

USDA downplays own scientist's research on ill effects of Monsanto herbicide



by Tom Laskawy



Sure, the crops are genetically engineered to withstand Roundup; but what about the soil?

What would happen if a USDA scientist discovered that one of the most commonly used pesticides on the planet with a reputation for having saved millions of tons of US soil from erosion was -- rather than a soil savior -- a soil killer? That, to quote a certain paranormal expert, would be bad. And yet, it's true. This news came to the fore thanks to a recently published must-read article from Reuters on how government regulators are “dropping the ball” on agricultural biotechnology. It begins with the story of USDA scientist Dr. Robert Kremer. Kremer has spent the last fifteen years looking at Monsanto's blockbuster broad-spectrum herbicide glyphosate (aka RoundUp), the most commonly used pesticide in the world and the companion to Monsanto's possibly monopolistic RoundupReady lines of genetically engineered seeds. While exact figures are a closely guarded secret thanks to the USDA's refusal to update its pesticide use database after 2007, estimates suggest upwards of 200 million pounds of glyphosate were dumped on fields and farms in the US in 2008 alone. That's almost double the amount used in 2005.

Glyphosate has a reputation as the “safest” of all the agricultural herbicides and has become the primary means of weed control in industrial agriculture. While being the best of an extremely nasty bunch may be the faintest of praise, the USDA relies on this perception, which has been fueled by industry and government research indicating that the chemical dissipates quickly and shows low toxicity (as poisons go, that is) to humans. The claim of “millions of tons of soil saved” relates to the soil that would have otherwise been lost to erosion without glyphosate's central role in chemical no-till farming techniques. Indeed, experts such as Dr. Michael Shannon, a program director at the USDA's Agricultural Research Service, as well as other USDA scientists, make this anti-erosion claim the core argument in favor of the widespread use of the chemical.

Even so, glyphosate has been under attack from several quarters of late. Research indicates that, while glyphosate on its own may be relatively “safe,” it is actually quite toxic in combination with the other (supposedly “inert”) ingredients in commercial preparations of the herbicide, i.e. the stuff that farmers actually spray on their fields. And of course, there is the frightening spread of superweeds that glyphosate can no longer kill. It's to the point that thousands of acres in the South have been abandoned to resistant strains of giant pigweed. Enter Dr. Kremer. His work, published in the peer-reviewed *Journal of European Agronomy*, further tarnishes glyphosate's golden status. He has found that glyphosate's side-effects **in the ground** are far more severe than previously thought. As he described it to me, the use of glyphosate causes:

- damage to beneficial microbes in the soil increasing the likelihood of infection of a crop by soil pathogens
- interference with nutrient uptake by the plant
- reduced efficiency of symbiotic nitrogen fixation
- overall lower-than-expected plant productivity

Dr. Kremer has even helpfully provided a set of recommendations for farmers who use glyphosate or who plant Monsanto's RoundUp Ready seeds. According to Dr. Kremer, the worst of the problems can be avoided if 1) farmers only plant RoundupReady crops every other year in the same field, 2) come up with alternate crop residue management techniques and 3) plant cover crops "to revitalize soil biological and ecological processes as well as improve other aspects of soil quality."

A USDA scientist wouldn't recommend measures like this if he weren't convinced his results merited it. From the Reuters article: "This could be something quite big. We might be setting up a huge problem," said Kremer, who expressed alarm that regulators were not paying enough attention to the potential risks from biotechnology on the farm, including his own research ... "Science is not being considered in policy setting and deregulation," said Kremer. "This research is important. We need to be vigilant."

Meanwhile, the response from the USDA to Dr. Kremer's work has been, shall we say, subdued. Dr. Shannon of the USDA/ARS admitted that Dr. Kremer's results are valid, but said that the danger they represent pales in comparison to the superweed threat. In fact, Shannon specifically likened Dr. Kremer's new findings to unfortunate but unavoidable side-effects like any drug might have. Making matters worse, and much to Dr. Kremer's chagrin, the ARS refused to publicize his work on glyphosate. While ARS spokesperson Sandy Miller Hays admitted that an announcement about his findings was written, she claimed it was withheld due to the quality of the writing. In other words, the ARS killed the story because they couldn't bother to do some light editing. Nor was the USDA's National Institute of Food and Agriculture (NIFA) very interested in Kremer's findings. Run by Roger Beachy, a man with long-time links to the ag-biotech industry and an openly hostile attitude toward organic farming, NIFA is the bureaucratic nook within USDA responsible for informing farmers of new research.

When I asked if NIFA had a position on Dr. Kremer's work or if his guidance was being used by USDA extension agents, a NIFA spokesperson replied via email that: The advice and counsel provided by extension agents in the field is not "approved" or "sanctioned" by NIFA; typically, these materials are developed through state and county extension offices, which receive some NIFA funding (how much varies from state to state) but are not managed by NIFA. NIFA does not take positions on research papers, and has not produced any guidance about Dr. Kremer's work. In short, there's nothing to see here. Move along! This most chilling comment of all, however, was provided by Miller Hays who observed that a European journal was the ideal place for this work because Europeans are "passionately interested in... the soil and pesticide use and that sort of thing." As opposed to us Americans, who don't care about the soil and pesticide use and that sort of thing?

Following this particular USDA trail has reminded me of the age-old question, if a tree falls in a forest and people are standing around staring at it with their hands over their ears screaming "I'm not listening!!" at the top of their lungs, does it make a sound? What I find most concerning about this episode is the willful inability of most divisions at USDA to conceive of agriculture without pesticides in general and glyphosate in particular. Not that companies aren't planning for a post-glyphosate world. A recent article in the *Western Farm Press* painted a bleak future wherein farmers overcome the failures of individual pesticides (failures caused by USDA and industry-encouraged overuse, by the way) by planting genetically modified seeds that provide resistance to five or even six different pesticides at once.

The "simplicity" of Monsanto's GMO system of Roundup Ready seeds plus glyphosate will be replaced by a dizzying and insanely toxic cocktail of pesticide treatments and hugely expensive seeds. Leaving aside cost, farmers will barely be able to manage the mixing and maintenance of their equipment in this scenario.

There are alternatives. I only wish that the USDA technical divisions would start taking the work of researchers like Dr. Kremer (not to mention sustainable ag advocate Deputy Secretary of Agriculture Kathleen Merrigan) more seriously. Instead, they insist that farmers stay on the ever-accelerating and increasingly damaging chemical treadmill.