

INTISARI

KITOSAN TIDAK BERPENGARUH TERHADAP PERTUMBUHAN DAN PERKEMBANGAN LARVA *Spodoptera litura* (LEPIDOPTERA: NOCTUIDAE)

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Penggunaan insektisida sintetik yang berlebihan untuk mengendalikan *Spodoptera litura* berakibat buruk bagi lingkungan, terutama serangga non-sasaran. Pengendalian alternatif yang aman dan ramah lingkungan perlu dilakukan, misalnya menggunakan senyawa kitosan. Penelitian ini bertujuan untuk mengetahui efek kitosan terhadap mortalitas, hambatan makan, serta pertumbuhan dan perkembangan *S. litura*. Uji hambatan makan dilakukan dengan metode pilihan dan tanpa pilihan. Metode pilihan disusun kedalam rancangan acak lengkap (RAL) faktorial dengan tujuh perlakuan (kitosan 5×10^3 , 15×10^3 , 25×10^3 , 35×10^3 , 45×10^3 ppm, profenofos $0,18 \times 10^3$ dan $0,34 \times 10^3$ ppm ditambah kontrol dan tiga posisi peletakan larva. Semua perlakuan diulang tiga kali. Uji hambatan makan metode tanpa pilihan, mortalitas, serta pertumbuhan dan perkembangan *S. litura* disusun kedalam rancangan acak lengkap (RAL) dengan tujuh perlakuan ditambah kontrol. Masing-masing perlakuan diulang empat kali. Hasil pengujian menunjukkan bahwa kitosan pada semua konsentrasi tidak memberikan efek insektisidal terhadap larva *S. litura* instar ketiga. Tidak ada interaksi antar faktor konsentrasi kitosan dan profenofos terhadap faktor posisi peletakan larva pada pakan yang berbeda, dengan nilai hambatan makan *S. litura* instar ketiga sebesar 2,59-34,97% masing-masing pada metode pilihan, dan 11,61-50,71% pada metode tanpa pilihan. Namun tidak lebih tinggi apabila dibandingkan dengan profenofos konsentrasi $0,34 \times 10^3$ ppm, masing-masing sebesar 44,33 dan 62,49% pada metode pilihan dan tanpa pilihan. Secara umum, kitosan tidak berpengaruh negatif terhadap pertumbuhan dan perkembangan larva *S. litura*. Kitosan tidak efektif dalam mengendalikan *S. litura*.

Kata kunci: Hambatan makan, kitosan, mortalitas, pertumbuhan dan perkembangan, *Spodoptera litura*

ABSTRACT

CHITOSAN DOES NOT AFFECT ON GROWTH AND DEVELOPMENT OF Spodoptera litura LARVAE (LEPIDOPTERA: NOCTUIDAE)

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The high use of synthetic insecticides to control Spodoptera litura could destruct environment, especially on non-target insects. Therefore, more environmental friendly management techniques must be used, such as chitosan a natural product derived from the exoskeleton of arthropods. The objective of this study was to understand the effects of chitosan on mortality, feeding inhibition, and growth and development of S. litura. The feeding inhibition test was carried out using the choice and non-choice methods. The choice method employed a factorial completely randomized design (CRD) with seven treatments (chitosan 5×10^3 , 15×10^3 , 25×10^3 , 35×10^3 , 45×10^3 ppm, profenofos 0.18×10^3 and 0.34×10^3 ppm, plus control and three larvae laying positions. All treatments were repeated three times. The non-choice methods of feeding inhibition, mortality, and growth and development of S. litura were in a completely randomized design (CRD) with seven treatments plus control. Each treatment was repeated four times. The results showed that chitosan at all concentrations did not have insecticidal effect on the third larvae of S. litura. There was no interaction between the factors of concentration of chitosan and the factors of position of laying the larvae in the feed with the third of S. litura feeding inhibition value of 2.59-34.97% in the choice method, and 11.61-50.71% in the non-choice method. However, it was not higher when compared to profenofos with a concentration of 0.34×10^3 ppm, each at 44.33 and 62.49% in the choice and non-choice method. In general, chitosan was not negatively affect the growth and development of S. litura, thus it was not effective in controlling S. litura.

Key words: Chitosan, feeding inhibition, growth and development, mortality, Spodoptera litura