Dustin Pickelmann

Using Nectariless Cotton in Control of *Lygus lineolaris*

This summer, I participated in studies of comparing impact of tarnished plant bugs on nectariless and nectaried cotton, impact of *Helicoverpa zea* (bollworm) on different Bt (*Bacillus Thuringiensis*) and non-Bt varieties, and impact of *Beauveria bassiana* against the *Lygus lineolaris* (tarnished plant bug). My primary focus was the impact of the nectariless trait in cotton on tarnished plant bug infestations. This involved the use of DP174 (nectaried) and MD25 (nectariless) cotton varieties. The plots were sampled once weekly with 50 sweeps (to determine adults) and (2) 6ft. drops (to determine nymphs) in each plot. Over the course of the summer I have learned that nectariless cotton greatly reduces the numbers of tarnished plant bugs compared to a nectaried variety. Nectar from cotton has long been known as a primary or secondary source of food for a number of beneficial insects as well as for certain pests (Trelease 1879, Tyler 1908, Lukefahr and Rhyne 1960, Butler et al. 1972, Laster and Meredith 1974). Based on this information, the nectariless variety lacks nectar (with the exception of floral nectarines), which is a primary food source for tarnished plant bugs and a main reason for their existence in cotton. Over the summer, the nectariless variety has been treated with insecticides for tarnished plant bugs, but at a rate far less than the nectaried variety. Nectariless cotton varieties do not offer a solution for the tarnished plant bug problem in the Mississippi Delta, but the nectariless trait does present a means of reducing the numbers of tarnished plant bugs in cotton from a host plant resistance aspect. As prices for seed technology and chemicals increase, maybe this is an alternative to seed technology fees and expensive insecticide sprays.