

WEED CONTROL SYSTEMS FOR IMIDAZOLINONE-TOLERANT CORN. David Johnson, Brian Dahlke, Jamie Retzinger, Kristine Schaefer, Ken Carlson, Shawn Chapman, Tom Hayden, and Bill O'Neal, BASF Corp., St. Paul, MN.

The premix herbicide imazethapyr plus imazapyr in a 3:1 ratio controls 55 key grass and broadleaf weeds in imidazolinone-tolerant corn. However, imazethapyr plus imazapyr will not control ALS-resistant common waterhemp, common ragweed, and larger giant ragweed (greater than four inches tall or four leaf stage), so tank mixes are recommended for adequate control. In 2002 we evaluated several tank-mix partners added to imazethapyr plus imazapyr for control of these weeds, including dicamba plus diflufenzopyr in a 2.5:1 ratio, dicamba, and atrazine. When applied alone, imazethapyr + imazapyr applied at 0.056 lb ai/a controlled large crabgrass, barnyardgrass, woolly cupgrass, fall panicum, giant foxtail, green foxtail, shattercane, velvetleaf, redroot pigweed, common lambsquarters, common sunflower, and Pennsylvania smartweed greater than 90%, but control of ALS-resistant common waterhemp and larger giant ragweed (>4 inches) was approximately 30 and 50%, respectively. Adding atrazine at 0.45 lb ai/a improved activity on common waterhemp and larger giant ragweed by 20-40%. However, adding dicamba plus diflufenzopyr (0.131 lb ai/a) or dicamba (0.25 lb ai/a) improved control of both weeds to over 90%. In sequential application studies, residual common waterhemp control was best (>95%) when dimethenamid-P was applied preemergence at 2/3X rate for the soil type, followed by imazethapyr plus imazapyr tank-mixed with a dicamba-containing product postemergence. These results show weeds such as ALS-resistant common waterhemp and larger giant ragweed can be successfully controlled in imidazolinone-tolerant corn systems based on imazethapyr plus imazapyr tank mixed with dicamba.