

TIMING OF WEED REMOVAL IN ROUNDUP READY® CORN 2 SYSTEMS. Tony White\* and Dan Zinck, Monsanto Company, St. Louis, MO.

Timing is crucial when it comes to weed control in corn. In fact, numerous studies have indicated that allowing weeds to grow beyond four inches in height increased weed competition with corn and resulted in reduced corn yield compared to earlier control. A planned preemergence (PRE) plus postemergence (POST) approach to weed management generally results in more effective weed control and maximum crop yield potential compared to an approach consisting of only POST herbicides. Many experts recommend using the PRE followed by POST approach when planting Roundup Ready Corn 2 as well as conventional hybrids. Because growers continue to ask questions around proper weed control timing in Roundup Ready® Corn 2 systems, various studies were established between 2003 and 2007 at the Monsanto Learning Center near Monmouth, Illinois to better understand the value of proper weed control timing in corn.

As expected, yearly results varied slightly relative to the yield differences (positive or negative) among treatments. In 2006, the use of a PRE application of acetylchlor/atrazine (premix as Degree Xtra®) at 2 qt A<sup>-1</sup> followed by a POST application of glyphosate (Roundup WeatherMAX®) at 0.75 lb AE A<sup>-1</sup> provided the best overall weed control among all treatments. The addition of a PRE treatment provided nearly a 38 bu A<sup>-1</sup> yield advantage over a POST program alone. A study conducted in 2003 showed that the best yields were obtained when the first glyphosate application in a sequential POST program was made when weeds were approximately 2 inches tall. The timing of the second application, based on weed height of the second flush of weeds, did not significantly affect corn yield. This suggests that the application timing of the first application of a sequential POST herbicide program in corn is the most critical.