

## Evaluation of pest free production site of papaya orchard

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### Abstract

Taiwan is the epidemic area of melon fly (*Bactrocera cucurbitae* Coquillett) and oriental fruit fly (*Bactrocera dorsalis* Hendel), both of which can spawn in papaya. Papaya is subject to quarantine operations during export, thus the quality and sales of papaya can be significantly affected. The net house cultivation in Taiwan has been developed to prevent the spread of Papaya ringspot virus. Perhaps this cultivation method might provide a pest free production site for papaya in order to avoid quarantine operations. In this study, a net house with strengthen structure and insect-preventing channel has been installed in Liugui District of Kaohsiung City since 2015. In this net house, we hang the traps containing cuelure or methyl eugenol, and yellow sticky boards to monitor the invasion of *B. cucurbitae* or *B. dorsalis*. Once the adult flies were trapped, we immediately hang the trap containing yeast extracts to evaluate the invasion of female adults. In the area outside the net house, it was also monitored with cuelure and methyl eugenol. However, the melon or oriental fruit flies were still captured within the net house due to breaking holes on July 25 and December 28, 2016, September 15 and October 16, 2017, and February 27, 2018. After repairing holes in the net house, additional triple doors at the entrance and exit were set up, and implementing new operation that double doors be not opened at the same time. Until March 14, 2019, no melon or oriental fruit flies were captured for more than one year. This result has been consistent with the requirements of the Council of Agriculture, Executive Yuan, Taiwan. Based on this study, the setting of good facilities and the implementation of epidemic prevention measures can effectively prevent melon and oriental fruit flies from entering the net house with strengthen structure. In the future, if the professional cultivation area of papaya can be set up, the net house with strengthen structure and insect preventing channel will provide good agricultural practices and hence the concept of establishing pest free production sites of papaya is practical.

Key word: pest free production site, papaya (*Carica papaya*), *Bactrocera cucurbitae* Coquillett, *Bactrocera dorsalis* Hendel, net house with strengthen structure

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