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Bee Careful! A precautionary approach to neonicitinoids

On April 29, the European Union suspended the use of three neonicitinoid insecticides – imidacloprid, clothianidin and thiamethoxam – on flowering crops for two years as of December 1, 2013, based on over 30 scientific studies that link them with bee decline. The ban may be extended if it has a positive impact on bee population.

In Canada, the Pest Management Regulatory Agency (PMRA) has initiated a re-evaluation of the same three products under section 16 of the *Pest Control Products Act* (PCPA), following a spike in reported bee deaths in 2012. The review will focus on their environmental risk, especially to pollinators, and will consider all agricultural uses of these insecticides including soil applications.

The decline in honey bees, wild bees, and pollinators in general has been documented in both North America and Europe since the mid-20th century, and has accelerated recently. Managed honeybees and leafcutter bees are indicator species; being part of the formal agricultural system, their populations are tracked more consistently than are wild species such as bumblebees, moths, wasps and hornets.

Approximately three-quarters of all plant species – including at least 90 agricultural crops – require insects, birds or bats for pollination. Healthy pollinator populations are necessary for food security and for ecosystem integrity. Habitat loss, introduced diseases and climate change are making it harder for pollinators to survive. When Bayer's imidacloprid came onto the market in 1991, followed by Syngenta's thiamethoxam in 1998 and Bayer's clothianidin in 2002, they made a bad situation worse. The chemicals are taken up by growing plants, and are thus present in all tissues including nectar and pollen. Now, neonicitinoids are estimated to comprise 20% of the world's total insecticide market.

Neonicitinoids are nicotine-like compounds that interfere with nerve function in insects, causing death by paralysis. While not directly toxic to vertebrates, the breakdown products from digestion do affect health. Birds can die or fail to reproduce as a result of eating as little as one corn seed treated with imidacloprid. Neonicitinoids are highly water-soluble, and are persistent in both soil and water when not exposed to light. They are highly toxic to aquatic insects, so can have a significant impact on flying insects that start life as larvae in surface waters, and consequently, can affect insect-eating bird populations as well. The persistence of these chemicals means that wildlife is chronically exposed in affected areas.

If bees are not killed outright from ingesting the insecticide, its neurological effect impairs their memory and navigation ability, as well as their ability to perform the waggle dance used to tell other bees about food sources. Over time, as bees consume contaminated pollen and nectar, impairment increases, leading to the death of individual bees and loss of whole hives due to breakdown of social organization.

According to the PMRA, in 2012 Ontario and Quebec beekeepers reported "symptoms consistent with pesticide exposure (twitching, unable to fly, extended proboscis)" and that "bees were foraging at the time of the incidents and that the strongest colonies were the most affected, having the largest number of dead and dying bees, which were often observed to have pollen on their legs." They also reported that colonies failed to recover, produced less honey, and had high queen mortality, poor egg laying and some drone mortality.

Imidacloprid, clothianidin and thiamethoxam are used mostly in corn, soybeans, canola, potatoes, vegetables, fruit, and cereals, but can be used for flea and fly control on animals as well. The insecticides are often sold in the form of pre-treated seed in combination with fungicides, which may increase insect toxicity due to synergistic effects. As much as 90% of the corn seed, 65% of soybean seed and 90% of

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union farmer newsletter

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canola seed sold in Canada is pre-treated with neonicitinoids. Pre-treatment packages tend to use the highest recommended application rate. Neonicitinoids are also sold for use as a foliar spray for use in addition to, or instead of, seed treatment.

In banning neonicitinoids, the European Union has taken a precautionary approach, which means public authorities act to prevent irreversible harm when it is within their power to do so, even without complete scientific certainty. Canada has also signed on to this principle through several international treaties, but tends to regulate from a risk-management/cost-benefit stance instead. The trouble with the risk-management approach is that those with the power to take the risks also accrue the benefits and are seldom the ones who suffer the consequences or pay the costs when problems occur.

The PMRA appears to be approaching neonicitinoids as a risk management matter. In its Re-evaluation Notice it says "Should evidence become available demonstrating reasonable grounds to believe that health or environmental risks of a pesticide are unacceptable, the PMRA will take appropriate regulatory action." In the interim, it has published best practices for the use of neonicitinoid-treated corn seed, such as reducing levels of contaminated dust, cutting or killing flowering plants next to fields, and not seeding during warm days when bees are flying. The benefits of pollinators and ecological biodiversity are difficult to measure and price, while the revenues from pesticide sales are measured quarterly. The deck may be stacked against bees in Canada, even though the precautionary approach advises "better safe than sorry."

Imidicloprid:

Admire	Merit
Concept	Stress Shield
Confidor	Nufarm Imidacloprid
Gaucho	Mana Imidacloprid
Genesis	Sombrero
Intercept	Grapple
Maxforce	Alias

Clothianidin:

Emesto	Prosper
Poncho	Titan

Thiamethoxam:

Actara	Helix
Cruiser	Optigard
Cruiser Maxx	Thiamethoxam
Endigo	Veridian
Flagship	Agita

For farmers who want to encourage pollinators, there is a program called *Bee Friendly Farming* that raises awareness and provides a certificate to farmers who provide bee habitat, diverse seasonal flowering plants, clean water and reduced pesticide use. For more, see NFU Local 316's *Food Down the Road* at http://fooddowntheroad.ca/content/introducing-bee-friendly-farming . —nfu—

To report a pesticide-related bee incident call Health Canada's Pest Management Regulatory Agency at 1-800-267-6315.

Turning off the lights in Canada

The Harper government is closing, cutting, defunding and privatizing the institutions, agencies and programs that allow Canadians to see the world – and each other – as well as to understand our world and communicate with each other, These actions are in effect "turning off the lights" that illuminate Canada: who we are and what our society looks like domestically, and who we are internationally.

The stated justification for these actions is cost-cutting, but resulting losses have so far been undetermined, and may in fact be beyond measurement. At the same time, spending on prisons is rising dramatically (in spite of the long-term decline in both the crime rate and severity of crime in Canada[i]), more than $100 million has been spent on Economic Action Plan advertising, and there are no records of how $3.1 billion allocated to anti-terrorism activities was spent.

Consider the irreplaceable knowledge that Canadians will be denied as a result of losing experienced people and their teams whose careers in public institutions have been abruptly terminated. Furthermore, the public no longer benefits from expertise of scientists and librarians still working, as they cannot speak without prior approval from by the PMO's communications machine.

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There are questions we should all think about: what will grow in the intellectual darkness created around us? Who will decide about and control what does grow? What happens to our understanding of ourselves as Canadians when we can no longer reference and confidently compare today's Canada – and tomorrow's – against decades of historical, public records? What stories will we tell each other about ourselves without robust public media, functioning museums and reliable census data? What will fill the gap, and who? What will young people learn in the future, and who will teach it? Who will benefit, and who will suffer from these changes? There are many questions, too few public discussions and even fewer answers.

The following table provides a snapshot of some of the Harper government's attacks on domestically and internationally valued institutions and programs.

PUBLIC INSTITUTIONS DISMANTLED	PROGRAMS ENDED	MAJOR CUTS*
Canadian Foundation for Climate and Atmospheric Sciences	Arctic Institute of North America's Kluane Research Station	Agriculture and Agri-Food Canada
Canadian Human Rights Commission	Beef Production Unit, Brandon Research Centre	Canadian Environmental Assessment Agency
Canadian International Development Agency	Canadian Council on Archives	Canadian Food Inspection Agency
Canadian Wheat Board	Centre for Offshore Oil & Gas Energy Research	Canadian Grain Commission
Cereal Research Centre	DFO Habitat Management	Canadian Institutes of Health Research
Experimental Lakes Area**	Federal specialized libraries, including Transport Canada, HRDC, Citizenship and Immigration, NRCan, Environment Canada and DFO.	CBC
First Nations Statistical Institute	Hazardous Materials Information Review Commission	Department of Fisheries and Oceans
Health Council of Canada	Kamloops Range Research Unit	Elections Canada
Indian Head Tree Nursery	Katimavik	Environment Canada
Institut Maurice-Lamontagne	Library and Archives Canada Interlibrary Loans Program	Library and Archives Canada
International Centre for Human Rights and Democratic Development	Long Form Census	Museums Assistance Program
Mersey Biodiversity Centre	Nappan Experimental Farm	The Museum of Civilization ***
National Aboriginal Health Organization	National Archival Development Program	National Research Council****
National Roundtable on Energy and the Environment	Ocean Contaminants & Marine Toxicology Program	Natural Sciences and Engineering Research Council
National Portrait Gallery	Smokestacks Emissions Monitoring Team	Public Health Agency of Canada
Office of the National Science Advisor to the Prime Minister	Species-at-Risk Program	Social Sciences and Humanities Research Council
PFRA Community Pastures	The Global Environmental Monitoring System	Statistics Canada
Polar Environmental Atmospheric Research Laboratory	The Research Tools and Instruments Grant Program	Status of Women Canada

* *This list does not include the hundreds of non-profit, non-government organizations involved in research and documentation that have gotten smaller or closed after having their federal funding eliminated.*

** *A third party has taken over the ELA with support from the Manitoba and Ontario provincial governments.*

*** *The Museum of Civilization has been given a new mandate and re-named The Canadian Museum of History.*

**** *The NRC's mandate has been changed to support only private-sector research.*

[i] *Measuring Crime in Canada: Introducing the Crime Severity Index and Improvements to the Uniform Crime Reporting Survey*, Statistics Canada. http://www.statcan.gc.ca/pub/85-004-x/85-004-x2009001-eng.htm

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The New Cereals Council of Canada – The Best Corporate Lobbying Your Check-off Dollars Can Buy

Now that the single desk Canadian Wheat Board has been dismantled and western farmers have the freedom to sell their wheat and barley to any multinational grain corporation they wish at the price the company dictates, it has become apparent that the CWB actually did more than just market grain. It was also very much involved in identifying and funding research priorities as well as advocating for policies and programs on behalf of prairie farmers. That gap has been discovered, and now must be filled.

You've probably heard about new provincial wheat and barley commissions that are at various stages of development. Some involved have suggested that once these commissions are up and running, the next step should be to set up a national council as an umbrella group, along the lines of the Canola Council of Canada. This would allow farmers' check-off dollars to be used to advocate for the interests of cereal growers at the federal and international levels.

But first things first. Manitoba and Saskatchewan are still trying to figure out how to structure their commissions – and might even allow farmers to approve them through a producer vote. It might surprise them to find out that the Cereals Council of Canada already exists, has members, a work plan and at least one employee.

Though not yet legally incorporated, it did register as an official federal lobbyist on January 31, 2012.The Cereals Council describes itself as a coalition formed to fill a 'gap in leadership.' Its principle representative is Jean-Marc Ruest, vice-president of corporate affairs for Richardson International, Canada's largest privately owned agribusiness.

The Council has hired consultant Judy Shaw as interim chair and to lobby on its behalf. Until April 2012 she was in charge of Corporate and Government Affairs at Syngenta Canada. She has also been involved in CropLife Canada, the lobby group for biotech and pesticide companies, where she served on various committees in the past twenty years, including its Intellectual Property Rights Task Force. She says that one of the Cereals Council's first priorities is variety registration "so we can attract those investment dollars to Canada."

On Valentines Day, Shaw met with Suzanne Vinet, Deputy Minister of Agriculture and Agri-Food Canada, and on April 10 she sat down with Senator JoAnne Buth, former president of the Canola Council of Canada. Both times she explained the formation of the Cereals Council and outlined its mandate and objectives. Perhaps her next meeting will be with farmers, where she will explain the Council's mandate and objectives, and how farmers will benefit.

—nfu—

Members of the Cereals Council of Canada:

Alberta Barley Commission
Alberta Oats, Rye and Triticale Association
Alberta Wheat Commission
Atlantic Grains Council
Barley Council of Canada
BASF
Bayer CropScience
Canadian Exporters
Canadian Seed Trade Association
Canadian Wheat Board
Canterra Seeds
Cargill Ltd.
CropLife Canada
Dow AgroSciences Canada Inc
Federation des producteurs de cultures commerciales du Quebec
FP Genetics
Grain Farmers of Ontario
Grain Growers of Canada
Keystone Agricultural Producers
Louis Dreyfus Canada
Monsanto Canada
Prairie Oat Growers Association
Richardson International Ltd.
Syngenta Canada
Viterra
Western Canadian Wheat Growers Association
Western Grain Elevator Association
Weyburn Inland Terminal