

VOLUNTEER CORN CONTROL IN IMIDAZOLINONE-TOLERANT CORN WITH IMAZETHAPYR PLUS IMAZAPYR. David H. Johnson, E. Jamie Retzinger, Gary M. Fellows, and Tom J. Hartberg. BASF Corp., St. Paul, MN.

Volunteer glyphosate-resistant corn control with imazethapyr plus imazapyr was evaluated in imidazolinone-tolerant corn in 2000 and 2001 in Minnesota, Iowa, and Wisconsin. Pieces of cobs collected the previous fall from fields of glyphosate-tolerant corn were planted into plots of imidazolinone-tolerant corn and treated when the volunteer corn was 4 to 6 inches tall. Treatments were an untreated check, imazethapyr plus imazapyr at 0.056 lb/a with 0.25% v/v NIS and 1 qt/a 28-0-0, and imazethapyr plus imazapyr at 0.056 lb/a with 1.0% v/v MSO and 1 qt/a 28-0-0. Volunteer corn control, pollen shed, silking, and grain production were evaluated to determine if the herbicides could prevent contamination of nearby corn crops with pollen bearing unwanted genetically modified traits. Imazethapyr plus imazapyr gave 60 to 95% volunteer corn control, with MSO giving better control than NIS. Lack of complete control is probably because many plants in the clumps did not receive a full dose of herbicides. In untreated plots, 10 to 63% of the volunteer corn plants silked or shed pollen. In MN and IA, none of the treated volunteer corn plants produced silks or grain. Less than 2% of the plants shed pollen and none produced grain when NIS was used. No volunteer corn plants shed pollen when MSO was used. In WI, less than 12% of the volunteer corn plants silked or shed pollen, and less than 2 bu/a of grain was harvested from treated volunteer corn plants. At all locations pollen shed occurred several days after the hybrid corn was pollinating. Imazethapyr plus imazapyr eliminated or greatly reduced pollen shed, silking, and grain production from volunteer glyphosate-tolerant corn plants growing in imidazolinone-tolerant corn. These results show that imazethapyr plus imazapyr applied to imidazolinone-tolerant corn effectively controls volunteer corn and prevents or greatly reduces harvested grain contamination or cross contamination of hybrid corn with pollen bearing unwanted genetically modified traits.