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March 13, 2014

Testimony from the Farmington River Watershed Association (FRWA) regarding **S.B. No. 443 (RAISED)** AN ACT CONCERNING PESTICIDES ON SCHOOL GROUNDS, PARKS, PLAYGROUNDS, ATHLETIC FIELDS AND MUNICIPAL GREENS.

To Sen. Ed Meyer, Rep. Linda Gentile, co-Chairs, and Members of the Environment Committee:

Thank you for the opportunity to comment on this bill. **The Farmington River Watershed Association (FRWA) supports S.B 443, including an added ban of GMO grass seed that is pesticide-resistant.**

FRWA is a non-profit citizens' group whose mission is to preserve, protect, and restore the Farmington River and its watershed. As a river protection organization, we are concerned over toxic runoff to our surface waters, including runoff of pesticides (including herbicides). We actively promote pesticide-free lawns; our educational outreach program includes presentations and other information about the hazards of pesticide use in and around the home, and tips for controlling pests without commercial toxic chemicals.

There are multiple reasons to avoid pesticide use except where it is absolutely necessary and other measures will not suffice.

- The pesticides are toxic to organisms other than the targeted pest. Any beneficial functions of the non-target species are lost when they are eliminated. Thus pesticide application disrupts the working of natural communities.
- The toxicity of some of these compounds is apparently under-estimated. Recent studies point out that their toxicity is tested in isolation from the other ingredients that are in the formulations sold to users. Once combined with these other ingredients, their toxicity is considerably higher.<sup>1</sup>
- The toxicity of these compounds in combination with other pesticides may not be taken into consideration when estimating the hazards they pose to public health or natural systems.
- Use of pesticides and herbicides favors the survival and proliferation of pesticide- or herbicide-resistant strains of pest.

Toxicity risks are not limited to the area where the pesticide is applied. One of our special concerns as a watershed association is the volume of unnecessarily applied pesticide that washes off lawns, athletic fields, park grounds, and other areas during rainstorms. Contaminated stormwater runoff enters our streams and rivers, where it exposes aquatic animals and recreational users of the river to whatever was applied on land.

In addition to these effects, we also recognize the hazards that these substances present to the children that play on lawns, high school athletic fields, town parks, or other recreational areas. These toxins can have subtle, complex, or long-delayed effects. Many pesticides are close mimics of hormones; as such they can be very potent in extremely small doses.

The commercial sale of grass seed that is genetically modified to resist herbicide only makes the hazards worse. Weed-free grass is not a necessity to begin with. There's no excuse for putting the health of our children and our environment at risk by planting grass that is designed to undergo wholesale herbicide applications. That simplistic solution flies in the face of good landscape management to begin with.<sup>2</sup> Besides that, do we really think that a higher risk of childhood cancer is an acceptable cost for a great soccer field, or (more to the point) for supporting a special business interest?

This bill recognizes that children and their natural environments are harmed by unnecessary pesticide use; that proven alternatives to pesticide application exist; that genetically modified grass seed invites more use of herbicide, not less; and that there should be allowance for emergency applications of pesticide to address real public health threats. For all those reasons, FRWA supports this bill.

Respectfully submitted,

A handwritten signature in blue ink that reads "Eileen Fielding". The signature is written in a cursive style with a long, sweeping underline.

Eileen Fielding  
Executive Director

See also attached reference.

1. BioMed Research International  
Volume 2014 (2014), Article ID 179691, 8 pages  
<http://dx.doi.org/10.1155/2014/179691>

Research Article

*Major Pesticides Are More Toxic to Human Cells Than Their Declared Active Principles*

Robin Mesnage,<sup>1</sup> Nicolas Defarge,<sup>1</sup> Joël Spiroux de Vendômois,<sup>2</sup> and Gilles-Eric Séralini<sup>1</sup>

### Abstract

Pesticides are used throughout the world as mixtures called formulations. They contain adjuvants, which are often kept confidential and are called inerts by the manufacturing companies, plus a declared active principle, which is usually tested alone. We tested the toxicity of 9 pesticides, comparing active principles and their formulations, on three human cell lines (HepG2, HEK293, and JEG3). Glyphosate, isoproturon, fluroxypyr, pirimicarb, imidacloprid, acetamiprid, tebuconazole, epoxiconazole, and prochloraz constitute, respectively, the active principles of 3 major herbicides, 3 insecticides, and 3 fungicides. We measured mitochondrial activities, membrane degradations, and caspases 3/7 activities. Fungicides were the most toxic from concentrations 300–600 times lower than agricultural dilutions, followed by herbicides and then insecticides, with very similar profiles in all cell types. **Despite its relatively benign reputation, Roundup was among the most toxic herbicides and insecticides tested. Most importantly, 8 formulations out of 9 were up to one thousand times more toxic than their active principles. Our results challenge the relevance of the acceptable daily intake for pesticides because this norm is calculated from the toxicity of the active principle alone. Chronic tests on pesticides may not reflect relevant environmental exposures if only one ingredient of these mixtures is tested alone.**

## 2. Genetically Modified Grass Could Make Superweed Problem Worse

Source: <http://www.wired.com/wiredscience/2011/07/engineered-bluegrass/>

By [Brandon Keim](#)

- 07.11.11



A genetically engineered grass expected to hit U.S. markets without government review could speed the evolution of hard-to-control weeds, and perhaps require a return to toxic herbicides scrapped decades ago.

On July 1 — a Friday afternoon, a time usually reserved for potentially controversial news — the U.S. Department of Agriculture announced that Scotts Miracle-Gro's herbicide-resistant Kentucky bluegrass [would be exempt from tests typically required of transgenic crops](#).

Scotts Miracle-Gro is the largest U.S. retailer of grass seed, and the modified grass could be widely used in residential lawns. It's resistant to glyphosate, a front-line herbicide known commercially as Roundup.

The grass will survive extra doses of Roundup, allowing more than usual to be applied. That's the problem, said agricultural biotechnology expert [Douglas Gurian-Sherman](#) of the Union of Concerned Scientists.

“The more a chemical is used consistently, the more likely that somebody’s weeds will become resistant. That’s standard, agreed-upon science,” said Gurian-Sherman. “The way that Roundup is used because of transgenic crops exacerbates that problem.”

Herbicide resistance evolves in much the same way as antibiotic resistance: When a weed- or bug-killing compound is applied, any weeds or bugs lucky enough to be genetically resistant will have the best chance to survive and reproduce.

Many crop plants are already engineered to be Roundup-resistant, and heavy use of the herbicide appears to have fueled the evolution of dozens of Roundup-resistant weed strains. They’re [a major threat to agriculture](#) in parts of the United States, virtually uncontrollable except by hand-pulling or a [return to toxic, decades-old herbicides](#) that the relatively benign Roundup had replaced.



Pigweed growing in a soybean field. Since the introduction of Roundup-ready soy, Roundup-resistant pigweed has become a major problem. *(Image: pawpaw67/Flickr)*

“The industry hasn’t developed a new herbicide in a long time. When resistance develops to something like glyphosate, it’s not like we can move to some new chemical,” said Gurian-Sherman.

Compared to pigweed that can grow three inches each day in soybean fields, Roundup-resistant lawn weeds would be a nuisance rather than an economic threat. But just as superweeds have pushed farmers to bring back toxic herbicides, so might they push homeowners and landscapers.

“We’re burning out Roundup and going back into the past,” said Gurian-Sherman. “The same kind of thing could happen in residential use.”

Another potential problem is the spread of Roundup resistance into related strains of bluegrass, said plant geneticist [Norman Ellstrand](#) of the University of California, Riverside.

“I don’t know what other bluegrass species it’s cross-compatible with, but I can say with 98 percent certainty that it’s cross-compatible with some,” said Ellstrand. “If this plant grows and flowers at the same time as other bluegrass, they’ll flourish. You’ll have a new incidence of herbicide resistance getting into the wild.”

Whereas Kentucky bluegrass is popular for lawns, it’s [not always welcome](#). Other members of its [500 species-strong genus](#) are considered weeds.

A lesson can be taken from the unintentional escape of genes from rice bred for resistance to the Clearfield herbicide, said Ellstrand. “Now you have a very bad, weedy rice in Costa Rica that’s resistant to the herbicide,” he said. “It doesn’t happen easily with rice. If it happens with rice, it will happen with bluegrasses.”

[Another species of Roundup-resistant grass](#) developed by Scotts Miracle-Gro for golf courses was nixed by the USDA because of fear that resistance would spread to related pest species, noted Ellstrand. “The U.S. Forest Service waded in and said, ‘We don’t want it,’” he said.

Had the the Department of Agriculture decided to treat Roundup-ready bluegrass as a genetically modified plant, extra assurance of its environmental safety would have been demanded. But they decided not to because it fit through a loophole.

Genetically engineered plants are technically designated for regulation according to methods used to insert and activate new genes. Earlier methods used bacteria, which triggered pest-related clauses of the USDA’s Plant Protection Act. But the Roundup-ready bluegrass was made with a so-called gene gun. No bacteria were involved, and the law’s fine print was satisfied.

“By all definitions of genetic engineering, that’s genetic engineering. But it totally escapes the U.S. regulatory framework,” Ellstrand said.

According to Scotts Miracle-Gro spokesman Lance Latham, the USDA’s decision “allows us to move forward with field tests. It’s a first step. It’s our hope that testing will continue our advancement to develop grass seed that is even more sustainable.”

*Image: [Anne Homyak/Flickr](#)*