



Mississippi Corn Promotion Board 2024 Progress Report

Title:
Southwestern Corn Borer Monitoring Program

PI: Tyler Towles

Department: Delta Research and Extension Center / Agricultural Science and Plant Protection

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 80 southwestern corn borer trapping locations were monitored from May through August in 2024. This is up from 58 locations from 2023 trapping efforts. Several new counties and extension agents were recruited to aid in trapping efforts to give the trapping program a broader reach across the state. In 2024, 31 trapping participants were involved with this project which is up from 15 in 2023. Traps were deployed earlier this season in attempts to monitor the first generation of SWCB. The first generation was relatively light across the state. However, the second (while light) and third generations were more easily detected. Trap counts were up from last year with most SWCB catches coming from central and north Delta. Coahoma, Leflore, and Tunica counties saw the highest moth catches occurring during the first three weeks of August. As with previous years, these data continue to show that large trap counts stem from the north-central portion of the Delta. Given this timing, corn was outside of the susceptibility window for significant damage due to SWCB, and control efforts were not warranted. It is recommended that producers and crop consultants continue to utilize pheromone traps to monitor SWCB as non-Bt corn acres continue to rise. Although trapping is recommended in individual fields, these surveys provide tremendous value to corn growers in Mississippi. They provide an initial indication of when SWCB populations are beginning to increase across the state and signal the timings when scouting should be intensified in individual fields. To maximize reach and engagement, efforts are made to publish blog posts with weekly trap counts before the

Project Results

MSU Crops Blog email blast every Saturday at noon. Southwestern corn borer monitoring blog posts received 212 reads across a 12-week sampling window, indicating that this data is meaningful to a considerable clientele base.



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.