SCOUTING METHODS AND THRESHOLDS: WE HAVE WORK TO DO IN THE MIDSOUTH

B. R. Leonard
LSU AgCenter
Winnsboro, LA
R. Bagwell
Fred Musser
Mississippi State University
Mississippi State, MS
Angus Catchot
Scott D. Stewart
The University of Tennessee
Jackson, TN
D. Scott Akin
University of Arkansas
Monticello, AR
Glenn Studebaker
University of Arkansas
Keiser, AR
Gus Lorenz
University of Arkansas, Cooperative Extension Service
Little Rock, AR

Abstract

In recent years the production system in cotton has changed dramatically. With the development of transgenic cottons such as Bollgard and WideStrike and the eradication of boll weevils, we have seen a shift in emphasis of our pest complex. In a recent survey of cotton consultants in Arkansas, when asked to name the most important problem in cotton insect control, the overwhelming response was plant bugs. Other important problems were sampling and thresholds, spider mite control, and finally worm control with the new transgenics. I think most entomologists that work in row crops will agree that there is a definite need to revisit many of our thresholds for the important pests in cotton today to assure that our thresholds are working to maximize profitability for the grower and keep pests below economic injury level. If the current thresholds need adjustment those changes need to be made as soon as possible. With the current group of entomologists in the Midsouth, I have no doubt this can be accomplished. We are currently addressing the plant bug situation in the Midsouth as our first collaborative effort.

Plant Bug Situation in the Midsouth

There are several reasons the plant bug has increased in significance in the Midsouth. One notable change has been the shift of this pest from an early season (prior to bloom) pest to more of a midseason pest (post bloom). This has likely occurred due to the lack of incidental control once aimed at boll weevils and worms is no longer occurring due to the aforementioned boll weevil eradication and transgenic cotton which have reduced the need for foliar applications for bollworm, budworm and boll weevil. As we saw this year the plant bug is still an early season pest, but recent studies show on the average year these pests are much more important from bloom through cut-out than prior to bloom. Some of the coincidental concerns that have evolved in this situation are that sampling methods currently used are the same as they were 15-20 years ago when bollworm/ budworm were our main concern. You cannot scout for plant bugs and stink bugs the same way you scout for worms. Another concern is that many of our crop consultants have no faith in our sampling and/or thresholds currently used.

Current Work on Tarnished Plant Bug in the Midsouth

A recent publication based on two years of study conducted by entomologists in the Midsouth titled "Multistate Evaluation of Tarnished Plant Bug Sampling Methods in Blooming Cotton" has recently been made available on MSU and U of A websites. A hard copy is also available on a limited basis. This publication represents the first collective effort of Midsouth entomologists to address the current need to work on sampling and thresholds. This work identifies the efficient and accurate sampling methods for

tarnished plant bugs and will help standardize scouting procedures for the Midsouth. The study indicated that the sweepnet was most effective for sampling adults while the shakesheet was best for nymphs. Ideally then the sweepnet should be used prior to bloom when adults are most prevalent and the shakesheet once blooming begins when nymphs are more prevalent. For details on this study please look at the publication. The next logical step, once sampling procedures are known is to evaluate current thresholds. Two studies currently ongoing are an early season threshold study to evaluate thresholds for plant bugs prior to bloom and another to evaluate thresholds from bloom to physiological cut-out (NAWF=5). With two years of trials in the four state areas on the early threshold study we have found that automatic applications do not increase yield and may, in fact, reduce yield by 40 lbs of lint. The study also indicates that when plant bugs reach 16 per 100 sweeps failure to control them will reduce yields. In the midseason trial the data indicates a threshold of around 3 per 5 row feet is most consistent of all plant bug levels to maintain optimum yield and spraying when plant bugs are not present does not increase yields.

Where do we go from here?

Upon completion of threshold studies the Midsouth group is interested in working on spider mites in cotton. We will continue to work collaboratively towards refining sampling procedures and thresholds for Midsouth cotton producers and consultants to insure that we maximize profit.