

## Do GMOs cause ‘superweeds’?

Crop biotechnology critics [argue](#) that the use of genetically modified seeds, which now represent nearly 95 percent of soybeans and 90 percent of corn grown in the United States, has led to a surge in so-called superweeds and that they do more harm than good.

“We don’t need pesticide-resistant GMOs to control weeds. There are natural ways to fight them,” [said](#) Bill Freese, with the Center for Food Safety, which is opposes GM crops. “The GMO industry likes to put a warm fuzzy glow on GMOs but we don’t see much use for them at all.”

Most scientists dislike the use of the word “superweeds” arguing that it polarizes the issue. Superweeds are not ‘super’ in any real sense of the word; they are weeds that have evolved to evade a particular weed management strategy. [See FAQ [“What are superweeds?”](#)] A dandelion that is so short that it has almost no stem could be considered a superweed. Its super power is crouching beneath the blades of lawnmowers.

Weeds are one of agriculture’s major challenges. That challenge is magnified when weeds develop resistance to a particular herbicide. Scientists believe this occurs through natural selection: The herbicide eliminates susceptible weeds, but doesn’t kill those with some natural immunity. Over time, those immune plants become more common and spread. Farmers contribute to this problem when they don’t vary herbicides usage, or when they use weaker-than-recommended doses of an herbicide.

There’s also the remote possibility, often cited by GMO critics, that modified crops can [pass on](#) their engineered tolerances to closely-related weeds growing nearby. However, there have been [no documented cases](#) of this, and scientists consider it unlikely. The real problem has come from the increased reliance on glyphosate both by farmers who plant GMO seeds and by those who use it for weed control around their fields. The pairing of glyphosate with GMO crops since 1996 has led to a steady [increased in its use](#).



SOURCE: Heap, I. The International Survey of Herbicide Resistant Weeds. Available at [www.weedscience.com](http://www.weedscience.com). Accessed March 18, 2013.

The problem is not the GMO seeds themselves, according to University of Wyoming weed scientist [Andrew Kniss](#):

*If GM crops have contributed significantly to the development of herbicide resistant weeds, we would expect the number of unique instances of these superweeds to increase following adoption of GM crops. In the eleven-year period before GM crops were widely grown, approximately 13 new cases of herbicide resistance were documented annually. After GM crop adoption began in earnest, the number of new herbicide resistant weeds DECREASED to 11.4 cases per year.*

Glyphosate is a problem, for sure, particularly in soybeans, because of its popularity. Scientists have [discovered](#) 32 different weed species that have developed resistance to the herbicide. However, the link between glyphosate and the creation of 'superweeds' is not always so clear. As Kniss has [written](#), "In corn, the Roundup Ready system resulted in a diversification of herbicide sites of action, which would be expected to decrease selection for herbicide resistant weeds." Similar encouraging patterns have been observed in rice and wheat.

The first glyphosate-resistant weeds were found in Australia in 1996, where no GM crops were grown. And there are [more instances](#) of glyphosate-resistant weeds in areas with non-GM crops than in areas with GM crops. That's likely the result of glyphosate being used by almost all conventional farmers for general weed-control. Some of the blame for that can be placed on Monsanto. When GMO crops were first introduced in the mid-1990s, the company encouraged farmers to look upon the herbicide as a cure-all, assuring them that there was little possibility of weeds developing strong resistance.

But not growing glyphosate resistant GMO crops will not solve the hardy weed problem. [See FAQ ["What are superweeds?"](#)]. That has stopped opportunistic food companies from exploiting misconceptions about glyphosate, weeds and sustainability. When Chipotle launched its anti-GMO campaign, it [linked its decision](#) to switch from GMO soybean oil to non-GMO sunflower oil to its claim that GM crops damage the environment: "Evidence suggests that GMOs engineered to produce pesticides or withstand powerful chemical herbicides damage beneficial insect populations and create herbicide resistant super-weeds."

The problem with that reasoning is that some of the worst cases of weed resistance show up in conventionally-developed crops in particular sunflower crops that are conventionally [bred](#) to tolerate a class of herbicides called ALS inhibitors. Many more weeds have become resistant to ALS inhibitors than to glyphosate.