

UJI KOMPATIBILITAS *Beauveria bassiana* DENGAN EKSTRAK TEMBAKAU DAN EFEKTIVITASNYA UNTUK MENGENDALIKAN ULAT GRAYAK (*Spodoptera frugiperda*)

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ABSTRAK

Ulat grayak (*Spodoptera frugiperda*) merupakan hama invasif baru yang menyerang tanaman jagung dan menyebabkan kerugian besar. Pengendalian hama ini dilakukan melalui pendekatan terpadu, salah satunya dengan mengombinasikan agen hayati dan pestisida nabati. Penelitian ini bertujuan mengkaji kompatibilitas jamur entomopatogen *Beauveria bassiana* dengan ekstrak tembakau serta efektivitas kombinasinya dalam mengendalikan *S. frugiperda*. Rancangan yang digunakan adalah Rancangan Acak Lengkap (RAL) dengan 4 ulangan. Uji kompatibilitas melibatkan *B. bassiana* dengan ekstrak tembakau konsentrasi 4%, 6%, 8%, serta kontrol. Uji efektivitas mencakup aplikasi tunggal *B. bassiana*, ekstrak tembakau 8%, *B. bassiana* + ekstrak tembakau 4% dan *B. bassiana* + ekstrak tembakau 8%, serta pembanding insektisida sintetis deltametrin. Data dianalisis dengan ANOVA 5%, DMRT 5%, dan kontras ortogonal. Hasil uji kompatibilitas menunjukkan bahwa ekstrak tembakau kompatibel dengan *B. bassiana* karena semua konsentrasi tidak berpengaruh nyata terhadap diameter koloni, daya hambat, viabilitas dan nilai kompatibilitas. Perlakuan kombinasi *B. bassiana* + ekstrak tembakau 4% dan 8% efektif meningkatkan mortalitas, memperpendek laju kematian, dan mencapai efektivitas insektisida yang lebih tinggi terhadap *S. frugiperda* dibandingkan dengan aplikasi tunggal, meskipun belum menyamai efektivitas insektisida deltametrin.

Kata kunci : *Beauveria bassiana*, Ekstrak tembakau, Kompatibilitas, *Spodoptera frugiperda*

COMPATIBILITY TEST OF *Beauveria bassiana* WITH TOBACCO EXTRACT AND ITS EFFECTIVENESS TO CONTROL ARMYWORMS (*Spodoptera frugiperda*)

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Armyworm (*Spodoptera frugiperda*) is a new invasive pest that attacks corn crops and causes major losses. This pest control is carried out through an integrated approach, one of which is by combining biological agents and plant-based pesticides. This study aims to examine the compatibility of the entomopathogenic fungus *Beauveria bassiana* with tobacco extract and the effectiveness of its combination in controlling *S. frugiperda*. A Completely Randomized Design (CRD) with four replications was used. The compatibility test involved *B. bassiana* with tobacco extract at concentrations of 4%, 6%, 8%, and a control. The effectiveness test included single applications of *B. bassiana*, 8% tobacco extract, *B. bassiana* + 4% tobacco extract, *B. bassiana* + 8% tobacco extract, and a synthetic insecticide (deltamethrin) as a comparison. Data were analyzed using 5% ANOVA, 5% DMRT, and orthogonal contrast. The compatibility test results showed that tobacco extract was compatible with *B. bassiana*, as all concentrations had no significant effect on colony diameter, inhibition rate, viability, and compatibility values. The combination treatments of *B. bassiana* + 4% and 8% tobacco extract were effective in increasing mortality, shortened the speed of death, and achieved higher insecticidal effectiveness against *S. frugiperda* compared to single applications, although not yet match the effectiveness of deltamethrin insecticide.

Keywords: *Beauveria bassiana*, Compatibility, *Spodoptera frugiperda*, Tobacco Extract,