

LUESCHEN, W. E.<sup>1\*</sup>, J. K. GETTING<sup>1</sup>, and E. L. FOLAND<sup>2</sup>, Department of Agronomy and Plant Genetics, 411 Borlaug Hall, University of Minnesota, St. Paul, MN 55108, and American Cyanamid Company, Northfield, MN 55057. AC 299,263 and Imazethapyr Carryover Potential in a Soybean/Sugarbeet Rotation.

Sugarbeet injury was evaluated the year following postemergence application of AC 299,263 at either 0.036, 0.071, or 0.140 kg ha<sup>-1</sup> and imazethapyr at either 0.036 or 0.071 kg ha<sup>-1</sup> in mid to late June to soybean. The sites used in 1993-1994 and 1994-1995 had soil pH levels of 8.1 and 6.1, respectively. Early season sugarbeet injury symptoms were observed with both rates of imazethapyr in 1994 (soil pH 8.1) but plant stands and yield were not reduced by either rate of this herbicide. Neither injury, stand losses, nor yield reductions were observed with any of the AC 299,263 treatments. In contrast to the 1993-1994 study, in 1995 (soil pH 6.1) both rates of imazethapyr applied to soybeans in 1994 resulted in severe sugarbeet injury, stand reductions, and reduced sugar yields. With AC 299,263 only the 0.140 kg ha<sup>-1</sup> rate (approximately 4X rate) caused sugarbeet injury and reduced sugar yields. Two sites were established in 1995-1996 that were approximately 300 m apart but differed in soil pH. The low pH site had pH values that ranged from 5.0 to 6.0 and the pH levels at the other site ranged from 6.2 to 8.1. Treatments were either 0.036 or 0.071 kg ha<sup>-1</sup> of AC 299,263 and 0.071 kg ha<sup>-1</sup> of imazethapyr applied postemergence to soybeans on June 16, 1995. Sugarbeets were planted in 1996. On the high pH site in 1996, imazethapyr at 0.071 kg ha<sup>-1</sup> resulted in sugarbeet injury early in the season but by early August little injury was observed with this treatment. In contrast, on the low pH site, imazethapyr carryover caused severe injury and greatly reduced the sugarbeet stands. On the high pH site AC 299,263 at either 0.036 or 0.071 kg ha<sup>-1</sup> caused no injury to sugarbeets. The highest rate of AC 299,263 caused significant sugarbeet injury and stand reduction on the low pH site.