Mississippi Corn Promotion Board
2024 Progress Report

Project
Title: Evaluation of Insecticidal Seed Treatments in Field Corn

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Department: Agriculture Science and Plant Protection

Project Summary (Issue/Response)

Neonicotinoid seed treatments have come under tremendous scrutiny in for many years, neonicotinoid seed treatments have been under tremendous scrutiny because of their potential impact on pollinator decline. Mississippi State University understands the importance of insecticide seed treatment options for below-ground and early season insect pest management. Not only has this university been a leader in developing and maintaining yield benefit data, but we have also continued to evaluate new and current insecticides for the best fit in Mississippi corn production systems. Having historically research data is critical not only for the present, but also for the future. These data are vital for the EPA when products come under Federal review for re-registration. The benefits of insecticide seed treatment in corn are apparent, however, these federal organizations often require large university data sets to show the clear benefits of such practices. Funding from the Mississippi Corn Promotion Board will allow MSU entomologies the opportunity to continue generating data that clearly defines the benefit of these technology to corn producers both in the Hill and Delta region of Mississippi. These 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

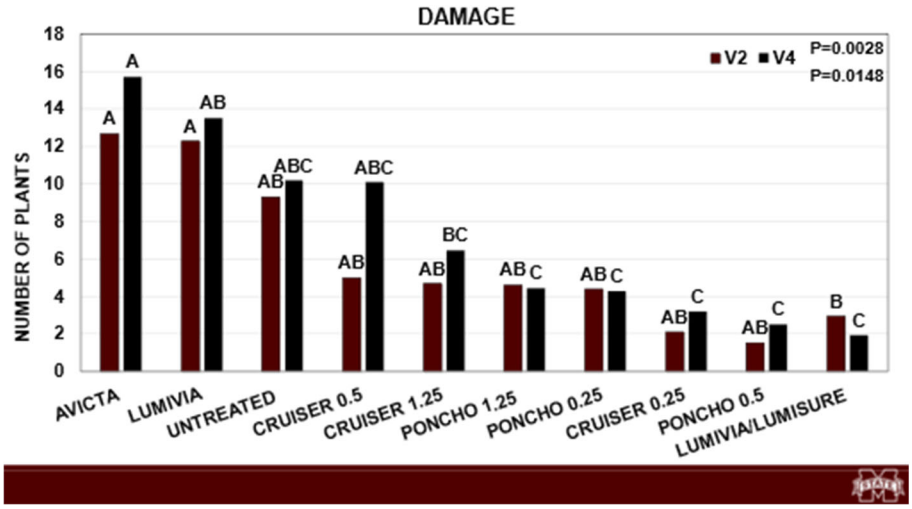
Stand established and seedling protection are essential for early season corn production. Unlike other insect pest, there are no rescue treatments for soil-borne insect related issues. These impacts on corn vary greatly depending on year and field history. Fields that have historically dealt with below ground insect pest benefit from the use of an insecticide seed treatment. Therefore, evaluation of insecticide seed treatment performance is essential to ensuring effective control and returns on investments. Additionally, having multiyear data is vital to arguing the importance of neonicotinoid seed treatments in row crop systems if product registration ever comes under question.

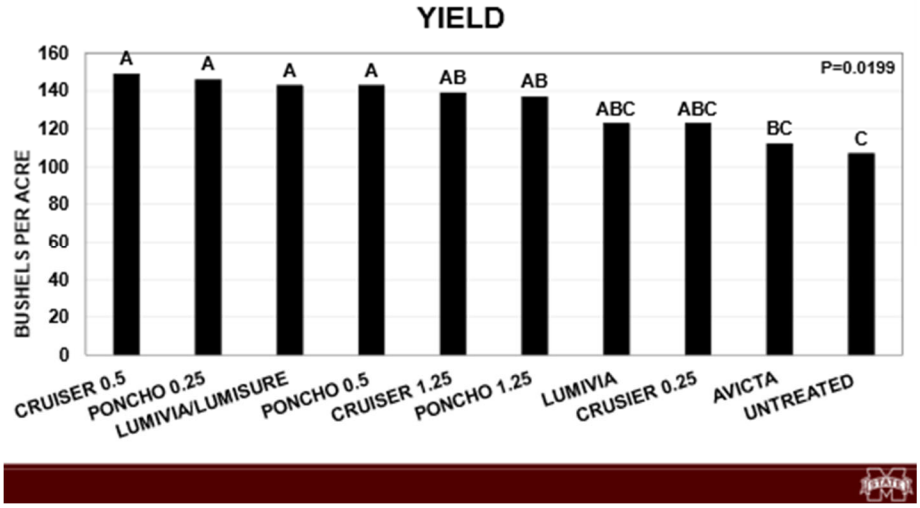
When evaluating the impacts of seed treatment on the number of damaged plants per eighty row feet, the lowest amount of damage was associated with the Poncho treatments, Cruiser at 0.25, and Lumivia plus Lumisure. The Lumivia alone and Avicta seed treatments had a higher number of damaged plants compared to the untreated control.

While damage rates varied between seed treatments, all treatment except Lumivia, Cruiser at 0.25 and Avicta yield higher than the untreated. The Cruiser at 0.5, Poncho at 0.5, Lumi-

Project Results

via plus Lumisure, and the Poncho at 0.25 had the highest yield. These data support the benefits of an insecticide seed treatment in corn to minimize insect related early season damage and increasing yields.





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.