MANAGEMENT OF THE SUCKING BUG COMPLEX ACROSS THE COTTON BELT: GETTING A HANDLE ON THE PROBLEM!

B. R. Leonard
LSU AgCenter, Macon Ridge Station
Winnsboro, LA

Abstract

Several species of plant bugs and stink bugs have become the dominant pests across many cotton production regions. Across the Far Western cotton production region, the tarnished plant bug and western plant bug are the primary species in this pest complex. In the Western region, these two species occur with the pale legume bug, cotton fleahopper, and a *Creontiades* species. Stink bugs are typically considered occasional pests in the Western and Far Western regions. In the Mid-South region, the tarnished plant bug, clouded plant bug, and several stinkbugs (green, Southern green, brown) are commonly found in cotton fields. The primary Heteropteran pests in the Southeastern region consist of the green stink bug, Southern green stink bug, and brown stinkbug. Tarnished plant bug is only considered an occasional pest in this region.

A number of explanations have been proposed for this observed shift in pest status. However, because of the number of species in this Heteropteran pest complex, and their broad geographical range across the US cotton belt, it is likely that a combination of concurrent events have served to increase the frequency of problems with these pests. In recent years, producers have incurred greater economic losses from these pests compared to losses caused from boll weevil and heliothines. Yield losses and control costs for this complex of insects have gradually increased across the cotton belt. A drastic increase in the overall frequency of insecticide applications with this pest complex has been occurring. In 2007, across parts of the Mid-South region, >10 insecticide sprays/acre were applied against tarnished plant bugs. Therefore, isolated areas are experiencing near crisis problems with one or more species in this complex.

Comprehensive research efforts by teams of public and State scientists are underway to develop and implement holistic integrated management strategies for individual pests, and complexes of these species. Two noteworthy efforts include studies to validate and improve sampling protocols and action thresholds of tarnished plant bugs in the Mid-South region and stink bugs in the Southeastern region. Although most of the species in this pest complex are effectively controlled with insecticides, several of the insecticides recommended to manage tarnished plant bug in the Mid-South are not providing consistent control. Resistance to many available products has been confirmed in laboratory bioassays. The agrochemical industry is aggressively evaluating insecticidal molecules with novel modes of action, but very few have demonstrated any promise in field trials, and those compounds are several years from commercialization. Therefore, a simple exchange of insecticides does not appear to be an option for success during the next few years. For cotton producers to have some degree of success in controlling these pests and maintain profitability in cotton, a series of pest management strategies must be integrated into their production practices. Non-chemical tactics will include host plant (non-cotton) management, cotton field placement and size, and using intense and accurate sampling protocols to characterize population levels and distribution in fields. Effective chemical control tactics are essential, but the evolving insecticide use strategies promote careful selection of products for use during specific periods of plant development in an attempt to maintain efficacy levels throughout the season. With insecticide efficacy levels declining, all pesticide application methodology must be optimized to reduce the incidence of poor deposition, reduced rates, and non-treated zones in cotton fields.

In spite of improvements in management strategies for the bug complex, especially tarnished plant bug, there remains a question in the sustainability of these tactics and how long the cotton industry can tolerate these problems. The consequences of higher crop protection expenses and potential risk of losses in yields make it difficult for producers to maintain the present levels of cotton acreage. Given the current value of grain crops for the next couple of years, many producers may exchange acreage planted to cotton with other commodities.