

Pengaruh Variasi Konsentrasi Ekstrak Daun Pepaya Terhadap Mortalitas dan Aktivitas Makan Ulat Grayak (*Spodoptera litura* F.)

Oleh: Rizal Zaka Nurhakim
Dibimbing oleh: R. R. Rukmowati B.

ABSTRAK

Ulat grayak (*Spodoptera litura* F.) dapat menyebabkan kehilangan hasil hingga 80%. Pengendaliannya dapat menggunakan pestisida nabati dengan bahan dasar daun pepaya. Tujuan penelitian untuk mengetahui konsentrasi paling efektif dari ekstrak daun pepaya untuk mengendalikan hama ulat *S. litura*. Penelitian disusun menggunakan Rancangan Acak Lengkap dengan 5 perlakuan (kontrol aquades, kontrol deltametrin, ekstrak daun pepaya 10%, 20%, 30%) dengan 4 ulangan, uji pakan menggunakan larva *S. litura* instar 2. Variabel pengamatan yaitu: Mortalitas, daya hambat makan, efikasi, *Median Lethal Concentration* (LC_{50}), dan *Median Lethal Time* (LT_{50}) menggunakan software R studio. Data dianalisis menggunakan ANOVA (*Analysis of Variance*), uji Beda Nyata Terkecil (BNT) taraf 5%, dan uji ortogonal. Hasil penelitian menunjukkan bahwa konsentrasi ekstrak daun pepaya 20% (K2) dan 30% (K3) memiliki hasil yang sama baiknya terhadap efikasi dan mortalitas *S. litura* yaitu sebesar 52,50% dan 75,00% sama efektifnya dengan perlakuan deltametrin (KP) dengan rerata mortalitas dan efikasi 60,00% pada 5 HSA, rerata daya hambat makan larva pada perlakuan konsentrasi ekstrak daun pepaya 20% (K2) dan 30% (K3) sama baiknya yaitu sebesar 72,75% dan 80,15% sama efektifnya dengan deltametrin (KP) dengan rerata daya hambat makan 84,21% pada 5 HSA, nilai LC_{50} terdapat pada konsentrasi 20% (K2), nilai LT_{50} pada 5 hari setelah aplikasi (HSA).

Kata Kunci : *Ekstrak daun pepaya, Mortalitas, Aktivitas makan, Spodoptera litura.*

The Effect of Papaya Leaf Extract Concentration Variations on the Mortality and Feeding Activity of Armyworms (*Spodoptera litura* F.)

By: Rizal Zaka Nurhakim
Supervised by: R. R. Rukmowati B.

ABSTRACT

The armyworm (*Spodoptera litura* F.) can cause yield losses of up to 80%. Its control can be carried out using botanical pesticides derived from papaya leaves. This study aimed to determine the most effective concentration of papaya leaf extract for controlling *S. litura* larvae. The research was arranged using a Completely Randomized Design with five treatments (aquades control, deltamethrin control, and papaya leaf extract at 10%, 20%, and 30%) with four replications. A feeding test was conducted using second-instar *S. litura* larvae. The observed variables included mortality, feeding inhibition, efficacy, Median Lethal Concentration (LC₅₀), and Median Lethal Time (LT₅₀), analyzed using RStudio software. Data were analyzed using ANOVA, the Least Significant Difference (LSD) test at a 5% level, and orthogonal tests. The results showed that papaya leaf extract concentrations of 20% (K2) and 30% (K3) produced similarly effective outcomes on the efficacy and mortality of *S. litura*, at 52.50% and 75.00%, respectively, and were comparable to the deltamethrin treatment (KP), which yielded an average mortality and efficacy of 60.00% at 5 days after application (DAA). The average feeding inhibition of larvae in the 20% (K2) and 30% (K3) extract treatments was also similarly high, at 72.75% and 80.15%, respectively, and comparable to deltamethrin (KP), which resulted in 84.21% feeding inhibition at 5 DAA. The LC₅₀ value was found at the 20% concentration (K2), and the LT₅₀ occurred 5 days after application.

Keywords: Papaya leaf extract, Mortality, Feeding activity, *Spodoptera litura*