Researcher Studying Costly Cotton Insects

STONEVILLE, MISS.

A Mississippi State University researcher is working to reduce a growing expense for Mississippi cotton farmers – managing tarnished plant bugs.

"Some Delta cotton producers made as many as 15 insecticide applications for plant bugs in 2007," said Jeff Gore, Mississippi Agricultural and Forestry Experiment Station research entomologist at MSU's Delta Research and Extension Center.

"We averaged 7 ? sprays for plant bugs in the Delta in 2007," Gore said. "This was nearly twice the average number of sprays for 2006 and nearly three times the average number of sprays we were making 10 years ago."

Gore said plant bug treatments cost $6-$12 an acre. With already tight profit margins, cotton producers need an economical way to manage plant bugs without losing yields. He said a solution is fine-tuning insect thre-sholds, or the number of insects found in a field sample that indicates when insecticide is necessary.

"We're looking at specific timings for insecticide. We hope we can reduce one or two applications in many of these situations," Gore said. "Each application eliminated is potentially a big savings on a whole farm basis."

Reasons for high plant bug populations in 2007 include increased corn acreage – corn is a good host plant for the insects; a favorable spring for reproduction; adverse weather conditions for insecticide s-praying; poor s-pray coverage; and insecticide resistance.

Gore said in response to the plant bug problems of 2007, he will be working closely with other researchers and Extension specialists across Mississippi and the mid-South to develop a set of best management practices, or BMPs, that will improve insect management in cotton.

"One of the key factors of these BMPs will be to refine insecticide use strategies by reducing spray intervals during times of extremely high pressure, rotating chemistries and improving application efficiency," Gore said. "Other factors to be considered will be eliminating weeds that act as hosts, minimizing and managing the effects of corn fields adjacent to cotton, and variety selection."

The goal will be to reduce the number of insecticide applications and minimize the impacts of insect pests without negatively impacting yields or profits.

Gore came to MSU in November 2007 after working for six years as a research entomologist for the U.S. Department of Agriculture-Agricultural Research Service in Stoneville. Gore received his doctorate in entomology from Louisiana State University in 2001 and is originally from Gadsden, Ala. Gore, his wife, Tracy, and their children live in Greenville.

Joe Street, head of the Delta Research and Extension Center, said with the increased incidence of plant bug damages on cotton, Gore will be a valuable member of the DREC team. He will devise effective methods to control plant bugs and other pests in crops.

"Jeff brings tremendous experience in entomology to our staff," Street said. "He is well

known for his work with cotton pests, and I am pleased to have an individual of his caliber on board."

Gore's research will focus on insect pests of cotton, soybeans, corn and peanuts. He also will study the potential for site-specific insecticide applications. Site-specific technology uses coordinates from satellites to apply pesticides only to areas of a field with the highest population of pests, thus reducing spray costs.

"Entomology research with site-specific applications at the DREC has focused primarily on tarnished plant bugs; however, plans are in place to expand that research to also include spider mites," Gore said.

"We feel that spider mites are an ideal candidate for site-specific applications because early infestations start at isolated locations within a field, their feeding injury to cotton is visually evident, and the miticides used for their control are very expensive." Δ