Row Crop Sampling and Pheromone Trap Study

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INTRODUCTION:

The United States Department of Agriculture has played a key role in the lives of farmers and many other agricultural industries. It has helped to increase yields through genetics and preventatives such as herbicides, insecticides, and fungicides. The USDA also conducts studies to examine the variability of pest populations on crops and their resistance to insecticides. There are several ways of studying populations of insect pests in a field and the general area. Sampling with sweep nets along with individual traps such as pheromone traps used for tobacco budworms (*Heliothis virescens*) and bollworms (*Heliocoverpa zea*) are a major part in the study on insect management.

MATERIALS AND METHODS:

The materials used for sampling consist primarily of sweep nets. There are many major insect pests that we sample for that can cause damage to the crop. On average there are 250 sweeps done within a field with the exception of fields with USDA test plots. There are 12 plots on average within a test area for Karate, Prevathon, and untreated portions of the plot that require 25 sweeps per plot for accurate study and comparison of these chemicals as opposed to untreated crops. 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 the are then trapped until their removal for study. The three types of moths that are captured and studied are bollworms, budworms, and several variations of loopers. The moths are counted and recorded on a data sheet.

moth trap canister replacement

Kudzu bug on soybean leaf

RESULTS AND DISCUSSION:

The numbers of insect pests that were observed in samples were not substantially high considering the given threshold of each type of pest. The moth numbers varied from area to area. Some places had very low numbers of moths compared to other areas that had higher populations. 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 greater this year than numbers reported in 2006. There were a number of Kudzu bugs (*Megacopta cribraria)* found in the fields that were sampled in the Vicksburg area that raised interest due to their effects on soybean crops. Kudzu bugs have caused substantial damage to soybean crops in areas with a large population. The kudzu bugs along with the kudzu bug nymphs feed on the stems and leaves and may potentially cause defoliation if large amounts are allowed to thrive within the soybean crop(Zhang et al., 2012).

REFERENCES:

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