

**Evaluation of Bacillus Thuringiensis Berliner
and Baculovirus Heliothis as Microbial
Control Agents of Heliothis Armigera
(Hubner) and Spodoptera Littoralis
(Boisduval) on Tomata.**

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Abstract:

Field plantings of tomato grown during both the rainy and the dry seasons were subjected to foliar sprays of *Bacillus thuringiensis* Berliner (B.t.), *Baculovirus heliothis* (B.h.) and carbaryl, plus Tenac and Gustol adjuvants against larvae of *Heliothis armigera* (Hubner) and *Spodoptera littoralis* (Boisduval).

In the laboratory, the dosage-mortality response of these larvae to B.t. and B.h., was also determined. This involved using the diet-surface treatment bioassay technique and obtaining the lethal concentrations (L.C.50) after probit analysis. *H. armigera* larvae were found to be highly susceptible to both B.t. and B.h. but *S. littoralis* larvae appeared highly susceptible to only B.t. The 0.5 Kg/ha and 1.0 Kg applications of B.t. gave good field control of the larvae, with the later giving control comparable to that of the 1.5 Kg/ha carbaryl application.

B.t. and B.h. were shown to be compatible, though the combinations were not significantly more effective than either of the pathogens alone. Combinations of B.t. and B.h. with carbaryl were also not significantly different from either of the pathogens alone. The 0.5 Kg/ha application of B.t. with 0.5 Kg/ha carbaryl was as good as the 1.5 Kg/ha carbaryl application, thus indicating that B.t. could partially replace carbaryl in the spraying programme. The adjuvants Gustol^R and Tenac were compatible with B.t. and B.h. but they did not significantly increase the effectiveness of the pathogens.

Keywords: Tomata/ microbial control agents/ *herliothis armigera* (hubner)/ *Spodoptera littoralis* (Boisduval)

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