melon fly by providing sites for bait spray applications. However, this could result in extra work and expenses for growers, thus the identification of natural best-roosting hosts plants in and around a farm is needed to more effectively control melon fly populations.

The Cooperative Extension's Response

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In July 2019, on-farm trial demonstrations (3 farms) were conducted in close proximity to zucchini field crops at Kula Agricultural Park to identify natural roosting host plants of the melon fruit fly and apply a control strategy. Thus, growers can learn by hands-on activities to identify



Melon fly traps set up

melon fly roosting plants and control more efficiently

melon fly populations. Farm owners and workers were trained how to:

- Identify where the melon fly is roosting in and around the farm.
- Monitor melon flies in potential roosting host plants using Torula yeast in multi-lure traps.
- Apply melon fly control strategy (Amulet C-L bait stations) only in identified best roosting hosts plants (avocado, mango, castor oil and Koa-Haole trees).
- Evaluate melon fly damage in the zucchini crop.

## Impact & Outcomes

The idea behind the on-farm trial demonstrations was to have model farms with a successful melon fly control strategy to demonstrate to other growers that identifying melon fly roosting plants may increase the effectiveness of melon fly control.



Melon fly control strategy

The outcomes of this project were:

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- Farm owners and workers learned how to identify melon fly roosting plants and the importance of it, monitor melon fly populations, apply melon fly control methods, and evaluate melon fly damage.
- Growers realized that using melon fly control strategies can reduce melon fly infestations (Figure 1) and crop losses from 80% to less than 5%.
- 99% of farm owners and workers increased their knowledge of melon fly management strategies.
- 100% of the farm's owners adopted the fruit fly management strategies on their farms.
- The number of interested growers joining the project doubled.

## Controlling Melon Fruit Fly Infestations: On-Farm Model - continued



Melon fly monitoring



No damaged fruit

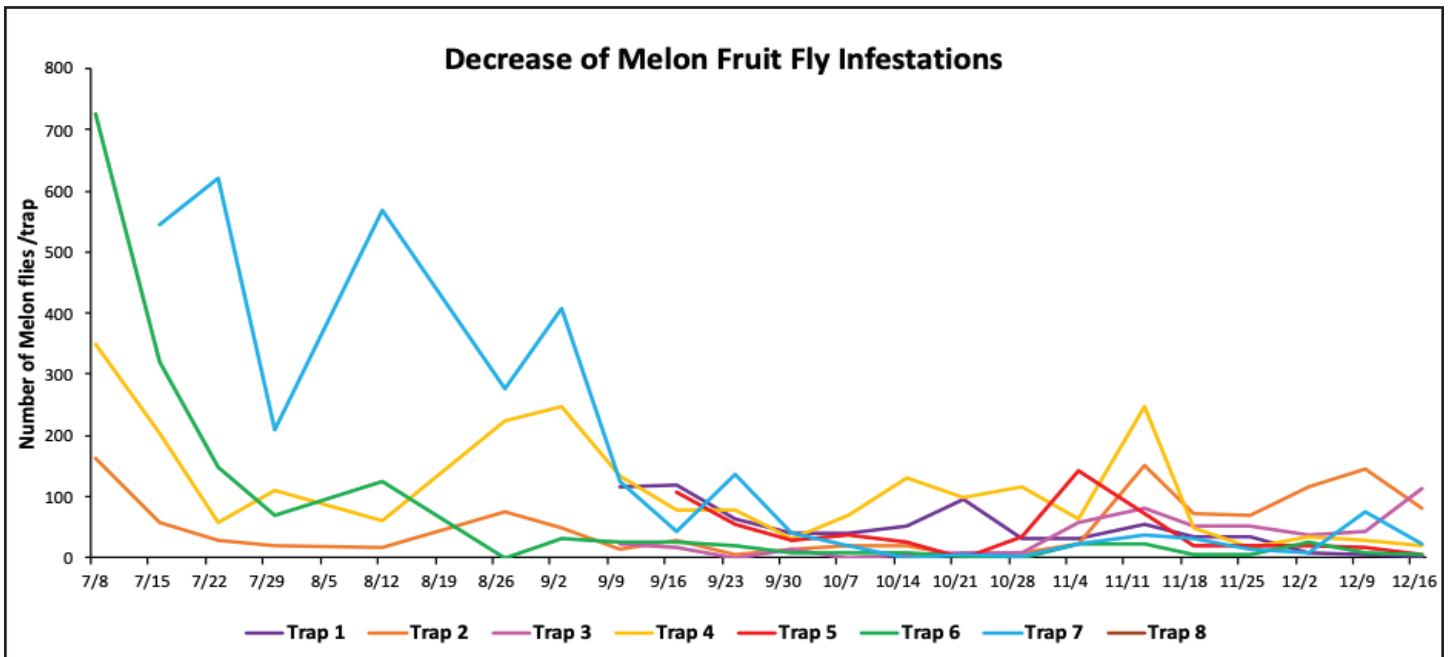


Figure 1. Melon fly monitoring in roosting hosts plants after the control strategy was applied at the on-farm demonstration trial.

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