

## RINGKASAN

Metabolit sekunder merupakan senyawa alami dengan berat molekul rendah (<3 kDa) yang dihasilkan oleh mikroorganisme dari hasil sintesis metabolit primer yang dapat dimanfaatkan. Jamur entomopatogen menghasilkan berbagai metabolit sekunder seperti hormon, antibiotik, enzim, toksin, dan insektisida. Penelitian ini bertujuan untuk mengetahui pengaruh metabolit sekunder jamur entomopatogen isolat Pasir Kulon terhadap mortalitas, aktivitas makan, pertumbuhan dan perkembangan, dan konsentrasi efektif yang dapat membunuh *S. litura*.

Penelitian ini dilaksanakan di Laboratorium Perlindungan Tanaman Fakultas Pertanian Universitas Jenderal Soedirman, mulai bulan November 2019 sampai Februari 2020. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) Non Faktorial dengan 5 perlakuan dan 5 kali ulangan. Perlakuan yang digunakan adalah kontrol (P0), metabolit sekunder jamur entomopatogen isolat Pasir Kulon konsentrasi 10 persen (P1), metabolit sekunder jamur entomopatogen isolat Pasir Kulon konsentrasi 20 persen (P2), metabolit sekunder jamur entomopatogen isolat Pasir Kulon konsentrasi 30 persen (P3), dan insektisida berbahan aktif sipermetrin 0,5ml/L (P4). Variabel yang diamati adalah mortalitas, aktivitas makan, lama pertumbuhan larva dan pupa, jumlah pupa terbentuk, bobot dan panjang pupa, jumlah imago terbentuk, fekunditas dan fertilitas imago, dan konsentrasi efektif. Hasil penelitian menunjukkan bahwa: 1) Metabolit sekunder jamur entomopatogen isolat Pasir Kulon dengan konsentrasi 10 persen dan 30 persen dapat menyebabkan mortalitas larva *S. litura* 50 persen dan mampu menurunkan aktivitas makan sebesar 30,17 persen; 2) Metabolit sekunder jamur entomopatogen isolat Pasir Kulon dengan konsentrasi 30 persen memperpanjang stadium larva dan pupa sebesar 16,57 persen dan 13,44 persen, menghambat pembentukan pupa dan imago sebesar 81,58 persen dan 86,21 persen serta menurunkan fekunditas dan fertilitas sebesar 100 persen; 3) Metabolit sekunder jamur entomopatogen isolat Pasir Kulon belum efektif untuk mengendalikan larva *S. litura* karena nilai efikasi kurang dari 80 persen.

## SUMMARY

Secondary metabolite are a natural compound with low weight molecular (<3 kDa) produced by microorganisms from the synthesis of primary metabolites. Entomopathogenic fungi produce a variety of secondary metabolite such as hormones, antibiotics, enzymes, toxins, and insecticides. The research aimed to determine effectiveness of secondary metabolite entomopathogenic fungi Pasir Kulon isolate on mortality, feeding activity, growth and development, and concentration effective that can killed *S. litura*. This research was conducted in Plant Protection Laboratory of Agriculture Faculty, Jenderal Soedirman University, Purwokerto from November 2019 to February 2020. This research used a Randomized Complete Block Design Non Factorial with 5 treatments and 5 replications. The treatments respectively were control (P0), secondary metabolite entomopathogenic fungi Pasir Kulon isolate with concentration 10 percent (P1), secondary metabolite entomopathogenic fungi Pasir Kulon isolate with concentration 20 percent (P2), secondary metabolite entomopathogenic fungi Pasir Kulon isolate with concentration 30 percent (P3), and insecticide with active ingredient cypermethrin 0,5 ml/L (P4). Variables observed were mortality, feeding activity, duration growth of larvae and pupae, percentase of pupae formed, weight and length of pupae, percentase of adult formed, fecundity and fertility of adult, and effective concentration. Result of the research showed that 1) Secondary metabolite entomopathogenic fungi Pasir Kulon isolate with concentration 10 percent and 30 percent can cause mortality 50 percent of larvae *S. litura* and decreased feed activity as 30,17 percent; 2) Secondary metabolite entomopathogenic fungi Pasir Kulon isolate with concentration 30 percent the stages of larvae and pupae is longer by 16,57 percent and 13,44 percent, inhibit the formation of pupa and imago by 81,58 percent and 86,21 percent and reduce fecundity and fertility by 100 percent; 3) Secondary metabolite entomopathogenic fungi Pasir Kulon isolate have not been effective for controlling *S. litura* larvae because the efficacy value is less than 80 percent.