

# The Freshwater Connection

Publication of the Central Algoma Freshwater Coalition - Summer 2023

## Summer 2023 Pesticides in Ontario Glyphosate / Neonicotinoid



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In this issue we are looking at pesticide use in rural Central Algoma. We are not experts but some basic search of government and university articles has been a useful exercise and in the following pages you will see what we learned. We have included references if you wish to do more research on your own. Keep in mind more than 200+ pesticides are ban from use in Canada - for human health and environmental risks.

Pesticides use in Ontario is restricted under the Pesticides Act and Regulations.

Ontario also prohibits the use of certain pesticides for cosmetic (non-essential) purposes. Only low risk pesticides and biopesticides may be used for cosmetic purposes such as in lawns and gardens, and these are listed in the publication "List of Active Ingredients Authorized for Cosmetic Uses (Allowable List)".

<https://www.ontario.ca/page/using-pesticides-ontario#section-4>

In recent amendments to the pesticide regulations Ontario states that it believes its province-wide cosmetic pesticide ban (some exemptions - cemeteries, golf courses, sporting fields, agriculture, forestry, exterminators, research and scientific purposes) will prevent a patchwork of varied municipal bans.

<https://www.ontario.ca/page/using-pesticides-ontario>

Most of the current public discussion is on an approved herbicides - glyphosate and an insecticide - neonicotinoid - and we will focus on these two types of pesticides.

**Always refer to official documents - what appears here is a summary - this is not legal advice.**

## Pesticide Classes - Ontario

### **Manufacturing**

Class A The pesticide is only used to manufacture a pest control product.

### **Restricted**

Class B The pesticide is restricted by the federal government out of concern of environmental risk or human health. Additional information must be shown on the label regarding essential conditions for display, distribution and limitations on use. Specific qualifications may be required for a person to use this product.

### **Commercial**

Class C The pesticide can only be used by trained persons including certified farmers, licensed exterminators and permit holders.

### **Domestic**

Class D The pesticide is primarily used by the general public for personal use and in and around their homes.

### **Not a Federal Class**

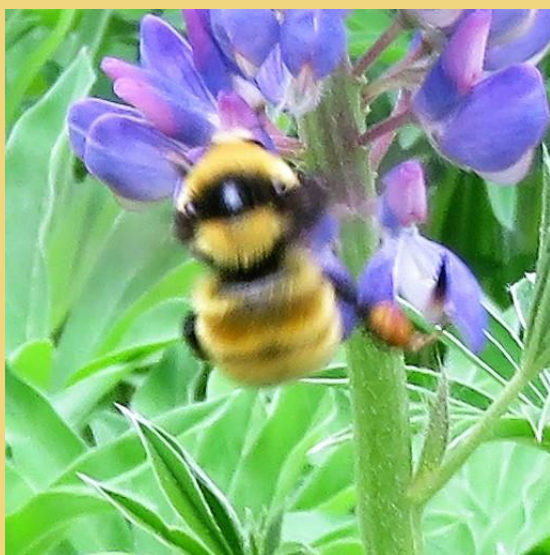
Class E Corn and soybean seeds that are treated with neonicotinoids are restricted for use by certified persons in Ontario.



## Neonicotinoids in Canada

“Neonicotinoids are a group of pesticides used in agriculture to protect crops from various insects. They are also used for other purposes, including killing insects in homes, and controlling fleas on pets. There are three main neonicotinoids currently approved for agricultural use in Canada: imidacloprid, clothianidin, and thiamethoxam.”

“Declines in honeybee and other pollinator populations have generated considerable scientific and public interest both in Canada and internationally. The available science suggests that multiple factors acting in combination may be at play, including loss of habitat and food sources, diseases, viruses and pests, and pesticide exposure.”



“Health Canada received large amounts of neonicotinoid water monitoring data from agricultural use areas across Canada. Most of the data was the result of cooperative efforts between provincial governments, grower groups, non-governmental organizations, registrants, and independent researchers. In addition, Agriculture and Agri-Food Canada facilitated a Multi-Stakeholder Forum to examine the use of neonicotinoids in agriculture.”

“To protect aquatic invertebrates, some uses of clothianidin and thiamethoxam were cancelled. Additional mitigation measures and restrictions were introduced for some of the uses that remain registered. The clothianidin and thiamethoxam aquatic invertebrate

special review decisions must be implemented by March 2023.”

“The health assessment did not identify human health concerns from any exposure route when used according to current label standards.”

“An environmental risk assessment showed that, in aquatic environments in Canada, imidacloprid was measured at levels harmful to aquatic invertebrates. These insects are an important part of the ecosystem, including as a food source for fish, birds and other animals. For the protection of the environment, Health Canada proposed to phase out all the agricultural and a majority of other outdoor uses of imidacloprid over three to five years.”

Source Health Canada - <https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/neonicotinoid-insecticides.html>

In Ontario - Bill 132 - said to “cut red tape” attempts to undo the previous plans for a moratorium on neonicotinoid pesticides.

## Glyphosate in Canada

“Glyphosate is the most widely used herbicide in Canada and plays an important weed management role in agriculture and non-agricultural land management. Products containing glyphosate are used to control weeds including invasive weeds, and toxic plants such as poison ivy.”

“Health Canada scientists conduct a thorough risk assessment to confirm that eating foods treated with a pesticide would not result in any human health concern to any segment of the population, including pregnant women, infants, children, and seniors. These scientists then establish Maximum Residue Limits (MRLs), which is the legal maximum allowable amount of pesticide residues that may remain in or on foods.

“Consistent with international approaches, Health Canada determines MRLs on raw agricultural commodities, and when necessary, for processed commodities. Both the raw agricultural and processed commodity are required to comply with the established MRLs.”

“Since Canadian MRLs are set well below levels that could pose a health concern, food with residues over the maximum limit may still be safe for consumption. When foods test at levels above the established limits, results are referred to Health Canada for a health risk assessment.”

“During this re-evaluation, Health Canada assessed the potential human health risk of glyphosate from drinking water, food, occupational and bystander exposure, as well as the environmental risk to non-target organisms. The dietary exposure assessment determined that the levels found in food would not be a health risk to Canadians.”

Source Health Canada - <https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/fact-sheets-other-resources/glyphosate.html>

Why the controversy?

Glyphosate is controversial because in 2015, The World Health Organization’s International Agency for Research on Cancer stated that glyphosate was “probably carcinogenic to humans”. Following the label instructions on all glyphosate products reduces risk.

A US court ruled glyphosate contributed to a former school ground’s keeper terminal cancer (non-Hodgkin lymphoma).

The Province of Quebec has streamlined occupation workplace claims for farmers related to long term exposure to glyphosate related to the development of Parkinson’s disease.

Glyphosate is used worldwide.

## Home - Cosmetic Pesticide Ban

The cosmetic use of pesticides is considered a non-essential use. Ontario bans the cosmetic use of pesticides to protect Ontarians from unnecessary risk by only allowing certain, low-risk pesticides for controlling weeds and pests on lawns and gardens.

Pesticides can only be used for cosmetic purposes if the use is permitted under an exception to the ban, or active ingredient in the pesticide is included on the Allowable List

### The Allowable List

A List of Active Ingredients Authorized for Cosmetic Uses (Allowable List) was created so you know what products you can and can't use. The Allowable List includes the active ingredients in pesticides that meet certain ministry criteria, are considered low-risk and are allowed for use Ontario.

Anyone can use these pesticides to control weeds and other pests on lawns, gardens, driveways and patios. The Allowable List includes more than 80 products and includes products such as borax, corn gluten meal, soap and sulphur.

You can also use pesticides not on the List to protect health or safety from pests such as wasps or mosquitoes, plants that are poisonous to humans by touch, such as poison ivy and giant hogweed, fleas or ticks that bite pets, indoor pests, rodents or pests that can cause structural damage to the home and rodents that may spread diseases. You need to be 18 years or older to purchase these products.

By law, you cannot use certain pesticides to kill weeds and insects on lawns, vegetable, and ornamental gardens, driveways, parks and schoolyards. You cannot use pesticides that contain certain ingredients, including: 2,4-D, Diazinon and glyphosate.

These pesticides are banned for cosmetic purposes because they may pose an unnecessary risk to human health, particularly children's health.

### Disposal

You should:

- never dispose pesticides in the garbage
- never pour pesticides down the drain or sewer
- use newspaper to wrap empty containers of pesticides - take to a facility near you that accepts household hazardous waste containers and items (e.g., batteries, propane tanks).

<https://www.ontario.ca/page/guide-pesticide-classes#section-5>

<https://www.ontario.ca/page/using-pesticides-ontario>

## Vegetable Crop Protection Guide

OMAFRA has a detailed publication - Publication 838 Vegetable Crop Protection Guide 2021

Determine your training and certification related to the Pesticides Act and Regulations.

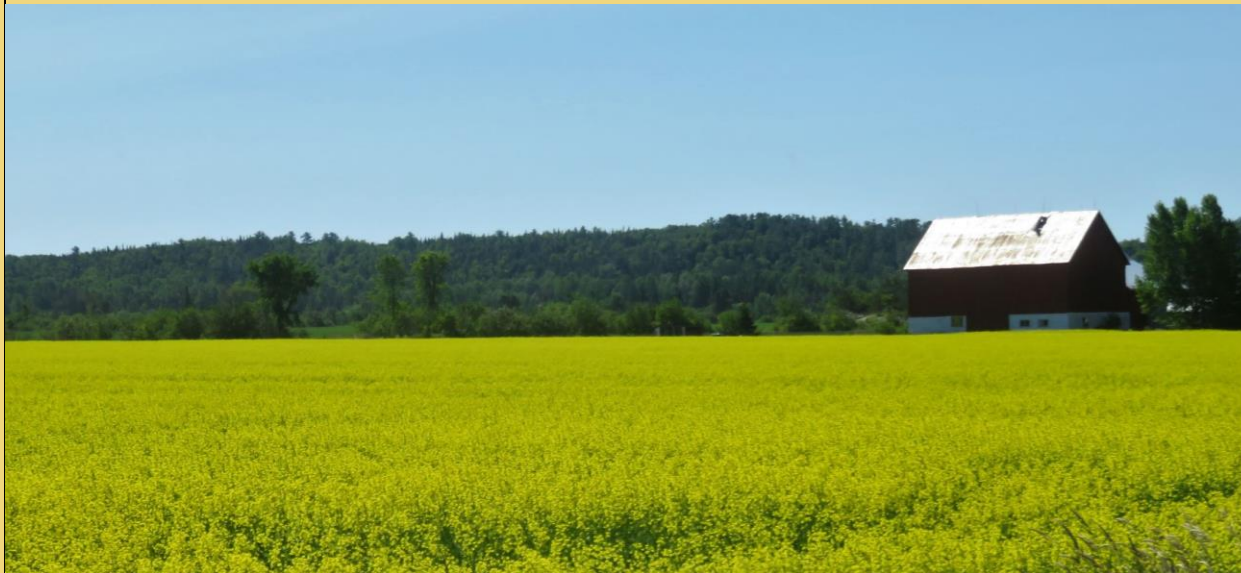
<http://www.omafra.gov.on.ca/english/crops/pub838/pub838.pdf>

### A Word About Organic Vegetable Growers

Several organic certification bodies serve Ontario farms. Pest management in organic production involves the use of numerous control strategies aimed at preventing problem pests (non-organic producers may use the same strategies). In organic operations pest control products should be considered a last resort however there are organic pest control products for use in organic production. For organic products active and additional ingredients must be derived from natural sources.



## Neonicotinoid Rules for Growers



What corn and soybean growers need to know about rules for neonicotinoid-treated seed (Class E pesticides).

Treated seeds are seeds that have been coated with a pesticide. In Ontario, Class E pesticides are corn and soybean seeds treated with neonicotinoid insecticides.

### Requirements for farmers

The requirements for farmers ensure that you will only use neonicotinoid-treated corn and soybean seeds when there is a demonstrated risk of a pest problem.

If you want to buy and use neonicotinoid-treated seeds, you will be required to: complete the integrated pest management (IPM) training, complete a pest risk assessment and a pest risk assessment report, sign a declaration called an **IPM Written Declaration Form** stating that you have considered IPM principles to decrease the risk of early season insect damage.

You need to provide these pieces of information, along with your IPM training certificate number, to the sales representative or seed vendor, including direct-to-farm seed vendors, from whom you purchase the seeds or to the custom seed treater used for treating seeds with neonicotinoids.

When using neonicotinoid-treated seeds, you are required to: only plant them on the farm property/properties identified in your pest risk assessment report, use them in accordance with the directions set out on the federal government's label or tag, maintain current records when you plant treated seed, and retain these records for at least two years.

There are no requirements for using non-treated seed or fungicide-only treated seed. Using non-neonicotinoid-treated seed can help protect pollinators and reduce the impact of neonicotinoids on the environment.

### Integrated pest management training

Integrated pest management (IPM) is an approach to managing pests that is environmentally and economically sustainable.

<https://www.ontario.ca/page/neonicotinoid-rules-growers>

## **Pesticide Research Must Stay Transparent and Independent**

Published: May 6, 2019 5:18pm EDT, Author Sébastien Sauvé, Professeur, Université de Montréal, This article is from: [www.theconversation.com](http://www.theconversation.com)

<https://theconversation.com/pesticide-research-must-stay-transparent-and-independent-112821>

Few people would make an important purchase on trust alone. The same logic applies to pesticides.

Getting the best scientific information about the safety of pesticides can be challenging. There is almost always some uncertainty in the science, making it sometimes difficult to navigate the research on pesticides.

I have been researching environmental contaminants for 25 years, focusing on situations where chemical products are found at above-normal concentrations in the environment, and trying to determine when they pose a real environmental threat.

### Unbiased study design

The design of a scientific experiment influences its results. The experiment can be engineered to demonstrate a chemical's positive effects or its environmental impact, depending on the desired outcome.

For example, if I did a small pilot study on a number of randomly selected farms, I could determine after my first season which sites showed the most (or the least) variation. The next year, when I do a more thorough study, if my sites are truly chosen at random, the results won't be misleading.

But if I have selectively chosen certain types of sites to obtain a clearer result, and not mentioned it, I will have introduced a sampling bias that may be very difficult to detect when others evaluate the quality of my research. The results may appear valid, but they will in fact have been manipulated to promote the desired results.

### Industry funding

When perusing the scientific literature on pesticides, it is difficult to screen out what has been designed objectively and what has been funded by industry with a potentially biased intent. The recent obligation of scientists to declare conflicts of interest has been essential to trust the results. Many of the available studies on pesticides are funded and designed by the companies that produce the chemicals. Companies that do a large number of studies may set aside the results of some studies, but widely distribute the results of others.

The pesticide industry is more inclined to fund researchers who produce results that are useful to them than those who raise the awareness of potential problems. Those who work on ways to reduce pesticide use or on the benefits of alternative agricultural approaches may find it harder to find funding and may even be in trouble from governmental agencies.

Worse still, some researchers working on the environmental impact of pesticides may face attacks by industry on their scientific credibility, ethics and even their personal lives. For example, Tyrone Hayes, a biologist at the University of California, Berkeley, experienced numerous setbacks. His work on the herbicide atrazine was challenged by Syngenta, the large agribusiness that makes the chemical and attempted to discredit him and invalidate his published work.

Unfortunately, given their inherent toxicity, they are never fully selective—all pesticides have the potential to harm plants, fish, insects and birds. Some affect predators, such as marine mammals, eagles and polar bears, and many are persistent organic pollutants.

The challenge for regulators is to figure out how much of the chemical will have a significant deleterious impact on significant individuals or organisms. The scientist can determine the number of species that will be affected and to what extent, but the level of acceptable impact is often a societal decision.



### Uncertainties in risk estimates

When a manufacturer markets a new pesticide, it must produce several risk assessment studies. Toxicological studies need to address a pesticide's effects on humans; ecotoxicological research shows its interactions with the environment. These studies determine maximum doses and threshold criteria to preserve environmental quality in drinking water, soils or aquatic life.

This exercise determines the highest possible concentrations that can be allowed without adverse effects on human health and the environment, and it must be done on the basis of quality scientific studies free from conflicts of interest.

This doesn't always happen. Reportedly objective research on glyphosate, the active ingredient in the herbicide Roundup, was secretly revised by agrochemical giant Monsanto.

If there's any doubt about the environmental or health risks associated with a chemical, regulatory agencies should use the precautionary principle to avoid causing irreparable damage. This approach, however, is often in conflict with the U.S. approach of not regulating a chemical until the damage is demonstrated and proven to prevent any legal challenge.

It's also important to understand that as scientists do more studies and explore more situations, they are more likely to find a species that is particularly sensitive to the pesticide or identify conditions that aggravate its toxicity. The criteria to protect health and the environment almost always evolve over time and the regulations become tighter.

This is why we see pesticides introduced and then banned years later. For example, a century ago, lead arsenate was used to control insects. When DDT (dichlorodiphenyltrichloroethane) was introduced in the 1940s, scientists expected it would be more efficient and without the risks associated with arsenic.

By the 1970s, however, DDT was banned in the United States, based on its harmful effects on wildlife – it killed eagles and falcons – and affected human health. The agriculture industry then switched to organophosphate pesticides. These did not have the same risks as DDT but were later found to have neurotoxic effects on children, even at low concentrations.

Today, we use neonicotinoids and glyphosate, currently the most widely used herbicide in the world. More than one-third of food samples tested by the Canadian Food Inspection Agency between 2015 and 2018 contained glyphosate residues.

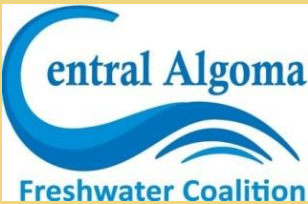
### Beware of dogmas

We must also be careful not to fall into a dogmatic approach that rejects the use of all synthetic chemicals. A distinction must be made between cases in which moderate and minimized pesticide use can be beneficial without causing significant impact on human health or the environment.

We must also listen to alternative agronomic approaches that reduce pesticide dependence. Impartial information should be provided to agricultural producers.

We should not expect stakeholders whose livelihood depends on the sale of pesticides to be objective on the debate between conventional pesticide-based agronomic approaches and novel approaches that might be economical and efficient but would lower sales of pesticides and their revenues.

## Become a Member



Your annual membership fee will provide a base budget for work of CAFC and demonstrate the commitment of local partners working towards a common goal. A strong diverse group is an essential component in meeting the goals of the Central Algoma Region. Support us at <https://www.centralalgomafreshwatercoalition.ca/>

