

**THE POTENTIAL FOR REDUCED RATES
OF INSECTICIDES FOR BOLLWORM
CONTROL IN BT COTTON**

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Abstract

Preliminary trials were conducted in the laboratory and field to determine if lower rates of insecticides could be utilized to control bollworms “coming through” in *B.t.* cotton. Larvae exposed to Dipel®- impregnated diet were significantly smaller and more susceptible to cyhalothrin (Karate®) than larvae exposed to non-Dipel® diet. Dipel® contains multiple *B.t.* endotoxins, in addition to the Cry IA(c) endotoxin expressed by transgenic *B.t.* cotton. Future studies will utilize MVP® which only contains the Cry IA(c) protein. Larvae of similar size collected from *B.t.* and non-*B.t.* cotton in the field were treated topically with cyhalothrin. Cyhalothrin concentrations were too high. As a result, LD₅₀ values were not significant, although larvae collected from *B.t.* exhibited a 10-fold increase in susceptibility.

Preliminary field tests were conducted comparing normal and half rates of Karate®, Tracer®, Larvin® and Pirate® against bollworms in *B.t.* (NuCOTN 33b) and conventional (DP 5415) cotton. No significant differences were observed between normal and half rates of the materials. Initial applications were triggered on the bases of 1/4 inch long larvae in *B.t.* cotton which was too late to obtain effective control. Treatments will be applied earlier in 1998 based on newly hatched larvae rather than “escapes”. Lower rates will also be utilized. We expect that these modifications will allow us to discriminate among the various treatment and rates.