

## Report Raises Alarm over 'Superweeds'

Use of herbicides such as Monsanto's Roundup is on the rise. As weeds become resistant, environmental activists blame genetically modified crops

by [Brian Hindo](#)

It's been 12 years since the first genetically modified crop was sown in the U.S., and controversy has raged since. Now, another salvo has been launched, in the form of a new report from environmental activist organization Friends of the Earth International and the Center for Food Safety, a Washington (D.C.) advocacy group. Called *Who Benefits from GM Crops?*, the study examines the emergence of "superweeds" that have developed a resistance to conventional herbicides such as Monsanto's ([MON](#)) Roundup. The culprits, says the report, are plants like corn, soybeans, and cotton that have been genetically modified to survive Roundup. Farmers can spray their fields and the weeds will die but the crops will thrive.

As more acres of "Roundup Ready" crops are planted, the use of the pesticide has increased. The increased application has led some weeds to develop a resistance to glyphosate, the generic term for the chemical in Roundup. And, in turn, farmers have had to apply stronger doses of pesticide to kill the superweeds.

According to the report, the amount of weed-killing herbicides used by farmers has exploded, rising fifteenfold since biotech crops were first planted. The report lists eight weeds in the U.S.—among them horseweed, common waterhemp, and hairy fleabane—that have developed resistance to glyphosate, the most commonly applied pesticide. The next generations of biotech seeds include some that have been modified to withstand stronger doses of herbicides, while another strategy has been to develop tolerances to different herbicides and to combine multiple types of resistance in the same seed. "It's a chemical arms race against these weeds," says Bill Freese, a policy analyst at the Center for Food Safety and a co-author of the report.

### MONSANTO PROFIT FORECAST UP

In response, Monsanto said in an e-mailed statement: "The Friends of the Earth report makes numerous inaccurate and false claims. Information sources cited are rarely from peer reviewed scientific journals or research and are not representative of actual impacts." Apropos weed resistance, the company said, in part, "Monsanto takes product stewardship and claims of resistance to glyphosate very seriously....Monsanto also sponsors internal and external research to understand the various aspects of glyphosate-resistant weeds, and research on best management practices in Roundup Ready crops."

The boost in herbicide use is proving to be a financial boon for Monsanto. Its Roundup business was thought to be an albatross, as the pesticide came off patent in 2000 and revenue quickly plunged. Chief Executive [Hugh Grant](#) hastened the company's shift away from reliance on Roundup sales to an emphasis on GMO (genetically modified organism) seeds—in particular, commodity crops such as corn and soy, which are the grist for animal feed, food processing, and biofuels. As demand for agricultural commodities has soared in recent years, stoked by growing wealth and changing diets in developing nations, so too have [the plantings of GMOs](#) (*BusinessWeek*, 12/6/07).

But as more seeds with a baked-in resistance to Roundup are planted around the world, it's helping prop up sales of the herbicide. Some 80% of biotech seeds have herbicide-tolerance in them, and the vast majority of those tolerate Roundup specifically. In fact, on Feb. 12, Monsanto Executive Vice-President [Brett Begemann](#) told investors at a conference that the company would raise its 2008 earnings guidance, thanks in part to better-than-anticipated Roundup sales. In the company's first fiscal quarter, sales of Roundup and other chemicals jumped 47%. The company expects up to \$1.4 billion in gross profit for the year from its chemicals business, Begemann said, which would be a 10% increase from 2007. (Monsanto forecasts \$3.5 billion in gross profit from its seeds businesses, a

16% increase.)

## ENVIRONMENTAL IMPACT UNCLEAR

Superweeds are most directly a nuisance for farmers, who have to work harder to tend their fields and spend more on buying and applying herbicides. But the impact reaches consumers, too, argues Freese, as increased levels of chemicals hit plants and can work their way into groundwater. So far, the concerns have not hindered the adoption of biotech crops: On Feb. 13, a biotech industry group, the International Service for the Acquisition of Agri-Biotech Applications, is expected to release its own report showing an uptick in plantings of GMO crops around the world.

But many of the side effects, both actual and potential, continue to stir debate. Companies such as Monsanto, DuPont's ([DD](#)) Pioneer, and Syngenta ([SYT](#)) must submit environmental assessments to the U.S. Agriculture Dept.'s Animal & Plant Health Inspection Service (APHIS) before a biotech plant can be approved for commercial use. Freese argues, however, that more rigorous regulatory evaluations of biotech crops' impact can stave off environmental side effects. In March, 2007, a federal judge in Northern California halted plantings of biotech alfalfa, ruling that the USDA's oversight was inadequate.

For its part, Monsanto said in the Feb. 12 statement: "As part of the petition for deregulation, Monsanto includes information on glyphosate-resistant weeds and Monsanto's weed resistance stewardship program. USDA reviews that information, along with other information such as research journal articles, in preparing their environmental assessment."

Academics have been studying the impact of GMOs, but the research is still nascent. Just last November, the National Academy of Sciences convened a workshop of entomologists, geneticists, biologists, and others to discuss research priorities on how genetically engineered plants and animals impact the environment. The results are expected later in the year.

[Hear a podcast debate](#) about GMO Crops.

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