

APPLICATION OF INTEGRATED PEST MANAGEMENT PACKAGE IN LONGAN PRODUCTION IN THE SOUTH OF VIET NAM

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ABSTRACT

The longan has been ravaged by various pests including the longan gall mite *Eriophyes dimocarpis*, litchi stinkbug *Tessaratoma papillosa*, litchi leafminer *Conopomorpha litchiella*, Yellow peach moth *Conogethes punctiferalis*, and many others. This paper evaluated the benefits of using an integrated pest management (IPM) package composed of using fertilizers with compost inoculated with the antagonistic fungus, *Trichoderma* sp., pruning and destroying infected shoots after harvesting, setting up light and/or pheromone traps, protein bait, Southern Horticultural Research Institute (SOFRI)-ant baits; and spraying the trees with *Beauveria bassiana*, *Paecilomyces* sp., or *Metarhizium* sp., sulfur, and neem oil. Field trials were conducted at two longan plantations (0.5 ha each) in Tien Giang and Vinh Long provinces from January 2016 to September 2018. Data were collected from two plots from within the 2 plantations: 1) the IPM plot (applying the IPM package), and 2) the control plot (applying farmer practices). Our study revealed that, on average, the IPM package plots significantly reduced the percentage of infected fruit rot, mealybugs, oriental fruit flies, and fruit borer infestations as compared to the control plots at all development stages of the tree. Population of natural enemies of the IPM package plots were higher than the non-IPM plots. Fruit quality of the IPM plots increased as compared to the control plots. Fruit sizes, on average in the IPM package were 11.64 g/fruit and 12.51 g/fruit, bigger than the control plots at 10.15 g/fruit and 10.16 g/fruit in Tien Giang and Vinh Long, respectively. The IPM package reduced the times of pesticide spraying (3–4 times) compared to the control plot. Profit rate on the IPM package was 82.07% and 86% higher than the control at 76.26% and 79% in Tien Giang and Vinh Long, respectively. This implies a high economic benefit from the application of the IPM package and longan farmers would profit significantly if the IPM package is applied on a widescale in longan growing areas in Vietnam.

Keywords: longan, integrated pest management, IPM, pests, diseases