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Biological Activity of *Bacillus Thuringiensis* (Berliner) Strains on Larvae and Adults of *Ceratitis Capitata* (Wiedemann) (Diptera: Tephritidae)

PDF (Size: 233KB) PP. 337-345 DOI : 10.4236/jep.2010.14040

Author(s)

Houda Aboussaid, Loubna El-Aouame, Said El-Messoussi, Khalid Oufdou

ABSTRACT

The objective of this study was to evaluate the efficiency of Moroccan Bt strains against neonate larvae, third instar larvae and emerged adults of *Ceratitis capitata*. This Mediterranean fruit fly causes serious damages to Argan forest and other agricultural plants. There is no successful control program of this pest fly in the endemic Argan forest in Morocco. A single-dose test was performed on neonate larvae (25 µL/g) and adult (333.33 µL/g), when three doses of Bt toxins (50 µL/g, 100 µL/g and 150 µL/g) were tested against third instar of *C. capitata*. Among the twenty-six Bt strains examined, local Bt13.4 and Bt A7 strains showed highest toxicity levels against larvae and adults, when compared to the reference strain, *Bacillus thuringiensis* subsp. *israelensis* HD567 " code 4Q1" , and commercial product " Skeetal" . One hundred percent mortality was observed against neonate larvae after 7 days of application by Bt 13.4 toxin. Third instar larvae were very susceptible to Bt A7 and Bt M-Ag 21.6 strains with 68% mortality (Lethal Concentration: LC50 = 1.115) at a dose of 150 µL/g. The Bt A7 strain was also highly toxic to adults with 81.66% of mortality after 7 days of application. This study demonstrated that some of our collection Bt strains can contribute to integrated *C. capitata* management system with strong biological control components.

KEYWORDS

 Argan Forest, *Bacillus Thuringiensis*, Biological Control, *Ceratitis Capitata*, Diptera

Cite this paper

 H. Aboussaid, L. El-Aouame, S. El-Messoussi and K. Oufdou, "Biological Activity of *Bacillus Thuringiensis* (Berliner) Strains on Larvae and Adults of *Ceratitis Capitata* (Wiedemann) (Diptera: Tephritidae)," *Journal of Environmental Protection*, Vol. 1 No. 4, 2010, pp. 337-345. doi: 10.4236/jep.2010.14040.

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