Title: Fire Ant Control in Soybean

Investigators: Gus Lorenz and Kelly Loftin

Production System: Double Crop Soybean Production System

Status: Year 1

Stated Goal: Determine impact of fire ants in the soybean agroecosystem . To include impact on pest and beneficial insects, harvest and subsequent yield

Report:

Plots were located in a grower field just west of Gould. The study was laid out in 0.25 acre plots. Fire ants were monitored with hotdog baits throughout the course of the study and plots were swept weekly. Results indicated that baits were more effective than foliar applications for reducing fire ant numbers. Dry weather and the well breaking down for the field did confound the study. We need to conduct the study again with adequate moisture.

The study was conducted in a soybean field near Gould, Arkansas and began on July 9. 2013. The study was laid out in 0.25 acre plots. The efficacy of periodic foliar applications of bifenthrin was compared to a single granular application of Extinguish fire ant bait (s-methoprene) (1.5 lb. product/acre) and untreated control plots. Periodic fire ant foraging counts were taken throughout the study period and final counts of the number of active fire ant mounds were taken following harvest (September 25, 2013). Plots were also swept on a weekly basis to determine impact of treatments on insect pests and beneficials during the growing season.

Results from foraging counts demonstrated little differences in the number of foraging fire ants present in the treated or control plots. However, final mound counts demonstrated significant reductions in the density (number per acre) of active fire ants mounds in the treated plots, with plots receiving the s-methoprene bait showing the greatest reduction. Presence of foraging fire ants in treated and untreated plots suggests that fire ants forage greater distances than normally noted in pasture situations. Sweep net samples for insect pests and beneficial insects were not significantly different except for brown stink bug (pest) and big-eyed bugs (beneficial). There were significantly fewer of both of these species in the pyrethroid treatment compared to the bait and the untreated check. This may have been due to dry weather and the well breaking down resulted in drought stress occurring in the field. The study will be conducted next year with adequate irrigation.

Fire ants on hotdog bait.

Fire ant mound in field.

Fire ant mound on field edge.