

Biological Effects of Indigenous Entomopathogenic Fungi and Their Application Methods on Spodoptera frugiperda

Title	Biological Effects of Indigenous Entomopathogenic Fungi and Their Application Methods on Spodoptera frugiperda
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Abstract	<p>Spodoptera frugiperda is a new pest in Indonesia that attacks corn and can cause up to 100 percent damage on young plants. As an invasive pest, information on potential indigenous natural enemies that can control this pest is needed. This study aims to determine the effectiveness of indigenous entomopathogenic fungi and their application methods on mortality, feeding activity, growth, fecundity, and fertility of <i>S. frugiperda</i>. This study used a factorial Completely Randomized Block Design (RCBD) method consisting of 10 treatments. Treatments tested were combination of fungi species, namely <i>Fusarium</i> sp., <i>Aspergillus oryzae</i>, <i>Entomophthora</i> sp. with conidia density 10⁹ ml⁻¹, distilled water and cypermethrin at concentration of 1 ml.L⁻¹ as a control. Two application techniques used were direct application on <i>S. frugiperda</i> larvae and diet test. Each treatment was repeated three times resulting in 30 experimental units. Variables observed included mortality, feeding activity, growth, fecundity, and fertility of <i>S. frugiperda</i>. Results showed that the three fungi and cypermethrin treatment did not cause mortality, but reduced feeding activity, fecundity and fertility of <i>S. frugiperda</i>. Application of entomopathogenic fungi on diets was more effective than directly spraying <i>S. frugiperda</i> larvae. The best treatment combination that suppressed feeding activity was the application of <i>Aspergillus oryzae</i> sprayed on <i>S. frugiperda</i> diet. It was also suspected that <i>S. frugiperda</i> larvae used in this test had developed resistance to cypermethrin.</p>
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