EFFECTIVENESS TEST OF BIOPESTICIDE PAPAYA LEAVES EXTRACT AND *Bacillus thuringiensis* ON THE BIOLOGICAL COMPONENTS OF ARMYWORM (*Spodoptera litura*) IN LABORATORY

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ABSTRACT

This study aims to determine the effectiveness of papaya leaves extract (*Carica papaya* L.) and *B. thuringiensis* biological agent in controlling armyworm (*Spodoptera litura*). The research was conducted at the Plant Protection Laboratory of UPN "Veteran" Yogyakarta, in May-July 2024. This research uses a completely randomized design (CRD) consisting of 10 treatments. The treatments are as follows: Negative control (no treatment), positive control using synthetic insecticides, P1 concentration of papaya leaves extract 30%, P2 concentration of papaya leaves extract 40%, B1 concentration of *B. thuringiensis* 3 mL/litre, B2 concentration of *B. thuringiensis* 5 mL/litre, K1 combination of papaya leaves extract 30% and *B. thuringiensis* 3 mL/litre. *thuringiensis* 3 mL/litre, K2 combination of papaya leaves extract 30% and *B. thuringiensis* 5 mL/litre, K3 combination of papaya leaves extract 40% and *B. thuringiensis* 3 mL/litre and K4 combination of papaya leaves extract 40% and *B. thuringiensis* 5 mL/litre. Each treatment was repeated 3 times. The data obtained were analyzed using ANOVA (Analysis of Variance) 5%, the results obtained showed significant differences, so further tests were carried out using the LSD method at the 5% level. Treatments C1 (profenofos insecticide) and K4 (combination of papaya leaves extract 40% and *B. thuringiensis* 5 mL/litre) increased larval mortality, death rate, and insecticide effectiveness. These treatments also gave the best effect in suppressing the percentage of larvae becoming pupae, the percentage of larvae becoming imago, and larval feeding capacity.

Keywords: *papaya leaves extract, B. thuringiensis, armyworms*