

**EVOLVING PEST MANAGEMENT IN COTTON****Gus Lorenz****University of Arkansas Cooperative Extension Service****Lonoke, AR****Tom Barber****University of Arkansas Cooperative Extension Service****Little Rock, AR****Scott D. Stewart****The University of Tennessee****Jackson, TN****Angus Catchot****Jeff Gore****Don Cook****Mississippi State University****Mississippi State, MS****Abstract**

In recent years we have seen many changes in pest management in cotton. There are several reasons for these changes but some of the most important are: increased use of transgenics such as Bollgard, Bollgard II and Widestrike, and boll weevil eradication. In both cases decreased foliar applications for worm and weevil pests has released the sucking bug complex. Also, a large reduction in cotton acreage the past few years to crops that are alternate hosts for the sucking bug complex, lepidopteran pests such as bollworm and fall armyworm as well as mites all serve as reservoirs for these pests. These crops that often surround cotton fields provide an influx of these pests. Also, target specific insecticides which control only one pest, insecticide resistance and declining application efficiency associated with spray tips as well as an overall reduction in tillage have also caused this shift in pest status. One of the problems associated with this shifting pest status has been that of insect sampling. Previous methods of sampling were aimed at the major pests of the time such as bollworm, budworm and other lepidopteran pests. With the shift in emphasis to the sucking bug complex our sampling methods must also change to accurately estimate populations of the sucking bug complex. Recent work by midsouth cotton entomologists has been to evaluate sampling techniques and thresholds for the most important pest of cotton in the midsouth, the tarnished plant bug. This work indicates that the sweepnet is the most effective sampling tool for prebloom cotton while the black shakesheet has been identified as the most effective method for sampling for blooming cotton. We have also found the threshold for prebloom cotton is around 8 plant bugs per 100 sweeps and 3 plant bugs per five row feet on blooming cotton. While this work has been very helpful in managing this pest there is still a lot of work to be done and many issues to be addressed. We must continue to look at alternatives to insecticides such as landscape management, host plant resistance, and other methods to reduce our dependence on insecticides. One of the most important threats to plant bug management in the midsouth is insecticide resistance. Currently pyrethroids and organophosphates have been identified as having control issues for tarnished plant bug. We need to rotate chemistries as much as possible to slow down the increasing threat of resistance. We desperately need new modes of action for tarnished plant bug and to be more effective in the use of "newer" insecticides such as novaluron and flonicamid for better management of this pest. Another pest becoming more prevalent in the midsouth is the stink bug which is the predominant pest in the southeast. Stink bugs are pests of many of the crops currently grown in the midsouth particularly soybeans and corn which are the crops surrounding most of cotton fields so it should be no surprise that they are becoming problematic in cotton. As with plant bugs there is much work to be done regarding thresholds, sampling, insecticide efficacy, etc. to be done to develop sound management strategies for our growers. One other pest worthy of discussion as it appears to be more prevalent throughout the cotton growing region is spider mites. Issues with spider mites include correlating thresholds with impact on yield, how other crops particularly corn as well as wild hosts impact subsequent infestations in cotton, and the changes in efficacy from early season to late season. In summary, recent changes in the midsouth production system have changed the pest status and population dynamics of many of our cotton pests. These changes necessitate the need for reevaluation of thresholds, sampling procedures and control tactics to meet the needs of our growers in the midsouth.