

# Farmers relying on roundup lose some of its benefit

April 14 2009, by Brian Wallheime

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(PhysOrg.com) -- Roundup Ready crops have made weed control much easier for farmers, but a new study shows their reliance on the technology may be weakening the herbicide's ability to control weeds.

Bill Johnson, a Purdue University associate professor of weed science, said farmers who plant Roundup Ready crops and spray Roundup or glyphosate-based herbicides almost exclusively are finding that weeds have developed resistance. It is only a matter of time, Johnson said, before there are so many resistant weeds that the use of glyphosate products would become much less effective in some places.

"We have weeds that have developed resistance, including giant ragweed, which is one of the weeds that drove the adoption of Roundup," Johnson said. "It's a pretty major issue in the Eastern Corn Belt. That weed can cause up to 100 percent yield loss."

Johnson was part of a team, including Steve Weller, a Purdue professor of horticulture and landscape architecture, that surveyed farmers in Indiana, Illinois, Iowa, Mississippi, Nebraska and North Carolina about their views on the ability of Roundup Ready crops to help control problematic weeds. A paper on the survey was published in the most recent edition of the journal *Weed Technology*. Researchers from Iowa State University, Mississippi State University, North Carolina State University, the University of Nebraska and Southern Illinois University Carbondale also contributed.

Roundup Ready crops are resistant to glyphosate, the active ingredient in Roundup. So, if a farm uses Roundup Ready crops, the herbicide can be sprayed on crops to kill weeds without damaging those crops.

Johnson said the problem has become farmers' overreliance on Roundup and Roundup Ready crops. Those who saw the most benefit from using Roundup, according to the survey, rotated between types of crops and those that were Roundup Ready and conventional crop varieties.

Johnson said this shows that subjecting weeds to different herbicides is important to keeping them from developing resistance to any particular herbicide.

"Farmers do not think resistance is a problem until they actually have it," Johnson said. "And they think the chemical companies can turn on the spigots and produce a new herbicide whenever they want. The problem is, since Roundup is so effective, there's not been any money for new herbicide discovery."

Johnson said farmers should treat Roundup and Roundup Ready crops as an investment and work to protect the technology. Rotating crops consistently and using various herbicides will slow the development of glyphosate-resistant weeds.

"Go after weeds with two different herbicides. That's the best short-term solution," Johnson said. "We want to minimize the number of weeds resistant to Roundup. To do that, you want to minimize the exposure that a weed population has to Roundup. If you diversify a little bit, you'll extend the life of the technology."

Monsanto, the maker of Roundup, funded the survey. Johnson said the next step is studying the differences among management strategies in grower fields to see which will slow the build-up of glyphosate

resistance.

Source: Purdue University ([news](#) : [web](#))

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