

SURVEY OF INSECT BOLL DAMAGE AND INSECTICIDE USE IN GEORGIA 2002

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Abstract

A field survey was conducted to quantify insect damaged bolls and insecticide use in Georgia cotton during 2002. A total of 79 fields which had entered cutout, 40 Bt and 39 non-Bt, were sampled in early September. Eight counties, Appling, Brooks, Bulloch, Burke, Colquitt, Decatur, Dooly, and Terrell, were included in the survey. Approximately ten fields were sampled in each county. Percent boll damage was determined by examining approximately 100 bolls per field for the presence of larval or bug injury. All harvestable bolls were collected from individual plants so as not to bias samples by boll location on the plant. Green or unopened bolls were crushed with pliers and examined internally. Bolls were considered damaged if at least one lock exhibited significant discoloration or rot. Damaged induced by larval pests was identified by the presence of a larval entry or exit hole in the boll wall. Bolls were considered damaged by bugs if no evidence of larval feeding was present and callous growths were present on the inner surface of the boll wall or external symptoms of bug injury were present (sunken purple spots on the external surface of the boll wall). Boll damage as defined may be caused by various species. Larval damage most likely resulted from tobacco budworm, *Heliothis virescens*, and bollworm, *Helicoverpa zea*, feeding. Bug damage most likely resulted from feeding by southern green stink bug, *Nezara viridula*, brown stink bug, *Euschistus servus*, and tarnished plant bug, *Lygus lineolaris*. Data were analyzed using a t-test. Larval damaged bolls were significantly greater in non-Bt cotton compared with Bt cotton, 2.77 vs. 1.26 percent (Prob |t|<0.01). Bug damaged bolls were slightly higher in Bt fields compared with non-Bt fields, 4.94 vs. 4.08 percent (Prob |t|=0.09). Insecticide use records were obtained from 36 Bt and 34 non-Bt fields. The mean number of insecticide applications was significantly less on Bt cotton compared with non-Bt cotton, 1.44 vs. 4.71 (Prob |t|<0.01). Only 47 percent of Bt fields received more than one insecticide application compared with 53 percent of non-Bt fields treated five or more times with insecticide.