



Mississippi Corn Promotion Board 2016 Progress Report

Project Title: Trapping Program to Monitor Southwestern Corn Borer Populations in Mississippi

PI: Jeffrey Gore, A. Catchot, D. Cook, and F. Musser

Department: Delta Research and Extension Center and Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology

Project Summary (Issue/Response)

The southwestern corn borer is one of the most important insect pests of non-Bt corn in Mississippi. Currently, growers are required to plant a refuge of non-Bt corn to satisfy the resistance management plan for Bt corn hybrids. Those refuges are subject to potential yield losses from southwestern corn borer annually. Bt corn hybrids have been widely utilized in Mississippi because they provide excellent control and monitoring for southwestern corn borer in non-Bt corn can be very difficult. Because an economically damaging infestation is difficult to detect, a comprehensive trapping program is needed in Mississippi to help growers properly time insecticide applications in the non-Bt refuge and minimize losses from this insect.



To monitor southwestern corn borer populations throughout the year, pheromone traps were placed at various locations throughout Mississippi. Every attempt was made to locate the traps adjacent to a non-Bt corn field. A total of 66 locations were monitored throughout the state that included all of the major corn producing regions. The traps were identified by county and nearest town for reporting purposes. The traps were monitored weekly and the number of southwestern corn borers per trap were recorded. Trap counts were reported weekly on the Mississippi Crop Situation blog (www.mississippi-crops.com) and through other means to ensure that the information was widely disseminated to growers, consultants, and field scouts.

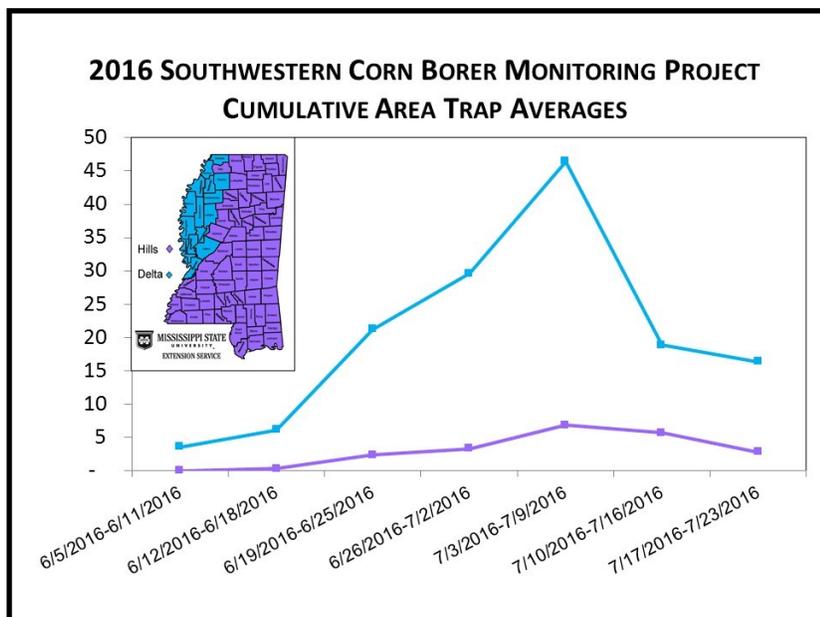
Project Results/Outcomes

A total of 76 southwestern corn borer trapping locations were monitored in 2016. Similar to previous years, trap catches were highly variable from trap to trap within a region. Based on trap catches, the first generation of moths peaked during the month of May. Populations of the second generation began increasing about the third week of June and continued for at least 4 weeks. Numerous traps throughout the Delta region of the state, especially in the northern half, experienced above threshold populations during susceptible stages of plant growth over multiple consecutive weeks. The flight of the second generation appeared to be slightly extended compared to previous years. This may be a result of more non-Bt corn being planted in 2016 compared to previous years which served as a source of moths later in the season. Similar to previous years, the greatest population densities occurred during the tasseling and early ear development stages when corn was still susceptible to significant yield losses. As a result, numerous insecticide applications were made to non-Bt corn throughout the state to minimize yield losses from this pest. Based on the high level of variability from trap to trap in this survey, it is highly recommended that growers and consultants utilize pheromone traps to monitor southwestern corn borer in individual fields. Although trapping is recommended in individual fields, these surveys provide



Project Results

tremendous value to corn growers in Mississippi. They provide an initial indication of when southwestern corn borer populations are beginning to increase across the state, and signal the timings when scouting should be intensified in individual fields. Additionally, these surveys can be used to trigger insecticide applications in fields where traps are not being used by consultants and growers.



Project Impacts/Benefits

The results of these trapping efforts are an important first step in determining when damaging levels of southwestern corn borer are likely to occur in Mississippi. Because field scouting for infestations of this pest is very difficult and because timing of foliar applications of insecticides is critical for effective control, these results are important for helping field scouts, consultants and growers determine when to spray. As the percentage of non-Bt corn acres increases due to low commodity prices, these efforts will become more important to ensure effective control and economical production of field corn in Mississippi.

Project Deliverables

The results of this survey were presented weekly in the Mississippi Crop Situation Newsletter (www.mississippi-crops.com) and through personal phone calls from numerous field scouts and consultants throughout the state.

Results have also been presented at numerous field days, grower meetings, and workshops throughout the state.