

Our Reckless Chemical Dependence

By Julia Olmstead, Prairie Writers Circle. Posted August 27, 2005.

Telling people to wash their faces with DDT would be like the insult "go jump off a cliff." We all know the chemical is extremely hazardous both to humans and wildlife. But it is said that 50 years ago, in the agronomy department of my university, some faculty argued the pesticide was indeed that safe. In the same way, a fellow student in my plant breeding graduate program hurled an unintended insult last fall when he said Roundup, one of the most commonly applied weed killers in the world, was safe enough for me to drink a glass daily. I was seven months pregnant at the time. In the past few months, two published studies showed Monsanto's herbicide kills some amphibians and might cause reproductive problems in humans.

Since its introduction in 1974, Roundup and its active ingredient, glyphosate, often have been touted as harmless to human and ecological health. Glyphosate, most often sold under the Roundup commercial name, is now the second most commonly applied herbicide in the United States. Nearly 113 million pounds of it is used annually on farms, in parks and around homes, the Environmental Protection Agency reports. From 1990 to 2000, its use increased tenfold because of Monsanto's introduction of Roundup Ready crops: corn, soybeans and cotton genetically engineered for glyphosate resistance.

Proponents say that Roundup Ready crops reduce the need for nastier herbicides. Farmers can spray their fields, kill everything but their resistant crops and not worry about causing any harm to themselves, their children or wildlife. Roundup might be less acutely toxic than other herbicides, but safer isn't the same thing as safe. A study published in June by Environmental Health Perspectives, a journal of the National Institute of Environmental Health Sciences, showed that Roundup killed human placenta cells in lab culture at one-tenth its concentration for field use. At concentrations one-hundredth of intended use, the herbicide inhibited an enzyme crucial to sex hormone regulation.

And an April paper in Ecological Applications showed that Roundup, when applied at label-recommended concentrations, was "highly lethal" to amphibians, wiping out tadpoles of two species and nearly killing off a third.

Monsanto insists that the herbicide's chemical properties make it unlikely to leach from soils into groundwater or persist in surface water, a claim that might ease fears about the real-life ramifications of these papers. But several studies have detected significant concentrations of glyphosate in streams near farm fields, some up to four months after application.

Roundup's full potential to cause health problems for humans and wildlife populations is unknown. But these studies make its unbridled use and promotion as a "safe" choice terribly reckless. We don't understand enough about the effects of pesticides on human and ecological health to claim that any chemical is completely safe. Developing an agriculture that depends on large scale chemical application, like Roundup Ready crops, means we're playing a game whose outcome we cannot predict. Rather than seek out "less harmful" pesticides, we should be making an agriculture that cuts or ends our need for such chemicals. We should look to organic agriculture and to

farming techniques that use more natural systems of pest control. Crop rotations that incorporate greater diversity than just alternating between corn and soybeans are chemical-free ways to control weeds. And incorporating livestock into a farming system contributes chemical-free fertilization and can be a natural check on pests.

Our experience with DDT should have taught us long ago the fallacy of making assumptions about the safety of any agricultural chemical. And rather than spouting glib comments that discount the potential hazards of pesticides, we -- agricultural researchers, parents, consumers -- need to support safe alternatives through actions like buying organic food and promoting chemical-free farming and home landscaping.

We already have enough evidence on Roundup to be concerned about its effects on human and animal health. The time to take action is now, before the next round of studies comes out.

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