



Mississippi Corn Promotion Board 2022 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 of southwestern corn borer in non-Bt corn and monitoring this pest 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 64 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 78 southwestern corn borer trapping locations were monitored from May through August in 2022. Similar to previous years, trap catches were highly variable from trap to trap within a region. Overall populations followed a similar trend to what was observed in 2020 and 2021, but numbers were slightly lower. Based on trap catches, the first generation of moths was not detected in 2022. Populations of the second generation began increasing the first week of July and remained high through the end of July. The initial start of the second generation flight was similar to what was observed in 2020, but a week earlier than 2021. The number of traps throughout the state that experienced above threshold populations during susceptible stages of plant growth appear to be increasing every year. The highest trap counts were recorded from the central to northern part of the state (North of Hwy 82). The highest trap counts occurred in Leflore, Carroll, Tate, and Coahoma counties during 2022. Southwestern corn borer populations in many counties appear to be increasing compared to previous years. Based on the high

Project Results

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 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. Results of these surveys were reported weekly on the Mississippi Crop Situation blog and communicated through phone conversations and text messages to growers, consultants, and retail scouts.



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.