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WEED CONTROL COULD GET TOUGHER

University of Nebraska weed specialists are reporting the possibility of weed shifts in crop fields with the use of Roundup or Glyphosate. With more than 90 percent of soybean fields in Nebraska planted with glyphosate-tolerant varieties (e.g. Roundup Ready® varieties), soybean producers have clearly realized the benefits from this technology. However, widespread and repeated use of glyphosate-based herbicides raises several concerns from the practical standpoint, such as the potential for weed resistance and shifts in weed species.

Currently, we don't know of any glyphosate-resistant weeds being found in Nebraska, however, it appears that our fields are experiencing a slow shift in weed species. In the last three years, University weed extension specialists have been receiving phone calls and complaints on glyphosate failing to control certain weed species, including some "new weeds."

Weed species shift is not a new thing -- it has happened since man started cultivating crops.

The current list of troublesome weeds becoming more numerous includes: maretail (horseweed), morning glory (common and ivy leaf), wild buckwheat, Pennsylvania smartweed, lady's thumb, venice mallow, yellow sweet clover, field bindweed, water hemp, kochia, Russian thistle, primrose and volunteer Roundup Ready® corn.

If these weeds are not controlled, their seeds will be a major problem in the future. Such shifts in weed populations to more tolerant weeds is already resulting in increased weed control costs due to additional herbicide applications or increased glyphosate rates.

Weed size is the most important factor that determines the level of control for troublesome weeds. Ivy leaf morning glory and sweet clover were the hardest species to control looking at new data out of UNL. For example, a 22-ounce rate of glyphosate provided only 50 percent control of ivy leaf morning glory that was 4 inches tall. The control level was further reduced with taller morning glory, resulting in 30 percent and 21 percent control for 8- and 12- inch tall plants, respectively. A similar trend was observed for other weed species.

Because control of difficult species over three inches tall can be an issue, UNL specialists developed response curves to achieve at least 90% control of taller plants (6 to 20 inches tall). Based on our data from the dose response curves, to achieve at least 90 percent control of taller troublesome weeds, much higher rates of Roundup WeatherMax ranging from 1.5- 4 times the label rate are required. About 1.5-2 times the rate was needed to control 3- to 6-inch tall wild buckwheat, Venice mallow, velvetleaf, water hemp, sweet clover, ivy leaf morning glory and field bindweed.

Using various weed control tools is not a new thing, we only "forgot" about it since the introduction of Roundup Ready® crops. It is easy to fall into a trap of overusing glyphosate when one glyphosate-tolerant crop is grown after another. Proper use of this technology is the key to preserving the long-term benefits while avoiding many of the concerns about its use or overuse.



This data reaffirms what many practitioners have observed, that glyphosate used alone does not work as well today as it did five to six years ago. Mixing glyphosate with other post-emergence broadleaf herbicides, or using soil-applied herbicides after soybean planting, indicates a potential to effectively control most of these species.

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