

Investigation of Specific Pest and Ladybird Beetles on Atemoya Orchard between Different Farming Types in Taitung

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Abstract

This study investigates the population dynamics of specific pests and natural enemies in atemoya orchards during various growth stage from 2020-2021. It also analyzes the composition and diversity of ladybirds beetles species under different cultivation methods. The results show that populations of pests such as thrips, mealybugs, lepidopteran insects, and oriental fruit flies, along with ladybirds beetles are 1.9-4.6 times higher in organic farming orchards compared to conventional framing orchards. Conversely, populations of whiteflies, spider mites, and predatory mites are 1.9 to 5.5 times higher in conventional farming orchards than in organic ones. The survey identified a total of 18 genera and 24 species of ladybird beetles, including two phytophagous and one mycophagous species, with the remainder being carnivorous. Organic farming orchards exhibit both higher populations of ladybird beetles (2.2 times) and greater diversity of species (1.1 times). Regardless of the farming method-conventional or organic- the abundance and diversity of ladybirds beetles collected during the fruit harvesting period are higher. Furthermore, *Sasajiscymnus tainanensis* (Ohta) was found to be the dominant species at each growth stage in conventional farming orchards. Further research is needed to establish its ecological characteristics and evaluate the feasibility of introducing it for pest control in conventional orchards.

Keywords: Organic Farming, Atemoya, Ladybird beetles, Pests, Agroecosystem

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