

RINGKASAN

Bakteri *Pseudomonas fluorescens* (Pf) merupakan bakteri antagonis yang umum digunakan untuk pengendalian patogen penyebab penyakit tanaman. Bakteri tersebut diduga dapat membunuh serangga hama. Penelitian ini bertujuan untuk mengetahui pengaruh perlakuan bakteri *Pseudomonas fluorescens* strain P32 dan P60 terhadap mortalitas larva serangga *Helicoverpa armigera*, penurunan aktivitas makan larva *H. armigera* dan pembentukan pupa serangga tersebut yang diperlakukan dengan bakteri *P. fluorescens*.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman, Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto pada bulan April hingga November 2015. Rancangan yang digunakan Rancangan Acak Kelompok non-faktorial, dengan tiga ulangan. Percobaan terdiri dari 8 perlakuan yaitu kontrol, *P. fluorescens* P32 (1, 5, dan 10 mL/100 mL akuades), P60 (1, 5, dan 10 mL/100 mL akuades) dan insektisida profenofos konsentrasi 0,1 mL/100 mL akuades. Setiap unit perlakuan percobaan menggunakan larva *H. armigera* 10 ekor larva dan 15 g *baby corn*. Variabel yang diamati yaitu mortalitas larva, tingkat konsumsi larva, ukuran pupa yang terbentuk, dan persentase pupa yang terbentuk. Data dianalisis menggunakan uji F taraf 5 persen dilanjutkan dengan uji Beda Nyata Terkecil (BNT).

Hasil penelitian menunjukkan bahwa bakteri *P. fluorescens* efektif mematikan larva *H. armigera* sebesar 23,33 persen (P32 konsentrasi 1 mL/100 mL dan 10 mL/100 mL) dan 16,67 persen (P60 konsentrasi 5 mL/100 mL dan 10 mL/100 mL), bakteri *P. fluorescens* cenderung tidak menurunkan tingkat konsumsi larva, tetapi menurunkan panjang pupa (kontrol 20,59 mm, *P. fluorescens* P32 konsentrasi 1 mL/100 mL sebesar 11,46 mm), menurunkan bobot pupa (kontrol 363,33 mg, *P. fluorescens* P32 konsentrasi 1 mL/100 mL sebesar 140 mg) dan menurunkan persentase jumlah pupa yang terbentuk (kontrol 100 persen, *P. fluorescens* P32 konsentrasi 1 mL/100 mL sebesar 60 persen).

SUMMARY

Pseudomonas fluorescens (Pf) is antagonist microorganism that commonly used in controlling plant pathogen. This bacterium was suspected be able to kill insect pest. The purposes of research were to 1) know the effect Pseudomonas fluorescens strains P32 and P60 treatment on larval mortality of Helicoverpa armigera, and 2) the reduction of feeding activity of H. armigera larvae and formation of pupae that treated with P. fluorescens bacterium.

The research was conducted in the Laboratory of Plant Protection, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto on April to November 2015. The research design used a non-factorial randomized block design with three replications. The experiment consisted of eight treatments that were control, P. fluorescens P32 (1, 5, and 10 mL/100 mL akuades), P60 (1, 5, and 10 mL/100 mL akuades) and prophenophos insecticide of 0.1 mL/100 mL akuades. Each unit of the treatment used 10 individu H. armigera larvae and 15 gs baby corn. Observed variables were larval mortality (%), the level of consumption of larvae, the size of pupae, and the percentage of pupae. The data were analyzed by using the F test in 5 percent level followed by Least Significant Difference test (LSD).

The results showed that P. fluorescens was effective in killing H. armigera larvae as 23.33 percent (P32 1 mL/100 mL and 10 mL/100 mL) and 16.67 percent (P60 5mL/100 mL and 10 mL/100 mL), P. fluorescens did not reduce the level of the consumption of the larvae, however lowered the pupa length (control 20.59 mm, P. fluorescens P32 1 mL/100 mL as 11.46 mm), lowered the pupae weight (control 363,33 mg, P. fluorescens P32 1 mL/100 mL as 140 mg) and lowered the percentage of the number of pupae (100 percent control, P. fluorescens P32 1 mL/100 mL about 60 percent).