IMPACT OF INSECTICIDAL OVERSPRAY OF BOLLGARD, BOLLGARD II, AND NON - BT COTTON Craig B. Massey and Scott Stewart University of Tennessee Extension Service Cotton IPM Specialists, TN

Abstract

In 2003, Bollgard (SG 215 BG/RR), Bollgard II (SG 424 BGII/RR), and Non-Bt (SG 521 RR) cotton varieties were planted in Fayette County, Tennessee. Several different insecticide treatment regimes were made to each of the three varieties, with the number of applications ranging from one to three. Dates of application were June 25 (squaring), July 15 (early bloom), August 4 (peak flowering). Depending upon the treatment, neonicotinoid insecticides (Trimax or Centric) or Mustang Max were used in June. Pyrethroids (Baythroid, Karate, Mustang Max or Capture) were used for July and August applications. Bollworm and tobacco budworm infestations were relatively low throughout the season, and June pest infestations were minimal. However, late July and August populations of plant bugs (tarnished and clouded plant bug) and stink bugs were near or above recommended treatment thresholds in plots that were not previously treated with insecticide. No other pests were present in significant numbers. June applications of insecticide did not significantly improve yield. Treatments with an insecticide application in July, but not August, significantly improved yields by an average of about 80 lbs/lint per acre above untreated plots. However, treatment regimes with an August application, whether or not it included a July application, increased yields by 166-206 lbs/lint per acre. These increases were consistent for all varieties planted. Oversprays with a broad-spectrum insecticide (applied 1-3 three times as single or multiple sprays during June, July, and August) have increased yields an average of 66 to 292 pounds over four years. These overspray trials have demonstrated that yields in both Bollgard and non-Bt cotton can be consistently increased when common pests such as bollworm, tobacco budworm, plant bugs and stink bugs are controlled. Because multiple pest species may be present, economic benefits may be obtained even when a single pest species does not exceed threshold.