

**PLANT BUG AND BOLL WEEVIL CONTROL
WITH REGENT® UNDER AN EUP IN ARKANSAS**

J. D. Hopkins

Rhône-Poulenc Agro

Conway, AR

C. B. Guy

G&H Associates, Inc.

Tillar, AR

Abstract

REGENT® brand 2.5EC insecticide was evaluated in Arkansas for control of the tarnished plant bug (*Lygus lineolaris*) (TPB) and boll weevil (*Anthonomus grandis*) during the 1998 growing season under an experimental use permit (EUP). Arkansas losses in 1997 due to lygus/tarnished plant bug were over \$8.5 million (27,779 bales) and losses due to the boll weevil were over \$11 million (36,260 bales). The TPB and boll weevil are the third and second most destructive pests of Arkansas cotton, respectively. This EUP study was conducted on cotton cv. DPL 33B in Desha Co. near Back Gate, AR. The irrigated field was planted 5 May 1998 and managed for high yield. Two treatment regimes were evaluated:

| Applic. # / Date/ Method | REGENT® Plot | Standard Plot |
|--|--|--|
| #1 6/18/98 banded over row 10 GPA | Regent 2.56oz./A + Pix 4oz./A + Solubor 1 lb./A | Vydate 8oz./A + Provado 2oz./A + Pix 4oz./A + Solubor 1 lb./A |
| #2 7/9/98 Hi-cycle sprayer 10 GPA | Regent 2.56oz./A + Tracer 2oz./A + Pix 12oz./A + Solubor 1 lb./A | Karate 1gal.:33 A + Pix 12oz./A + Solubor 1 lb./A |
| #3 7/17/98 Hi-cycle sprayer 10 GPA | Regent 2.56oz./A + Tracer 2oz./A + 23%N 2gal./A | Karate 1gal.:35 A + 23%N 2gal./A |
| #4 7/23/98 Hi-cycle sprayer 10 GPA | Regent 2.56oz./A + Solubor 2lbs./A + Pix 8.53oz./A + 23%N 3gal./A | Bidrin 6.4oz./A + Solubor 2lbs./A + Pix 8.53 oz./A + 23%N 3gal./A |

Tracer was added to the REGENT® program for control of lepidopterous pests. Treatments were applied to single 20 acre large plots. Plots were scouted independently using direct terminal inspection (10 counts/plot 5 terminals/count), sweep net (5 counts/plot 5 sweeps/count), square examination (100 squares/plot), and bloom examination (5 counts/plot 5 blooms/count). Small square set was determined by observing presence or absence of 1st position fruit at the top 3 nodes during terminal inspection.. Scouting dates were 18, 20, & 25 June and 8, 11, 14, 20, 22, 26, & 31 July. Cotton yield was determined by hand harvesting 4 samples/plot (6 row feet by 1(38") row/sample). Harvested samples were then ginned using a small research gin. The REGENT® plot and all harvested

cotton from that plot were destroyed. Control of tarnished plant bug was similar for the two regimes until 3 days after treatment with the 3rd application (3DAT#3). From 3DAT#3 to 8DAT#4, REGENT® averaged 0.5 TPB/50 terminals and 0.6 TPB/25 sweeps while the standard insecticide program averaged 2.3 TPB/50 terminals and 3.9 TPB/25 sweeps. When rated at 3DAT#3 and 8DAT#4, boll weevil counts averaged 0 weevils/50 terminals in the REGENT® plot and 2 weevils/50 terminals in the standard program. Sweep net counts at 5DAT#2, 3DAT#4, and 8DAT#4 averaged 0.2 weevils/25 sweeps in the REGENT® plot and 1 weevil/25 sweeps in the standard program. The average live weevil count in white blooms from 5DAT#3 and 3DAT#4 was 3.5 weevils/25 blooms in the REGENT® plot while the standard program averaged 18.5 weevils/25 blooms. The live weevil count from square examination at 5DAT#3 was 1 weevil/100 squares in the REGENT® plot and 2 weevils/100 squares in the standard program. Boll weevil damage was rated 5DAT#3 and 3DAT#4 and averaged 2 weevil damaged squares/100 squares in the REGENT® plot and 11 weevil damaged squares/100 squares in the standard program. Small square set was similar for the two treatment regimes through 5DAT#2. When rated at 3DAT#3, 3DAT#4, and 8DAT#4, small square set averaged 98.3% for the REGENT® plot and 94.2% for the standard plot. While the number of bigeyed bugs were low in both the REGENT® and standard insecticide regimes, these predators were detected during the course of the spray programs by terminal inspection and sweep net sampling. The REGENT® regime appeared to have less of an impact on the lacewing population than the standard insecticide program. Ratings from 3DAT#3, 5DAT#3, 3DAT#4, and 8DAT#4 averaged 5.3 lacewings/50 terminals and 1.6 lacewings/25 sweeps for the REGENT® plot while the standard plot averaged 2.5 lacewings/50 terminals and 1.3 lacewings/25 sweeps. Both the REGENT® and standard treatment regimes appeared to have little effect on the lady beetle population. Ratings from 3DAT#3, 5DAT#3, 3DAT#4, and 8DAT#4 averaged 5.5 lady beetles/50 terminals and 4.4 lady beetles/25 sweeps for the REGENT® plot while the standard plot averaged 4.8 lady beetles/50 terminals and 4.9 lady beetles/25 sweeps. The REGENT® treated plot yielded 1228 lbs. lint/acre while the plot receiving the standard insecticide program yielded 897 lbs. lint/acre. In conclusion, REGENT® provided better plant bug and boll weevil control than a standard insecticide program, was relatively easy on beneficial predators, and significantly increased cotton yield over that of the standard insecticide program.