PENGUJIAN BEBERAPA ISOLAT CENDAWAN ENTOMOPATOGEN *Trichoderma asperellum* TERHADAP TELUR DAN PERKEMBANGAN *Eurydema pulchrum* Westw. (Hemiptera:Pentatomidae)

SKRIPSI

Oleh :
YULIA AMANDA
2110252006

PEMBIMBING:

1. Prof. Dr. Ir. TRIZELIA, MSi
2. Dr. Ir. EKA CANDRA LINA, SP, Msi, IPM

FAKULTAS PERTANIAN

UNIVERSITAS ANDALAS

PADANG

2025

PENGUJIAN BEBERAPA ISOLAT CENDAWAN ENTOMOPATOGEN *Trichoderma asperellum* TERHADAP TELUR DAN PERKEMBANGAN *Eurydema pulchrum* Westw. (Hemiptera:Pentatomidae)

Abstrak

Kepik kubis (*Eurydema pulchrum* Westw) merupakan salah satu hama penting pada tanaman famili Brasicaceae. Salah satu alternatif pengendalian *E. pulchrum* yang bisa dilakukan yaitu dengan penggunaan cendawan entomopatogen *Trichoderma asperellum*. Penelitian ini bertujuan untuk mendapatkan isolat *T. asperellum* yang efektif dalam mengendalikan telur *Eurydema pulchrum* Westw. dan menghambat perkembangan nimfa di laboratorium. Penelitian dilakukan di Laboratorium Pengendalian Hayati Departemen Proteksi Tanaman Fakultas Pertanian Universitas Andalas Padang, dari bulan Desember 2024-Maret 2025. Rancangan penelitian yang digunakan adalah RAL (Rancangan Acak Lengkap) dengan 6 perlakuan dan 4 ulangan. Perlakuan terdiri dari 5 isolat cendawan *T. asperellum* AB2B3, *T. asperellum* A116, *T. asperellum* PC21, *T. asperellum* SD327, *T. asperellum* S2D11 dan kontrol. Kerapatan konidia cendawan yang digunakan 10^8 konidia/ml. Suspensi konidia diaplikasikan pada kelompok telur *E. pulchrum*. Variabel pengamatan yaitu persentase telur *E. pulchrum* tidak menetas, mortalitas nimfa , persentase imago terbentuk, perbandingan jumlah imago jantan dan betina dan masa pra-oviposisi, oviposisi dan pasca-oviposisi dari imago betina. Data dianalisis dengan sidik ragam dan uji lanjut LSD pada taraf 5%. Hasil penelitian menunjukkan bahwa semua perlakuan isolat cendawan *Trichoderma asperellum* dapat mempengaruhi persentase telur tidak menetas, mortalitas nimfa, dan persentase imago terbentuk, serta memperpendek masa pasca-oviposisi dari *Eurydema pulchrum*. Isolat cendawan *T. asperellum* AB2B3 menghasilkan persentase telur tidak menetas lebih tinggi dibanding isolat lain yaitu sebesar 48,91%, isolat ini juga menyebabkan mortalitas nimfa instar 1 dan nimfa total masing- masing sebesar 48,94% dan 68,09%. Aplikasi cendawan *T. asperellum* juga mampu menurunkan persentase imago normal terbentuk berkisar antara 27,66%-48,19%.

Kata kunci : Cendawan entomopatogen, *E. pulchrum*, *T. asperellum*

EVALUATION OF SEVERAL ISOLATES OF THE ENTOMOPATHOGENIC FUNGUS *Trichoderma asperellum* AGAINST THE EGGS AND DEVELOPMENT OF *Eurydema pulchrum* westw. (Hemiptera: Pentatomidae)

Abstract

The cabbage bug (*Eurydema pulchrum* Westw) is a significant pest of plants in the Brassicaceae family. One alternative for controlling *E. pulchrum* is to use the entomopathogenic fungus *Trichoderma asperellum*. This study aimed to identify *T. asperellum* isolates that are effective at controlling *E. pulchrum* eggs and inhibiting nymph development under laboratory conditions.The research was conducted at the Biological Control Laboratory of the Department of Plant Protection, Faculty of Agriculture, Andalas University, Padang, from December 2024 to March 2025. A Completely Randomized Design (CRD) was used, with 6 treatments and 4 replications. The treatments consisted of five *T. asperellum* isolates (AB2B3, A116, PC21, SD327, and S2D11) and a control. A fungal conidia suspension with a density of 108 conidia/ml was applied to groups of *E. pulchrum* eggs.The variables observed were the percentage of unhatched *E. pulchrum* eggs, nymph mortality, the percentage of adults that formed, the male-to-female adult ratio, and the pre-oviposition, oviposition, and post-oviposition periods of female adults. Data were analyzed using analysis of variance and a subsequent LSD test at the 5% level. All treatments with *Trichoderma asperellum* fungal isolates can affect the percentage of unhatched eggs, nymph mortality, and the percentage of formed adults, as well as shorten the post-oviposition period of *Eurydema pulchrum*. The *T. asperellum* AB2B3 fungal isolate produced a higher percentage of unhatched eggs than other isolates, at 48.91%. This isolate also caused mortality in first instar nymphs and total nymphs of 48.94% and 68.09%, respectively. The application of *T. asperellum* also reduced the percentage of normal adults formed, ranging from 27.66% to 48.19%.

Keywords: Entomopathogenic fungi, *E. pulchrum*, *T. asperellum*