



Pesticides in Ontario 2013-2014

Surveys of farmers are conducted every five years in Ontario to understand the trends in pesticide usage across the province. In the last 30 years, Ontario farmers have reduced their pesticide use by 38 percent overall, and have drastically reduced their use of the most environmentally hazardous pesticides. The most recent survey was conducted in 2013 with results recently released.

Highlights of the recent survey are as follows:

- A dramatic reduction in insecticide use. Between 2008 and 2013, there has been a 64 percent reduction of organophosphate (25-70 EIQ) insecticide use and a 46 percent reduction of insecticide use overall.
- Year by year, farmers use less herbicides to grow more food; the survey measured a 68% reduction of active ingredient per bushel on field corn since 1983, a 64% reduction on soybeans (since 1983) and a 10% reduction on wheat (since 1998).

Pesticides are natural or synthetic substances used to control pests such as weeds, insects or diseases that are harmful to crops, animals or humans. They are expensive and can potentially be hazardous, so they are used sparingly and with great precautions by farmers. For most crops, Ontario farmers use an Integrated Pest Management (IPM) program, whereby they identify and monitor pests and use controls only when populations rise above a threshold that will cause significant yield and quality concerns.

Ontario farmers are continually learning how to better manage pests without the use of pesticides. They increase the diversity of their crop rotations, plant cover crop mixtures and create habitat for beneficial insects along field edges in order to increase the resiliency of the soil and plant ecosystems. Reducing pesticide use and selecting less hazardous products is better for a farmer's bottom line and also means less risk to the environment and farm workers.

Pesticide risk in Ontario is evaluated using the Environmental Impact Quotient (EIQ). This measures factors such as toxicity to people, impact on fish and wildlife, leaching potential, as well as its half-life in the soil for pesticide. A pesticide's EIQ is multiplied by its rate of use to determine its overall risk, or Environmental Impact (EI).

Over time, the average EIQ of the top ten most hazardous pesticides has decreased, from 54.5 in 1983 and 52.6 in 2003 to 44.3 in 2013. Farmers have shifted towards using safer products, as eight of the top ten most hazardous pesticides in 1983 (Van Eerd, 2016, EI Report) are no longer used in Ontario agriculture today.

The most used pesticide in Ontario agriculture today is glyphosate (a herbicide with a relatively low EIQ of 15.3). This chemical controls weeds and is commonly used as an alternative to tillage, as tillage is a primary contributor to soil degradation and erosion. In this way, the risk of glyphosate must be considered in light of the risk of topsoil loss and subsequent nutrient loading and eutrophication downstream.

Overall, trends in Ontario agricultural pesticides and usage are showing a positive improvement when it comes to risk. The agricultural industry has come a long way in its understanding of pesticides, risk and the environment and more is being done. The industry will continue to work towards creating healthy agricultural ecosystems that can provide food for our growing populations.

For more information, please contact the Agricultural Information Contact Centre (1-877-424-1300).

Funding for this survey was provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). For more information from the 2013-2014 pesticide study in Ontario, see www.farmfoodcareON.org/pesticides or call the Agricultural Information Contact Centre at 1-877-424-1300.

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