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Pest Fruit Flies and Green Waste in Palau

ABSTRACT

Invasive species can have negative effects on human food security, especially on an island. Three species of fruit flies are considered pests in Palau. They reproduce and develop by laying their eggs in ripened fruits and vegetables and have been observed congregating in drainages and garbage disposals. Fruit flies have caused over 70% fruit loss in Palau. The four species of fruit flies found in Palau are *Bactrocera frauenfeldi*, *Bactrocera dorsalis*, *Bactrocera umbrosa*, and *Bactrocera calophyll*, a non-pest species. Depending on the species, fruit flies can lay between 50 and 500 eggs, and take 12 to 28 days to develop into an adult.

Green waste, in combination with high precipitation, is believed to be a major vector in the successful spread and proliferation of pest fruit flies. This two-part study will assess a new trapping method, and determine if green waste increases the number of trapped flies. Palau Community College (PCC) has developed an efficient and affordable lure for fruit flies using disposed yeast collected from a local brewery. This study will compare two types of traps used with this locally made bait. The first trap is composed of a modified reused water bottle, filled with bait, and the second uses a 3D-printed attachment to the same type of water bottle. The study will compare the success of catching fruit flies of both traps, and give us solutions that may control the reproduction rate of fruit flies in Palau.

Keyword: Fruit flies, *Bactrocera frauenfeldi*, *Bactrocera dorsalis*, *Bactrocera umbrosa*, *Bactrocera calophyll*, Green waste

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