

UNIVERSITY RESEARCH IN OPTIMUM GAT CORN. David Carruth, Richard Zollinger, Chris Boerboom, Michael Moechnig, and Tom Hoverstad, Graduate Research Assistant, Professor, Department of Plant Science, North Dakota State University, Fargo, ND 58108-6050, Professor, Department of Agronomy, University of Wisconsin, Madison, WI 53706-1597, Assistant Professor, Department of Plant Science, South Dakota State University, Brookings, SD 57007, Scientist, Southern Research & Outreach Center, University of Minnesota, Waseca, MN 56093-2837.

The Optimum GAT trait provides metabolism of glyphosate as well as tolerance to ALS herbicides. The development of this technology offers growers a wide range of herbicides that can be applied both preemergence (PRE) and postemergence (POST). The herbicide systems will provide contact plus residual activity and two different modes of action that may help reduce resistant and tolerant weeds. DuPont has developed one and two pass weed control programs based on geographic location to be used in Optimum GAT corn. Treatments in these programs include combinations of glyphosate, ALS herbicides, and other corn labeled products. In 2009, treatments were applied on Optimum GAT corn at Prosper, ND, Brookings, SD, Waseca, MN, and Arlington, WI. Treatments for the two pass program included a PRE application followed by a post application when weeds reached 10-15 cm. Treatments for the one pass program included an early POST application at the V2 stage or a mid-post application when weeds reached 10-15 cm. Weed control was evaluated at different application timings for the weed species present at each location. Weed control ratings from PRE applications were highly variable from one location to another. Post treatments applied after a PRE provided at least 90% control of all weed species approximately one month after application at all four locations. The early POST application gave at least 83% control of all weed species 28 days after application at three of the four locations. Treatments applied at the mid-post timing also provided 73-99% control of weed species at all locations. This data shows that these one and two pass weed control programs can provide excellent weed control in northern Midwest states.