

RINGKASAN

Penelitian ini bertujuan untuk mengetahui pengaruh metabolit sekunder *L. saksenae* terhadap mortalitas larva, daya pakan, lama pertumbuhan, persentase terbentuknya pupa, persentase terbentuknya imago, fekunditas dan fertilitas serangga uji *S. frugiperda*. Penelitian ini dilaksanakan di Laboratorium Perlindungan Tanaman Fakultas Pertanian Universitas Jenderal Soedirman, pada bulan September 2020 sampai dengan Januari 2021. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) pola faktorial terdiri dua faktor. Faktor pertama yaitu konsentrasi metabolit sekunder jamur *L. saksenae* terdiri dari konsentrasi 0% (kontrol) (K0), 10% (K1), 20% (K2), 30% (K3), dan insektisida sintesis (berbahan aktif emamektin benzoat dan lufenuron) 1 ml/L (K4). Faktor kedua yaitu metode aplikasi terdiri dari metode penyemprotan pada larva (A1) dan metode pencelupan pakan (A2). Setiap kombinasi perlakuan diulang tiga kali. Parameter yang diamati adalah mortalitas, daya pakan, lama pertumbuhan, persentase terbentuknya pupa, persentase terbentuknya imago, fekunditas dan fertilitas serangga uji. Hasil penelitian menunjukkan bahwa 1) metabolit sekunder *L. saksenae* konsentrasi 30% dengan metode penyemprotan larva menyebabkan mortalitas larva 83,33% dan metode pencelupan pakan 85,00% serta menurunkan daya pakan sebesar 32,64%. 2) metabolit sekunder *L. saksenae* 30% menghambat pertumbuhan larva 31,89%, pupa 81,06% dan imago 73,66%, menurunkan jumlah pupa dan imago terbentuk sebesar 85,57% dan 60,53% serta menurunkan jumlah penetasan telur sebesar 100%. 3) metabolit sekunder *L. saksenae* 30% metode penyemprotan larva dan pencelupan pakan efektif dalam menekan ulat *S. frugiperda* dengan nilai efikasi sebesar 83% dan 85%.

Kata kunci: fekunditas, fertilitas, *Lecanicillium saksenae*, metabolit sekunder, *Spodoptera frugiperda*

SUMMARY

The research aimed to determine the effect of secondary metabolite *Lecanicillium saksenae* on mortality, feeding activity, length of growth, percentage of pupa formation, percentage of formed imago, fecundity and fertility of *Spodoptera frugiperda* and the effective concentration that could effectively killed *S. frugiperda*. This research was conducted at the Plant Protection Laboratory, Faculty of Agriculture, Jenderal Soedirman University, on September 2020 until January 2021. This research used Randomised Block Design with factorial pattern consisted of two factors. The first factor was the secondary metabolite concentration of *L. saksenae* which consisted of concentration: 0% as control (K0), 10% (K1), 20% (K2), 30 (K3), and synthetic insectide (activeingredient emamectin benzoate and lufenuron) 1 ml/L (K4). The second factor was the application method consisted of the spraying method on larvae (A1) and the feed immersion method (A2). Each combination treatment was repeated three times. The observed parameters were larval mortality, feed power, duration of growth, percentage of formed pupa, percentage of formed, fecundity and fertility of insect. The results showed that 1) secondary metabolites of *L. saksenae* concentration 30% using spraying method caused larvae mortality 83,33% and immersion method 85% and decreased feed power by 32,64%. 2) secondary metabolites of *L. saksenae* with a concentration of 30% inhibited the growth of larvae 31,89%, pupae 81,06% and imago 73,66%, reduced the number of pupae and imago formed 85,57% and 60,53% and reduced the number hatching eggs 100%. 3) Secondary metabolites concentration 30% using spraying method for larvae and immersion method were effective in supressing *S. frugiperda* with efficacy values 83% and 85%, respectively.

Keywords: fecundity, fertilitly, Lecanicillium saksenae, secondary metabolite, Spodoptera frugiperda