

**PATOGENITAS *Bacillus thuringiensis* Berliner DENGAN UV
PROTEKTAN EKSTRAK KOKON *Attacus atlas* (Linnaeus, 1758)
TERHADAP ULAT *Spodoptera exigua* (Hübner, 1808)**

**Tiara Purti A
18/429394/BI/10160**

Pembimbing : Sukirno, S.Si., M.Sc., Ph.D.

INTISARI

Spodoptera exigua merupakan salah satu hama utama pada tanaman daun bawang, kubis dan okra. *Spodoptera exigua* yang menyerang tanaman daun bawang biasanya pada fase larva. Pengendalian hama yang sudah dilakukan menggunakan insektisida kimia dinilai tidak efektif karena menimbulkan banyak dampak negatif seperti pencemaran lingkungan, dan gangguan terhadap organisme non target, maka dari itu digunakan Bioinsektisida untuk mengurangi dampak-dampak negatif yang disebabkan oleh insektisida kimia, dalam hal ini digunakan bakteri *Bacillus thuringiensis*, karena bioinsektisida masih sangat rentan terhadap degradasi, digunakan ekstrak kokon dari *Attacus atlas* untuk menghambat proses pendegradasian yang disebabkan oleh Sinar UV. Tujuan dilakukannya penelitian ini adalah Mengetahui efek sub lethal pada larva *Spodoptera exigua* pengaruh bioinsektisida *Bacillus thuringiensis* dengan penambahan ekstrak kokon *Attacus atlas* sebagai UV Protektan, dan mengetahui patogenitas *Bacillus thuringiensis* sebagai agen bioinsektisida. Adapun tahapan penelitian yaitu pembuatan formula *Bacillus thuringiensis* dengan penambahan ekstrak kokon *Attacus atlas* konsentrasi 2,5% sebanyak 5 ulangan dan 4 variasi perlakuan. Setelah itu dilakukan penjemuran formula pada paparan sinar matahari selama 0, 1, 2, 3, dan 4 minggu. Kemudian formulasi diuji patogenitas terhadap larva *Spodoptera exigua* instar satu selama 3 hari dan diamati efek subletal berupa berat larva. Hasil menunjukkan bahwa formula *Bacillus thuringiensis* dengan ekstrak kokon *Attacus atlas* konsentrasi 2,5% efektif hingga minggu ke tiga, dan formula *Bacillus thuringiensis* dengan penambahan ekstrak kokon *Attacus atlas* memberikan efek subletal berupa penurunan berat larva sebesar 50%

Kata kunci : Bioinsektisida, Patogenitas *B.thuringiensis*, Hama, *S.exigua*,

**PATHOGENICITY OF *Bacillus thuringiensis* Berliner WITH COCOON
EXTRACT FROM *Attacus atlas* (Linnaeus, 1758) as UV PROTECTANT
AGAINST *Spodoptera exigua* (Hübner, 1808)**

**Tiara Purti A
18/429394/BI/10160**

Supervisor : Sukirno, S.Si., M.Sc., Ph.D.

ABSTRACT

Spodoptera exigua is one of the main pests on leeks, cabbage and okra. *Spodoptera exigua* that attacks leek plants is usually in the larval stage. Pest control that has been carried out using chemical insecticides is considered ineffective because it causes many negative impacts such as environmental pollution and disturbance to non-target organisms, therefore bioinsecticides are used to reduce the negative impacts caused by chemical insecticides, in this case *Bacillus thuringiensis* bacteria are used. because bioinsecticides are still very susceptible to degradation, cocoon extracts from *Attacus atlas* were used to inhibit the degradation process caused by UV rays. The purpose of this study was to determine the sub lethal effect on *Spodoptera exigua* larvae under the influence of *Bacillus thuringiensis* bioinsecticide with the addition of *Attacus atlas* cocoon extract as a UV protectant, and to determine the pathogenicity of *Bacillus thuringiensis* as a bioinsecticide agent. The stages of the research were making the *Bacillus thuringiensis* formula with the addition of *Attacus atlas* cocoon extract at a concentration of 2.5% for 5 replications and 4 treatment variations. After that, the formula was dried in the sun for 0, 1, 2, 3, and 4 weeks. Then the formulation was tested for pathogenicity of first instar *Spodoptera exigua* larvae for 3 days and observed sublethal effects in the form of larval weight. The results showed that the *Bacillus thuringiensis* formula with *Attacus atlas* cocoon extract at a concentration of 2.5% was effective until the third week, and the *Bacillus thuringiensis* formula with the addition of *Attacus atlas* cocoon extract had a sublethal effect in the form of a 50% reduction in larval weight.

Key words : Bioinsecticide, Pathogenity *B.thuringiensis*, Pest, *S.exigua*