Mississippi Corn Promotion Board
2023 Progress Report

Project Title: Southwestern Corn Borer Trapping Program

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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. Additionally, there has been an uptick in producer utilization of non-Bt corn hybrids due to lower input costs (decreased technology fees) and competitive yield potential when compared to Bt corn hybrids. Those non-Bt corn acres 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 monitoring for southwestern corn borer in non-Bt corn can be difficult. Due to an economically damaging infestation being 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 will be placed at various locations throughout Mississippi. Every attempt will be made to locate the traps adjacent to a non-Bt corn field. At least 50 traps will be scattered throughout the state, but more will be included as appropriate. The traps will be identified by county and nearest town and the GPS coordinates will be recorded for each trap location. The traps will be monitored weekly and the number of southwestern corn borers per trap will be recorded. Trap counts will be reported weekly on the Mississippi Crop Situation blog (www.mississippi-crops.com) and through other means to ensure that the information is widely disseminated to growers and consultants.

Project Results/Outcomes

A total of 58 southwestern corn borer trapping locations were monitored from June through August in 2023. Southwestern corn borer trap counts were variable across locations throughout the season. Total trap count numbers were down considerably from previous years; however, this may be a function of fewer trapping locations being deployed in 2023. The first generation of southwestern corn borer was not detected during the 2023 trapping efforts due to traps not being deployed until late May and early June. However, the second generation began emerging around the 1st of July and peaked at the end of July. During the 2023 trapping season, highest densities occurred in Tate, Sunflower, Tallahatchie, and Humphreys counties. These data show similarities from previous years with most trap catches stemming from the central to north-central portion of the state. Based on trap count variability in this survey, it is highly recommended that growers and consultants utilize pheromone traps to monitor southwestern corn borer in individual fields in which non-Bt corn hybrids are present. 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 con-

Project Results

versations and text messages to growers, consultants, and retail scouts.

Bucket traps for southwestern corn borer trapping utilized during these experiments.

Project Impacts/Benefits

Collaboration with county agents is a major benefit because this allows for area-wide sampling across the state of Mississippi. These data are collected and reported in real-time, allowing for quick dissemination of information on the Mississippi Crop Situation Blog website. Since scouting for southwestern corn borer is incredibly difficult and time consuming, data from this area-wide sampling effort allows stakeholders the information needed to make adjustments in scouting efforts throughout the growing season. Since the percentage of non-Bt corn acreage continues to rise or various reasons, these data continue to become more important annually.

Project Deliverables

Weekly blog articles were published on the Mississippi Crop Situation Blog (www.mississippi-crops.com) while trapping was being conducted. Data was also disseminated through various other methods including personal communication and E-mail.