

Tolerance to Cry1Ac in Populations of *Helicoverpa zea* and *Heliothis virescens* (Lepidoptera: Noctuidae): Three-Year Summary¹

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ABSTRACT Field populations of *Helicoverpa zea* (Boddie) and *Heliothis virescens* F. from the eastern one-half of the United States cotton belt were monitored from 1996 to 1998 for tolerance to the *Bacillus thuringiensis* toxin Cry1Ac. Spray chamber analyses of *H. zea* from the Mississippi Delta revealed a slight decrease in susceptibility to Cry1Ac during the 3-year period. Areas producing the greatest change in tolerance to Cry1Ac had a greater percentage of their acreage planted in *Bt* cotton. In general, tolerances of *H. virescens* populations did not change, with the single exception being the third generation of *H. virescens* collected from the Mississippi Delta. The small changes in tolerance in *H. zea* reported herein suggested that even though populations were slightly more tolerant of Cry1Ac, they were not at a level to cause control failures in the field.

KEY WORDS *Helicoverpa zea*, *Heliothis virescens*, *Bacillus thuringiensis*, resistance monitoring, Cry1Ac, transgenic cotton

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