Mississippi Corn Promotion Board
2022 Progress Report

Project
Title: Evaluation of Insecticidal Seed Treatments in Field Corn

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Department: BCH-EPP

Project Summary (Issue/Response)

Neonicotinoid seed treatments have come under tremendous scrutiny in the last several year due their potential link to pollinator decline. Mississippi State University has been a leader in developing and maintaining yield benefit data with new and current insecticide seed treatment options in corn. It is critical that MSU continues to research benefits now and in the future to provide to EPA when such products come under Federal review for reregistration. The benefits to corn producers are clear but NGO's and Federal organizations will require large university data sets to clearly show the benefits of these practices. With funding from the Mississippi Corn Promotion board, MSU can develop and maintain pertinent data on the value of these technologies to the Mississippi corn producers in both the Hills and Delta region of the state. This data will be used in a meta-analysis to provide benefits/risk assessments to the EPA when neonicotinoids come up for reregistration.

Project Results/Outcomes

Soil-borne insect infestations and their impacts on corn production vary greatly depending on the year. In fields that have a history of below ground insect pest justify the use of an insecticide seed treatments. Recuse treatments, or foliar applied insecticides, for soil-borne insect pests provide ineffective control, therefore, the use of insecticide seed treatment is critical for proper control, protection of corn stand, and seedling health.

Figure 1, shows the variability in corn damage at the V3 stage. While many treatments lower the damage below the untreated control, Cruiser at all rates and Avicta, provide the lowest amount of damage for both locations. Figure 2 shows the impacts of the insecticide seed treatment on yield. In Starkville, MS, insect pressure wasn't high enough to see any differences in yield when comparing the insecticide seed treatments to the untreated control. However, in Stoneville, MS all treatments except Poncho at 1.25 mg per seed and Lumivia yield higher than the untreated control.

Project Results

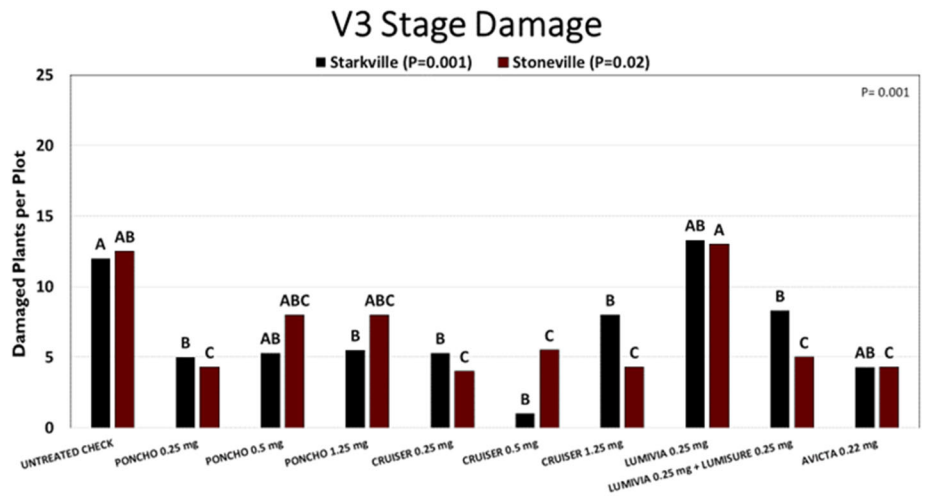

Figure 1. Insecticide seed treatment on insect damage at the V3 stage.

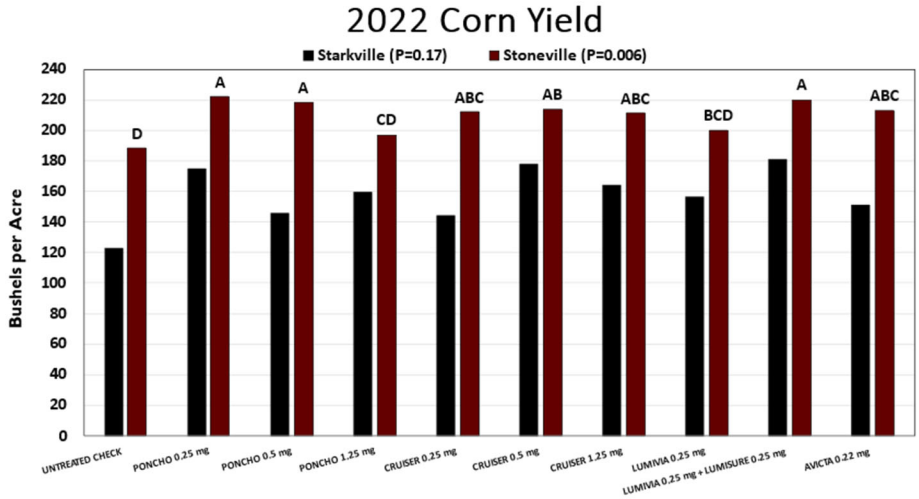

Figure 2. Corn Yield

Project Impacts/Benefits

This data demonstrates on an annual basis the value of insecticide seed treatments with different active ingredients and concentrations rates in Mississippi corn production systems. By having the opportunity to study a diverse portfolio of insecticide seed treatments, the university is able gather data over time in a variety of environments that allows for better decision-making for insect pest management on farm.

Project Deliverables

Data will be presented at various producer meetings, short courses, and conferences across the state, mid-south region, and nation.