Mississippi Corn Promotion Board
2015 Progress Report

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

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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.

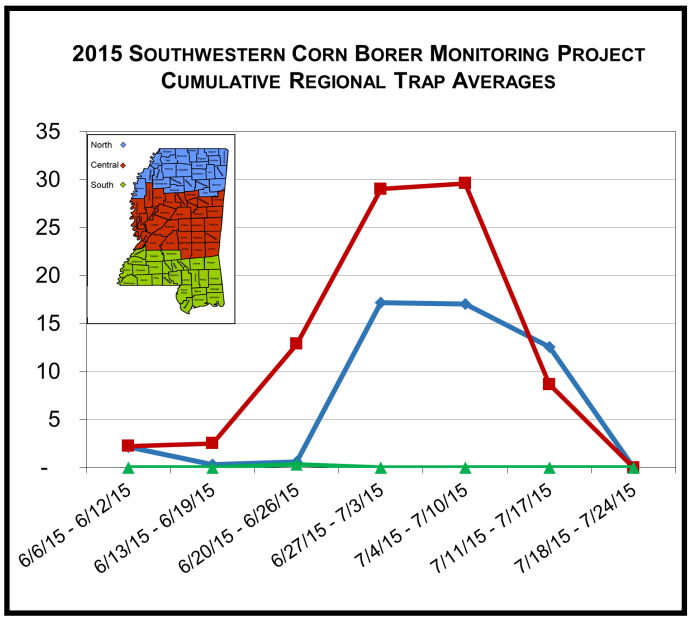
To monitor southwestern corn borer populations throughout the year, pheromone traps were placed at various locations throughout Mississippi. Every attempt was made to locate the traps adjacent to a non-Bt corn field. A total of 66 locations were monitored throughout the state that included all of the 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.

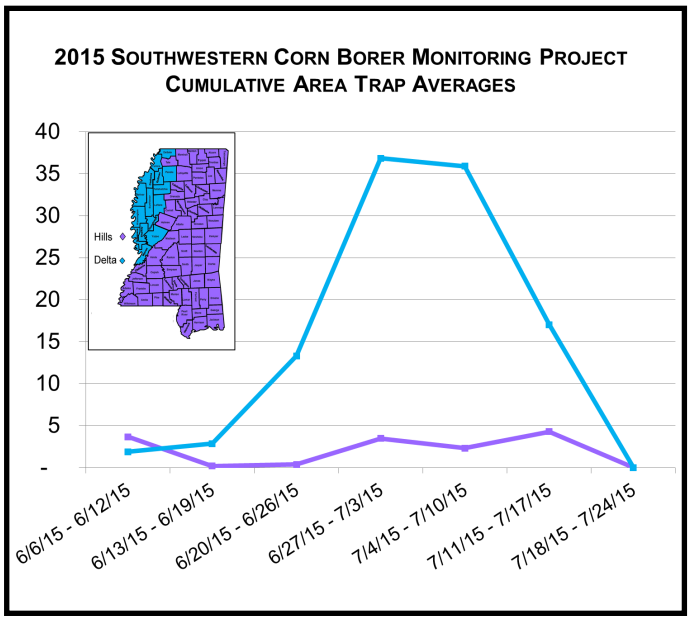
Project Results/Outcomes

A total of 66 southwestern corn borer trapping locations were monitored in 2015. Similar to 2014, trap catches were highly variable from trap to trap within a region. For instance, paired traps in Leflore County during the week of July 4-10 had catches of 176 and 642 moths. Similarly, trap catches in Coahoma County during that week were 147, 20, 69, and 18. Based on average trap catches within a week, neither of those counties exceeded the current economic threshold. However, individual fields adjacent to traps that caught above threshold numbers may have experienced significant yield losses from southwestern corn borer. Based on trap catches in 2015, the first generation peaked during the week of May 24-30. No peak in the second generation was detected in the southern part of the state. The second generation reached its greatest densities during the weeks of June 27 to July 10 in the central and northern areas of the state. Overall, populations were very high during the second generation in the central and northern regions of Mississippi in 2015 which was similar to 2014. This coincided with the majority of the corn crop being in the tassel and early ear development stages. As a result, numerous insecticide applications were made on non-Bt refuge corn to manage this pest in Mississippi. 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 tremendous value to corn growers in Mississippi. They provide an initial

Project Results

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.