Efficacy of Selected Compounds for Control of Heliothines in Arkansas Cotton

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RESEARCH PROBLEM

The bollworm, *Heliothis zea* (Boddie), is the most damaging pest of cotton in the southeastern United States (Gore and Adamczyk, 2004). Foliar insecticides have played a great role in management of this insect pest in cotton. Young larvae usually feed first on terminals and small squares and may sometimes destroy the terminal bud. The squares and bolls are fed upon extensively by larvae and serious damage occurs in a relatively short period of time.

BACKGROUND INFORMATION

In 2006, Arkansas cotton growers spent on average $11.85/acre for control of heliothines. A total of 1,100,000 acres was infested and 820,000 acres were treated for bollworms in Arkansas. The purpose of the experiment was to assess the performance of selected compounds for control of heliothines in Arkansas cotton.

RESEARCH DESCRIPTION

Test 1 was located on the Hooker Farm in Jefferson County, Ark., in 2007. The variety of cotton was DPL 434. Plots were set up in a randomized complete block with four replications. Insecticide treatments were applied with a mud master spray tractor. The boom was fitted with TX6 hollow-cone nozzles at 19-inch nozzle spacing. Spray volume was 10 gal/acre at 45 psi. Data from test 1 were collected on 23 July (5DAT),

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27 July (9DAT), 30 July (4DAT), 2 August (7DAT), 9 August (13DAT), and 16 August (7DAT).

Test 2 was also located on the Hooker Farm in Jefferson County, Ark., in 2007. Plots were set up in a randomized complete block with four replications. Ratings from test 2 were collected on 20 July, 25 July, 10 August, and 16 August. Treatments are listed in the results section. All data were collected from random samples of 25 terminals, squares, blooms, and bolls. Data were processed using Agriculture Research Manager Version 7.

RESULTS AND DISCUSSION

In test 1 (Fig. 1) at 5 DAT, the untreated check and BAS 320 05 116.1 had more damage than all other compounds. Results were similar at 9 DAT (Fig. 2). Overall seasonal damage (Fig. 3) indicated that the untreated check was significantly higher than all other compounds.

In test 2 (Fig. 4) the PHY 425 RF had a significantly higher level of seasonal damage than all other varieties.

PRACTICAL APPLICATION

The results of this study provided growers and consultants with vital information about the changing efficacy of commercial insecticides.

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LITERATURE CITED


Fig. 1. Test 1, Average fruit damage 5 DAT for selected insecticides.

Fig. 2. Test 1, Average fruit damage 9 DAT for selected insecticides.
Fig. 3. Test 1, Total seasonal damage for selected insecticides.

Fig. 4. Test 2, Total seasonal damage for selected insecticides.