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PROJECT

# LSP Myth Buster #19

An ongoing Land  
Stewardship Project  
series on ag  
myths & ways  
of deflating them.

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**Myth:** Genetically-engineered products like Roundup Ready crops will reduce the presence of dangerous pesticides in the environment.

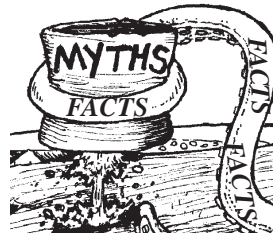
## Fact:

When Monsanto first introduced crops genetically engineered to resist being killed by herbicides in the 1990s, it made the argument that products such as Roundup Ready soybeans were a boon to the environment. For one thing, Monsanto claimed, this technology would help protect the environment by reducing reliance on herbicides which are much more toxic than glyphosate, the main ingredient in Roundup. Such older style herbicides are often applied on the soil before the crop plants emerge or when they are quite young. As a result, they must have a “residual” quality about them, meaning they can stick around for weeks, killing weeds the entire time. That’s good news for weed control, but can be bad news for the environment: the longer a chemical stays active, the more chance it has of producing ecological mischief. For example, atrazine, a highly residual herbicide, can be found in groundwater long after it’s applied. Researchers such as Tyrone Hayes have found that low levels of atrazine can cause serious health problems in amphibians.

Indeed, glyphosate is a relatively benign herbicide and is volatile, quickly breaking up in the environment after it’s applied. When farmers plant herbicide-resistant crops, they can spray glyphosate later in the season, when the corn or beans are well established, and weeds are thriving. Since you are applying the chemical directly to growing weeds, instead of to soil that will eventually produce weeds, in theory you can get away with using much less herbicide per acre.

But glyphosate has proven to be its own worst enemy. First soybean farmers and later corn farmers adopted the “Roundup Ready Package” whole hog, and the USDA estimates that today at least 90 percent of this country’s soybean acres are being raised using a herbicide-resistant system (around 36 percent of U.S. corn is herbicide resistant). The problem is all that glyphosate is now pro-

ducing herbicide-resistant weeds, despite assurances by the pesticide industry during the early 1990s that the complex formulation of the chemical would outsmart weeds indefinitely. But the laws of natural selection could have predicted such an occurrence: the more you use of a product that kills, whether it be a herbicide, bug killer or antibiotic, the more likely a few weeds, aphids or bacterium will outsmart it and survive. And when they reproduce, there is a good chance at least a few of their offspring will have inherited that ability to fend off the killing effects of a certain chemical.



In the case of crop production, glyphosate-resistant weeds have been popping up in spots around the world, including in the Midwest. In 2007, fields were found in southern Minnesota where glyphosate wasn’t able to control giant ragweed and water hemp at four to eight times the rate recommended on the label, according to *Farm and Ranch Guide* magazine.

There are a couple of strategies for fighting superweeds. These days, the one that’s being promoted heavily by pesticide company experts and university extension educators involves diversifying the herbicidal arsenal and tossing a mix of chemicals at weeds. It’s a sound strategy: the less uniform the chemical use, the less likely a superweed will develop and reproduce. The problem is, what’s being recommended is a heavier reliance on pre-emergent herbicides that stick around for a long time. It would be bad enough if farmers were being told to replace glyphosate with these more toxic, residual herbicides. But the recommendation is that they use glyphosate and pre-emergent herbicides as a “chemical package.” So

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*This Myth Buster is brought to you by the members and staff of the Land Stewardship Project, a private, nonprofit organization devoted to fostering an ethic of stewardship for farmland and to seeing more successful farmers on the land raising crops and livestock. For more information, call 651-653-0618 or visit [www.landstewardshipproject.org](http://www.landstewardshipproject.org).*

## ***LSP Myth Buster #19:* Genetically-engineered products like Roundup Ready crops will reduce the presence of dangerous pesticides in the environment.**

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it's no accident that at a recent field day on glyphosate-resistant weeds at the University of Minnesota's Southern Research and Outreach Center, a "biological research and development scientist" for pesticide giant Syngenta was on hand to discuss the issue. His advice? Buy more pre-emergent herbicides from Syngenta.

Researchers are now studying the "farm-level economic impacts" of combining pre-emergent products and glyphosate. Translation? The price of chemical weed control is about to go up. That puts a damper on another argument Monsanto made for adopting Roundup Ready technology: it was supposed to save farmers money.

### **More information**

◆ University of Illinois Extension has a summary of the herbicide resistant weed issue at [www.farmgate.uiuc.edu/archive/2007/03/are\\_you\\_booking\\_1.html](http://www.farmgate.uiuc.edu/archive/2007/03/are_you_booking_1.html).

◆ For more on research related to atrazine and its impacts on the environment, see the Autumn 2007 issue of the *Land Stewardship Letter* at [www.landstewardshipproject.org/news-lsl.html](http://www.landstewardshipproject.org/news-lsl.html).

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