



Efficacy of *Beauveria bassiana* against the cotton leaf roller, *Haritalodes (Syllepte) derogata* (Fabricius, 1775) (Lepidoptera: Crambidae) under laboratory conditions.

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ABSTRACT

Objective: The leaf-roller caterpillar *Haritalodes (=Syllepte) derogata* (Fabricius, 1775) (Lepidoptera: Crambidae) induces high yield losses by damaging cotton leaves and reducing the photosynthetic activity of the plant. Laboratory bioassays were carried to evaluate the effect of *Beauveria bassiana* on the survival of *H. derogata* larvae.

Methodology and results: In the first trial, screening of thirteen *B. bassiana* isolates was performed on third larval instars at 10^7 conidia.mL⁻¹. In the second trial, effects of five concentrations (10^5 to 10^9 conidia.mL⁻¹) of the three best isolates of the fungus were tested. Conidia suspension was applied on each larva topically. Germination rates of conidia used varied between 90.2% to 95.7%, 24 hours after incubation. Five isolates were found to be the most promising namely Bb116, Bb3, Bb11, Bb6 and Bb115. In the second bioassay, caterpillar mortality increased with fungal concentration. Lethal Concentration (LC50) was estimated to 1.18×10^{15} conidia.mL⁻¹, 1.75×10^{13} conidia.mL⁻¹, 1.75×10^{13} conidia.mL⁻¹, 9 days after inoculation for Bb3, Bb11 and Bb115, respectively.

Conclusion and application of results: The use of *B. bassiana* as a biopesticide against *H. derogata* could be a good alternative method to control the pest. It is an environmentally friendly method with less side effects compared to the application of synthetic pesticides on cotton. This method could be tested in future station and field experiments.

Keywords: Cotton, Integrated pest management, *Haritalodes (=Syllepte) derogata*, *Beauveria bassiana*, Lethal Concentration.