

**SKRINING STRAIN BAKTERI ENTOMOPATOGENIK
Lysinibacillus sphaericus DARI INDONESIA TERHADAP
LARVA *Tenebrio molitor* L. (Coleoptera:Tenebrionidae)**

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INTISARI

Lysinibacillus sphaericus adalah bakteri entomopatogen karena beberapa strain bakteri tersebut memiliki protein toksik terhadap nyamuk, ulat grayak, dan kecoak. Namun demikian, hingga saat ini belum ditemukan strain yang patogenik terhadap Coleoptera. Penelitian ini bertujuan untuk skrining strain bakteri entomopatogenik *L. sphaericus* dari Indonesia terhadap larva *Tenebrio molitor* L sebagai serangga model. Preparasi dan skrining bakteri terhadap larva *T. molitor* L dilakukan di laboratorium Entomologi dan Falitma Fakultas Biologi Universitas Gadjah Mada. Bakteri diperbanyak menggunakan medium Embrapa. Penelitian dilakukan dengan 3 ulangan. Setiap ulangan perkelompok perlakuan terdiri dari 10 ekor larva *T. molitor*. Perlakuan diberikan dengan cara oral menggunakan sediaan bakteri fase vegetatif (24 jam) atau spora (72 jam) yang dibedakan lagi menjadi sediaan bakteri bagian supernatan dan bagian pelet. Mortalitas dan melanisasi dicatat tiap 24, 48, 72, dan 96 jam setelah perlakuan. Ditetapkan 5 strain yang patogen terhadap *T. molitor* yaitu 008A, 116A, 130B, 230D, 343D dengan persentase kematian tertinggi sebesar 10% pada 96 jam sediaan 72 jam pelet. Patogenisitas bakteri *L. sphaericus* dari Indonesia termasuk rendah terhadap *T. molitor*. Untuk meningkatkan potensi bakteri tersebut diperlukan penelitian lebih lanjut utamanya pada aspek metode pemberian sediaan bakteri terhadap larva *T. molitor* dan penentuan waktu produksi optimal sediaan *L. sphaericus*.

Kata Kunci : Skrining, *Lysinibacillus sphaericus*, *Tenebrio molitor* L., Indonesia

SCREENING OF ENTOMOPATHOGENIC STRAIN OF *Lysinibacillus sphaericus* BACTERIA FROM INDONESIA TO THE *Tenebrio molitor* L. LARVAE (Coleoptera:Tenebrionidae)

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ABSTRACT

Lysinibacillus sphaericus is an entomopathogenic bacterium that has some proteins toxic to mosquitoes, cutworms, and cockroaches. However, until now there has been no known strain pathogenic to the Coleoptera. The aim of this study is to screen *L. sphaericus* strains from Indonesia to the mealworm *Tenebrio molitor* L as a model insect. The study was conducted with three replications. Bacterial preparations and its screening had been done in the laboratory of Entomology and Falitma Faculty of Biology Universitas Gadjah Mada. The bacterial preparations were produced using on the Embrapa medium. Each treatment consists of 10 mealworm larvae per group using bacterial preparations at the vegetative phase (24 hours) or sporulation phase (72 hours), both split further into supernatant and pellet preparations and were given orally. The mortality and melanisation processes were recorded every 24, 48, 72, and 96 hours after treatment. In general, the pathogenicity of the *L. sphaericus* strains from Indonesia to mealworm is low. But, it is determined that the five most pathogenic strains against *T. molitor* are 008A, 116A, 130B, 230D, 343D with 10 % mortality at 96 hours after treatment using both pellet and supernatant preparation of 72 hours culture. To enhance its potency, a further study on the delivery method and optimal culture length determination are needed.

Keywords: Screening, *Lysinibacillus sphaericus*, *Tenebrio molitor* L., Indonesia