

impact

of the College of Agriculture and Life Sciences



Greater Harmony Between Agriculture and the Environment

Lygus Management

Issue

Integrated pest management (IPM) plans must be flexible enough to accommodate different insect pest pressures from year to year. After years of lesser recognition as a cotton pest, Lygus bugs have become the number one pest of cotton since 1998. Among growers, typical control measures for Lygus have involved tank mixing combinations of broad-spectrum insecticides in the unfounded hope that this practice will give more control over the pest.

What has been done?

The UA College of Agriculture and Life Sciences has developed an integrated pest management program (IPM) for Lygus in cotton aimed at reducing insecticide use through adequate field sampling, adherence to threshold guidelines, and using the right compound for the job. Above all, it emphasizes avoiding pest pressures wherever possible. These measures are being incorporated into the larger

cotton pest management program, and focus on reducing spray applications from mixed broad-spectrum insecticides to more selective, targeted single insecticide applications. One key to the success of the program has been the accurate identification of single spray compounds that perform consistently against Lygus and knowing precisely when to use them. The education component of this program has assisted growers in implementing this strategy during the last four cotton seasons.

Impact

In response to this IPM program, more than 50 percent of the region's cotton growers have changed their chemical tactics against Lygus by switching to single compounds used strategically and at appropriate rates as part of an IPM system. This has resulted in a two-thirds reduction in the number of acres receiving spray mixtures for Lygus, while increasing effective rates by about 20 percent.

Arizona extension cotton specialists have been able to teach and demonstrate to growers that these single compounds are as effective or even more effective than broad-spectrum combination sprays, and that this practice helps reduce the risk of resistance in Lygus and other insects while minimizing negative impacts on beneficial insects. More growers are now aware of the specific timing (thresholds) required for the control of Lygus and for providing maximum economic return. In 1999, growers applied the fewest number of sprays statewide against Lygus in cotton since 1993, thus reducing their costs per acre while protecting the environment.

The success of this program has led for the first time to efforts to control Lygus across multiple crops (Lygus are highly mobile and feed on several crops in addition to cotton). Growers have begun meeting with Cooperative Extension personnel to develop cooperative plans involving cropping sequences and cultural controls to reduce damage from Lygus.

Funding

Arizona Cotton Growers Association
Hatch Act, IPM 3-D Smith-Lever,
Agrichemical companies

Contact

Peter Ellsworth, area IPM specialist, Maricopa Agricultural Center,
The University of Arizona
37860 W. Smith-Enke Road, Maricopa, AZ 85239-3010
Tel: (520) 568-2273, FAX: (520) 568-2556
Email: peterell@ag.arizona.edu
<http://ag.arizona.edu/crops/cotton/cotton.html>