

CONTROL STRATEGIES FOR COMMON DANDELION IN NO-TILLAGE SOYBEAN. Aaron S. Franssen and James J. Kells, Graduate Research Assistant and Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

Michigan soybean producers have reported an increase in the occurrence of common dandelion (*Taraxacum officinale*) in no-tillage, glyphosate-resistant soybean, especially when glyphosate is the primary herbicide. Two studies were established in fall 2001 to address this concern. An application timing study evaluated common dandelion control with glyphosate and 2,4-D ester as affected by application timing. Single applications of glyphosate + AMS, 2,4-D ester, and glyphosate + 2,4-D ester + AMS were applied at two timings in fall 2001 and two timings in the spring 2002. The second study evaluated common dandelion control with sequential applications of glyphosate following preplant applications of either glyphosate or 2,4-D ester. Both experiments were conducted at the Michigan State University Clarksville Experiment Station on established populations of common dandelion. Glyphosate-resistant soybean was planted into corn stubble in 19-cm row spacing.

To evaluate the effect of application timing, treatments were applied early fall (EFALL), late fall (LFALL), early spring (ESPRING), and late spring (LSPRING). Common dandelion control was evaluated at the time of soybean planting. Fall herbicide applications were more effective than spring applications. Glyphosate applied EFALL and LFALL at 843 g/ha provided 79 and 81 percent common dandelion control, respectively. Glyphosate applied ESPRING and LSPRING provided 63 and 52 percent control, respectively. In general, common dandelion control with glyphosate was more effective than 2,4-D ester. 2,4-D ester at 562 g/ha applied EFALL, LFALL, ESPRING, and LSPRING provided 65, 74, 37, 34 percent control, respectively. Tank-mixing glyphosate at 422 g/ha + 2,4-D ester at 281 g/ha provided 72, 77, 50, and 34 percent control when applied EFALL, LFALL, ESPRING, and LSPRING, respectively.

Sequential applications of glyphosate significantly improved common dandelion control. Timing of the initial application is critical for common dandelion control late into the growing season. Initial applications of glyphosate and 2,4-D ester at 843 g/ha and 562 g/ha, respectively, were applied EFALL, LFALL, and ESPRING. A sequential application of glyphosate at 843 g/ha was applied at the V2 crop stage. Glyphosate applied EFALL and LFALL followed by the sequential application provided 84 and 83 percent control 54 days after planting, respectively. Glyphosate applied ESPRING followed by the sequential application provided 53 percent control. A single treatment with glyphosate applied only at the V2 timing provided 55 percent control, similar to the ESPRING followed by the sequential treatment. Applying 2,4-D ester EFALL and LFALL followed by glyphosate at the V2 timing provided 73 and 89 percent control, respectively. Common dandelion control with 2,4-D ester applied ESPRING followed by the sequential of glyphosate provided 62 percent control.

Glyphosate controlled common dandelion more effectively than 2,4-D ester. Either herbicide was more effective applied in the fall versus the spring. Tank-mixing glyphosate + 2,4-D ester controlled common dandelion greater than either of the herbicides alone when applied in the fall. When applied in the spring, the tank mixture was no more effective than the glyphosate alone. In addition, fall applications of glyphosate or 2,4-D ester followed by a sequential postemergence application was more effective than a spring application followed by the postemergence application. The ESPRING followed by the sequential treatment was no more effective than a single postemergence application at V2.