

Roadside spraying for wild parsnip

To: Lanark County Council
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My name is Linda Harvey, I am a family physician, now retired. I have postgraduate training in human neurochemistry, and my undergraduate degree is in field biology and ecology. I am coming at this issue from a wide base, and I want to share this with you.

It seems to me, perhaps you have noticed too, that, in terms of distribution, populations of parsnips are very dense indeed along the 417 from Ottawa, and along Hwy 7, and are thick but patchy along some of the more travelled side roads, and the farther you get from well travelled roads the sparser they tend to get. In Elphin, where I live, there are hardly any. (Be aware that parsnips are part of our native flora and are entitled to be there in numbers comparable to say, clover, chicory, black eyed Susan, Queen Anne's Lace etc.)

This plant is not marching stealthily cross-country under cover of night, (and against the prevailing winds), this plant is availing itself of something we humans are doing to spread and thrive. It is up to us to figure out what, and stop doing it. I have some ideas.

It might surprise you to know that this plant may actually be remediating the soil on our roadsides. Wild parsnip is not normally an invasive plant. If it is coming in in large numbers, there is probably a reason. Roadside ecosystems typically have a hard time just by virtue of being roadsides. They are subject to mowing, ploughing away of their snow-cover in winter, salt application, run-off containing oily material from cars, compaction by machinery, etc. All this damages not only the vegetation but the soils. Parsnip, with its long, fleshy taproot opens up compacted soil, draws up nutrients from below and stores them in its leaves and stems. When it dies, at the end of its second year, these are left behind as compost. Its large rosette of leaves covers and protects the soil, allowing beneficial insect and bacterial life to re-establish itself, improving soil structure and health. When this has gone on for long enough, and the soil is sufficiently restored, other plants will begin to move in and compete with the parsnips to reestablish the community that was lost.

Spraying will only retard and prolong this process. Mowing of seed stalks may cut down on local seed production, or it may just serve to spread the seeds via equipment, which seems to have happened in some places. Spot spraying in specific locations might work. Doing nothing is a cheap, easy and viable option in this circumstance. You should give this some very serious consideration. I know this is thinking outside the box for some of you, but I am making a request that you do it.

Now a look at another angle. Around 1900, cancer rates in N. America were approximately 4%. That's 4 cases in 100 people. Much of that was lung cancer in miners. Otherwise, cancer was a rare disease. Now, with our burgeoning stockpile of exposures, cancer rates are 42%- ten times what they were. Looking at it another way, out of every ten people with cancer, nine of them became sick because of exposures that we as a society chose to allow into our living space. These happened because of regulatory decisions, perhaps made under political pressure to allow substances into the market place. And because of thousands of small decisions, such as we are being asked to make right now, to actually use these products. I'm sure everyone in this room can name ten people, among your family, friends and acquaintances, who have or have had cancer. Perhaps you are a survivor yourself. What would it mean to you if nine of those people hadn't had to experience their illness?

This is about social responsibility.

Now let's take a look at ADHD, behavioural disorders and childhood autism. According to the 2012 Systematic Review of Pesticide Health Effects, put out by the Ontario College of Family Physicians, two major classes of pesticides, the DDT-like ones and the organophosphates are strongly implicated in childhood developmental problems. Problems, it should be noted, which frequently persist into adulthood and compromise that person's earning potential, productivity and general quality of life.

To quote the study: "...in 3-10 year olds, attention problems such as ADHD, reduced overall IQ, and other conditions including autism spectrum disorder and pervasive developmental disorder were more common in children who had higher levels of organophosphate or DDT/DDE exposure during pregnancy."

And: "The currently used organophosphate insecticides are consistently implicated in neurodevelopmental deficits" Note the phrase "currently used". This is a regulatory failure. We should not be currently using substances that damage our children.

Note also that these studies were done on children who have already been exposed and who are already compromised, sometimes for life.

It should have been possible to predict, as my biochemistry class in graduate school predicted, in the late 1970's, that exposing a developing fetus to a substance that severely disrupts the flow of messages from one part of the brain to another would alter forever the architecture of that young person's brain. Our regulators not only failed to predict this, they are failing to act now that the evidence is in.

I have taken the liberty of looking up both the product label information and the MSDS sheets of a number of the major organophosphates, including parathion, malathion, diazinon, dichlorvos and chlorpyrifos. That's five products and ten documents. Not one of them mentioned anything about fetal toxicity and developmental disruption from their product. So this information is not available, it seems, even to the serious user who reads carefully the material they have access to. Incidentally, there were several articles in my google search for the above by National Geographic and assorted Pesticide information services which did mention these things, so the information is out there, it's just not getting where it's needed.

So what does this have to do with Clearview? Clearview is relatively new. It has not had time to cause a raft of cancers, and handicapped children. We don't know what it will do. But we can make certain predictions.

The main ingredient in Clearview, aminopyralid, acts by jamming the plant's receptors for a type of plant growth hormone, the auxins. What's interesting is that the auxins, in their molecular structure and shape, bear a striking resemblance to serotonin, one of the major signal transmitters in the human brain, and a regulator of mood, appetite, gut function and a host of other important things in the human body.

It's not a stretch to predict that something that effectively disrupts the auxin receptor might also affect the serotonin receptor. If it does, and we miss this, we are consigning yet another generation of children, our children, our nieces and nephews and grandchildren, to a compromised life.

For the sake of a few parsnips.

Linda Harvey, B.Sc., M.Sc., M.D

