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EFFECTS OF VIP ON SELECTED COTTON INSECT PESTS IN FIELD AND LABORATORY EXPERIMENTS

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Abstract

VIP cotton lines (Cot 102, Cot 202, Cot 203), with a protein from *Bacillus thuringiensis*, in a Coker 312 background were evaluated in replicated field plots in a split plot experiment where one split plot was infested with either tobacco budworm, *Heliothis virescens* F., or bollworm, *Helicoverpa zea*, and the other split plot was treated with insecticide for control of these insects. These three lines represent different transformation events and promoters. Damage was measured for six weeks in these field plots. In addition, detached leaves were used in the laboratory as food for tobacco budworm, bollworm, and fall armyworm, *Spodoptera frugiperda* (J. E. Smith), for 5 days beginning when larvae were placed on leaf discs as neonates. Larval survival and weight at 5 days were measured. Each of the VIP lines was more effective than Coker 312 for control of these insects in the field and larvae on each had lower survival and weighed less than on Coker 312 in laboratory experiments. There were differences in damage among the 3 lines evaluated in the field experiment. Five day survival and weight was different among the 3 insects. The greatest effect on survival and weight was on fall armyworm, followed by bollworm and tobacco budworm.