

# Sweep net and pheromone trap captures of soybean insect pests

Jaret Reister

USDA-ARS, Southern Insect Management Research Unit

## INTRODUCTION:

The United States Department of Agriculture has played a key role in the lives of farmers and many other agricultural industries. The USDA also conducts studies to examine the variability of pest populations on crops and their resistance to insecticides. To gain an understanding of pest insect biology and their occurrence on important crops, several methods can be used to monitor insect populations within an area. Sampling with sweep nets along with individual traps such as pheromone traps used for tobacco budworms (*Heliothis virescens*) bollworms (*Helicoverpa zea*) and soybean loopers (*Chrysodeixis includens*) are a major part in studies on insect distribution.

## MATERIALS AND METHODS:

During my summer work for the USDA Southern Insect Management research unit, I have been involved with sampling soybean fields across the MS Delta and recording numbers of pest insects in these fields in different MS counties. Most of the field sampling involves the use of a sweep net, but we have also sampled using a drop cloth. The drop cloth is placed in the middle of two rows of plants and then the plants are shaken over the cloth. Numbers of larvae that are dislodged from the plants are recorded. Sampling for adult moths on the edge of fields is done by the use of a pheromone trap. The pheromone traps consist of a wired funnel that feeds into a removable, cylindrical top. The moths are attracted to the pheromone that is located at the bottom of the funnel. They proceed to fly or crawl up to the top of the funnel and into the removable piece where they are then trapped until their removal for study. The three types of moths that we capture are bollworms, tobacco budworms, and several variations of loopers. The moths are counted and recorded on a data sheet.



## RESULTS AND DISCUSSION:

The numbers of insect pests collected in sweep net samples were not substantially high considering the given threshold of each type of pest. The most common pest insects collected have included: three cornered alfalfa hoppers, bean leaf beetles and green cloverworms. Other insects collected include stink bugs and loopers. Moth trap captures over the past 4 weeks have varied from location to location and week to week. More bollworm moths have been collected compared to tobacco budworms or soybean loopers. Numbers of tobacco budworm moths have been low, but over 30 moths were collected from our Washington County traps the week of July 28<sup>th</sup>. The pheromone traps baited with soybean looper pheromone collect a few different looper species and insects need to be examined to make sure of the species. Though there have been lower numbers of moths since the introduction of Bt cotton as reported by Adamczyk and Hubbard (2006), overall numbers of tobacco budworm moths have been a little higher than numbers reported in 2006.

## REFERENCES:

Adamczyk, J.J. and D. Hubbard. 2006. Changes in Populations of *Heliothis virescens* (F.) (Lepidoptera: Noctuidae) and *Helicoverpa zea* (Boddie) (Lepidoptera: Noctuidae) in the Mississippi Delta from 1986 to 2005 as Indicated by Adult Male Pheromone Traps. *J. Cotton Sci.* 10: 155-160

**Acknowledgements:** Thank you to Lou Andrews, Russ Godbold, Laura Sipes, Jasmine Warren, Clint Allen, and the rest of the SIMRU team for help this summer.