

EFFECT OF PLANTING DATE AND GROWTH RATE ON CORN TOLERANCE TO FORAMSULFURON ± ISOXADIFEN-ETHYL. Jeffrey A. Bunting, Christy L. Sprague, Emerson D. Nafziger, and Dean E. Riechers, Graduate Research Assistant, Assistant Professor, Professor, Assistant Professor, Department of Crop Sciences, University of Illinois, Urbana, IL 61801.

Two field studies were conducted at DeKalb and Urbana, IL in 2000 and 2001 to 1) evaluate the effect environmental conditions have on corn tolerance from applications of foramsulfuron with and without the safener isoxadifen-ethyl, 2) evaluate the effect leaf area and corn growth stage have on corn tolerance from applications of foramsulfuron with and without isoxadifen-ethyl, and 3) determine what effect isoxadifen-ethyl has on corn recovery from applications of foramsulfuron. All experiments were kept weed-free. Application rates of foramsulfuron were 37 g/ha. To study the effect of environmental conditions, corn was planted at three different dates and applications were made twice when one of the planting dates reached V6 corn. The three planting dates resulted in corn stages that ranged between V2 and V10 at the two application timings. There was a significant interaction between location and treatment ($P < 0.05$) for the planting date study. Corn growth stages for the early-postemergence timing were V2, V4 and V6 and V6, V8 and V10 for the late-postemergence timing. At Urbana there was no significant corn injury. However, at DeKalb corn injury from the early-postemergence timing was greatest at the V6 stage followed by V4 and V2, regardless of the addition of isoxadifen-ethyl. Corn injury also was greatest for the V6 corn from the late-postemergence application timing. Regardless of growth stage at foramsulfuron application corn yield was not different from the non-treated control. The effect of leaf area was studied to examine the increased corn response at the V6 stage. Selected corn plots were cut at the V2 stage resulting in an 80% reduction of biomass. Herbicide applications of foramsulfuron with and without isoxadifen-ethyl provided similar results when applications were made to V6 stage corn at 100% biomass or 20% biomass. Visual corn height recovery was quicker for the 20% biomass plants. However, there was no difference in corn injury recovery between corn plants treated with foramsulfuron and those treated with foramsulfuron plus isoxadifen-ethyl. Regardless of corn injury, there was no impact on corn yield at the end of the season. From these experiments, it appears that applications at the V6 growth stage greatly affect corn's tolerance to foramsulfuron.