

**THE ROLE OF *BACILLUS THURINGIENSIS* IN  
INCREASING THE SUSCEPTIBILITY OF  
PROFENOFOS - RESISTANT STRAIN OF  
*SPODOPTERA LITTORALIS* (BOISD.)  
TO CERTAIN INSECTICIDES.**

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**ABSTRACT:** Laboratory experiments were conducted to evaluate the effectiveness of *Bacillus thuringiensis* (Dipel 2X and Xentari) on reducing resistance in the cotton leafworm *S. littoralis* and their biological effects.

Results indicated that treatments of the first instar larvae of profenofos - resistant strain of *S. littoralis* by 150 and 300 g / feddan of Dipel 2X and Xentari caused high mortality percentages during the larval stage. Treatments greatly reduced pupation. The activity of Dipel 2X was slightly higher than Xentari treatments. *B. thuringiensis* treatments reduced the fecundity of emerged adults, the hatchability of deposited eggs and shortened the adult life span while larval and pupal durations were prolonged. On the other hand, 300 g / feddan of Dipel shortened the larval duration but 300 g /feddan of Xentari prolonged the adults life span.

Selection of profenofos - resistant strain with *B. thuringiensis* products for one generation reduced the resistance levels to profenofos, es-fenvalerate, and chlorfluazuron, whereas slight increased in resistance took place with methomyl. The lower application rate of *B. thuringiensis* induced a higher decrease in resistance ratios to some of insecticides than the higher one.

**Key words:** *Spodoptera littoralis* - biocides - delayed effects - cross resistance.