UJI EFEKTIVITAS BIOPESTISIDA EKSTRAK DAUN PEPAYA, *Beauveria bassiana, Metarhizium anisopliae* TERHADAP MORTALITAS LARVA GRAYAK (*Spodoptera litura*) DAN INTENSITAS KERUSAKAN TANAMAN CABAI RAWIT

Oleh

Komang Ririn Karisma Dewi, NIM 2113091001

Jurusan Biologi dan Perikanan Kelautan

ABSTRAK

Cabai rawit merupakan salah satu tanaman hortikultura yang banyak dibudidayakan. Namun, pada tahun 2023 produksi tanaman cabai di Bali mengalami penurunan sebesar 21%. Hal tersebut disebabkan oleh serangan hama larva grayak (*S. litura*). Pengendalian yang dilakukan oleh petani adalah menggunakan pestisida kimia yang meiliki dampak negative terhadap lingkungan. Salah satu alternatif untuk mengganti pestisida kimia adalah menggunakan biopestisida ekstrak papaya, *B. bassiana, M. anisopliae* untuk mengendalikan serangan hama *S. litura.* Penelitian ini bertujuan untuk mengetahui perbedaan mortalitas larva *S. litura* dan intensitas kerusakan tanaman cabai rawit dengan perlakuan biopestisida ekstrak pepaya, *B. bassiana* dan *M. anisopliae.* Jenis penelitian yang digunakan adalah Rancangan Acak Lengkap (RAL), dengan 4 jenis perlakuan yaitu kontrol, perlakuan ekstrak pepaya 300 mg/1000 ml, perlakuan *B. bassiana* 300 mg/1000 ml, dan perlakuan *M. anisopliae* 300 mg/1000 ml. Penelitian ini terdiri dari 6 ulangan, pada setiap perlakuan dan ulangan diinvestasikan larva grayak (*S. litura*) instar 3 sebanyak 10 ekor. Pengamatan pada penelitian ini dilaksanakan selama 7 hari di Laboratorium Utama Pengendalian Hayati, Banjar Mas, Desa Bedulu, Gianyar. Hasil penelitian dianalisis menggunakan *Anova One Way* dan *Post Hoc Test* dengan taraf signifikansi 5%. Terdapat perbedaan yang bermakna antar masing-masing perlakuan yaitu: (1) rerata persentase mortalitas larva grayak (*S. litura*) pada perlakuan kontrol, ekstrak daun pepaya, *B. bassiana*, dan *M. anisopliae* secara berurutan yaitu 8.33%, 63.33%, 83.33%, dan 50%. Perlakuan *B. bassiana* menimbulkan kematian pada larva tertinggi dengan nilai rerata 83.33%. (2) rerata persentase intensitas kerusakan tanaman cabai pada perlakuan kontrol, ekstrak daun pepaya, *B. bassiana*, dan *M. anisopliae* secara berurutan yaitu 52.35%, 38.13%, 32.39%, dan 43.95%. Perlakuan *B. bassiana* menunjukkan intensitas kerusakan terendah dengan rerata 32.39%. Berdasarkan uji *Anova One Way* dan *Post Hoc Test* mortalitas dan intensitas kerusakan tanaman menunjukkan adanya perbedaan yang bermakna dengan nilai sig. < 0.05. Perlakuan yang paling baik digunakan adalah perlakuan *B. bassiana.*

Kata Kunci: Biopestisida, Ekstrak Pepaya, *Beauveria bassiana*, *Metarhizium anisopliae*, *Spodoptera litura.*

TEST OF THE EFFECTIVENESS OF BIOPESTICIDES OF PAPAYA LEAF EXTRACT, *Beauveria bassiana, Metarhizium anisopliae* ON THE MORTALITY OF GRAY LARVAE (*Spodoptera litura*) AND THE INTENSITY OF DAMAGE TO CAYENNE PEPPER PLANTS

By

Komang Ririn Karisma Dewi, NIM 2113091001

Department of Biology and Marine Fisheries

ABSTRACT

Chilli pepper is one of the horticultural crops that is widely cultivated. However, in 2023, the production of chili plants in Bali is expected to decrease by 21%. This is caused by the attack of the gray larval pest (*S. litura*). The control carried out by farmers is to use chemical pesticides that hurt the environment. One alternative to replacing chemical pesticides is to use biopesticides of papaya extract, *B. bassiana, and M. anisopliae* to control the pest infestation *of S. litura.* This study aims to determine the difference in mortality of *S. litura larvae* and the intensity of damage to cayenne pepper plants with biopesticide treatment of papaya extract, *B. bassiana,* and *M. anisopliae.* The type of research used was the Complete Random Design (RAL), with 4 types of treatments, namely control, papaya extract treatment 300 mg/1000 ml, *B. bassiana* treatment 300 mg/1000 ml, and *M. anisopliae* treatment 300 mg/1000 ml. This study consisted of 6 replicates, in each treatment and replication, 10 larvae of the armyfly (*S. litura*) instar 3. Observations in this study were carried out for 7 days at the Main Laboratory of Biological Control, Banjar Mas, Bedulu Village, Gianyar. The results of the study were analyzed using *ANOVA one-way* and *Post Hoc Test* with a significance level of 5%. There were significant differences between each treatment, namely: (1) the average percentage of mortality of gray larvae (*S. litura*) in the control treatment, papaya leaf extract, *B. bassiana*, and *M. anisopliae,* respectively, namely 8.33%, 63.33%, 83.33%, and 50%. B. *bassiana treatment* caused the highest larval mortality with an average value of 83.33%. (2) the average percentage of intensity of chili plant damage in the control treatment, papaya leaf extract, *B. bassiana*, and *M. anisopliae,* respectively, namely 52.35%, 38.13%, 32.39%, and 43.95%. B. *bassiana* treatment showed the lowest damage intensity with an average of 32.39%. Based on *the ANOVA One Way* test and *Post Hoc Test*, mortality and intensity of plant damage showed a significant difference with a sig. value of < 0.05. The best treatment used is *the treatment of B. bassiana.*

Keywords: Biopesticides, Papaya Extract, Beauveria bassiana, Metarhizium anisopliae, Spodoptera litura.