



Mississippi Corn Promotion Board 2019 Progress Report

Project Title: Evaluation of Preemergence (PRE) and Postemergence (POST) Herbicide Applications on Weed Control Programs for Palmer Amaranth, Morningglory, and Grass Weeds in Corn

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Project Summary (Issue/Response)

A field study was conducted in 2019 at the Delta Research and Extension Center, in Stoneville, Mississippi, to evaluate: 1) the efficacy of herbicides available to Mississippi producers for controlling weeds in corn, and 2) the possible use of Sencor (metribuzin) in weed control programs and corn tolerance. Corn (Pioneer P1563 YHR) was planted on beds with 40-inch row spacing at a seeding rate of 2.5 seeds ft⁻¹ on April 23. Treatments were as follows: 1) AAtrex (atrazine) at 1.5 qt/A + crop oil concentrate (COC) at 1% (v/v) at V2-V3 (May 13) followed by (fb) Liberty (glufosinate) at 29 fl oz/A at V4-V5 (May 31); 2) AAtrex + COC at V2-V3 fb Roundup PowerMax (glyphosate); 3) RPM (Roundup PowerMax) at V2-V3 fb RPM at V4-V5; 4) Liberty at V2-V3 fb Liberty at V4-V5; 5) Halex GT (mesotrione + S-metolachlor + glyphosate) at 3.6 pt/A + AAtrex + COC at V3-V4 (May 20); 6) Zidua SC (pyroxasulfone) at 3.3 fl oz/A + Armezon (topramezone) at 0.75 fl oz/A + RPM + COC at V3-V4; 7) Zidua SC + Sencor (metribuzin) at 3 oz/A + Armezon + RPM + COC at V3-V4; 8) Zidua SC + Sencor + Armezon + RPM + COC at V2-V3; 9) Zidua SC + Armezon + RPM + COC at V2-V3; 10) Sencor + Armezon + RPM + COC at V3-V4; 11) Sencor + Armezon + RPM + COC at V2-V3; 12) Dual II Magnum (S-metolachlor) at 1.3 pt/A + AAtrex at 1 qt/A PRE fb AAtrex + COC at V3-V4; 13) Capreno (thiencazuron-methyl + tembotrione) at 3 fl oz/A + RPM + AAtrex + Ammonium sulfate (AMS) at 2.5% (v/v) at V2-V3; 14) Armezon at 0.57 fl oz/A + Status (diflufenzopyr + dicamba) at 3 oz/A + RPM + AAtrex + AMS at V2-V3; 15) Verdict (saflufenacil + dimethenamid) at 10 fl oz/A + Zidua SC + AAtrex at 2 qt/A PRE; 16) Acuron (S-metolachlor + atrazine + mesotrione + bicyclopyrone) at 80 fl oz/A PRE; 17) Resicore (acetochlor + mesotrione + clopyralid) at 2.25 qt/A PRE fb Durango DMA (glyphosate) at 32 fl oz/A + AAtrex at 1 qt/A at V2-V3; 18) Halex GT + Sencor at 4 oz/A + COC at V3-V4; 19) Dual II Magnum + Sencor at 4 oz/A PRE fb AAtrex + COC at V3-V4; and 20) nontreated check. RPM rate was 32 fl oz/A except for treatment 2 and 3 (22 fl oz/A).



Project Results/Outcomes

Corn Injury level was 0% for V2-V3 and 4 to 8% for V3-V4 for Sencor (tank-mix combinations) 1 wk after application (WAA), but there was no corn injury by 7 WAA. All treatments provided 95 to 100% control of prickly sida and hemp sesbania. Palmer amaranth and pitted morningglory control were 98 and 85, 94 and 88, 80 and 94, 94 and 89, 100 and 96, 93 and 95, 98 and 95, 99 and 97, 96 and 93, 96 and 96, 84 and 91, 100 and 90, 93 and 93, 96 and 94, 100 and 98, 90 and 94, 99 and 96, 98 and 99, 100 and 98% on July 8 from treatment 1 through 19, respectively. Barnyardgrass and broadleaf signalgrass control were 84 and 91, 92 and 93, 95 and 97, 89 and 92, 95 and 95, 95 and 93, 99 and 93, 98 and 97, 98 and 96, 85 and 86, 81 and 84, 98 and 93, 90 and 92, 92 and 91, 100 and 99, 98 and 96, 90 and 85, 97 and 96, 100 and 98%, respectively. Corn yield was 161, 178, 180, 150, 174, 172, 168, 175, 180, 164, 158, 180, 162, 171, 166, 159, 168, 184, and 177 bu/A for plots that received the application of treatment 1 through 19, respectively.

Project Results



This is a photo of the plot received the application of Halex GT at 3.6 pt/A + Sencor at 4 oz/A + COC at 1% (v/v) at V3-V4

Project Impacts/Benefits

Weed interference reduced corn yield to 95 bu/A (nontreated check). In conclusion, plots that received the tank-mix combinations of Sencor (metribuzin) provided comparable corn yield as standard treatments (trt. 5 and 12). Therefore, Sencor could be used in weed management programs in Mississippi corn.

Project Deliverables

This experiment was presented in 2020 at the Southern Weed Science Society Meeting in Biloxi, MS.