



CAPE
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Cosmetic Pesticides – Provincial Policies & Municipal Bylaws: Lessons Learned & Best Practices



August 2016

Title Page

Reference: Canadian Association of Physician for the Environment (CAPE) Cosmetic Pesticides – Provincial Policies & Municipal Bylaws: Lessons Learned & Best Practices. August 2016

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Acknowledgements: We would like to express our gratitude to CAPE's sister organization, the Canadian Health Environment Education and Research Foundation (**CHEER**), its individual donors, and the **Echo Foundation**, for the financial support that made it possible to produce this report.

Photo Credits: Ian Arnold, Toronto, for the photos on pages 43, 44, 47 and 49; Ben Beech for the photo on page 11; Kim Perrotta for the photo on page 13; and Thinkstock for the cover photo and the photos on pages 16, 22 and 32.

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Executive Summary

In 2001, the Supreme Court of Canada's decision regarding the Town of Hudson v Spraytech opened the door for municipalities across Canada to protect their citizens from the cosmetic use of pesticides. Since the decision, over 200 cosmetic pesticide ban¹ bylaws have been enacted across the country. The momentum provided by municipalities encouraged provinces to enact provincial pesticide bans.

Cosmetic Use of Pesticides: Use of a pest control product for non-essential or aesthetic purposes.

This report reviews and critiques cosmetic pesticide regulations and bylaws in Canada. Each level of government (federal, provincial/territorial, municipal) within Canada has powers related to pesticide regulation. The federal government has an important role deciding whether and how a pesticide can be used. However, this report focuses primarily on actions taken by the provinces and municipalities to regulate the cosmetic uses of pesticides. While provinces can regulate both the use *and* sale of pesticides, municipalities can only regulate their use.

For this report, cosmetic pesticide regulations from each province and a selection of 14 bylaws from municipalities across Canada were reviewed, and key informant interviews were conducted with nine people from several different provinces. The responses and literature sources recommended by the interviewees were used to inform the discussion portion of this report.

The reviewed laws were examined through several key topic lenses: structure and contents, strengths and weaknesses, implementation, efficacy, and recommended improvements.

Structure and Contents

Bans on the cosmetic uses of pesticides at both provincial and municipal levels ranged from broad to narrow scopes, both in terms of the pesticides and uses covered. Bans that are considered broad in scope prohibit the cosmetic use of pesticides on all landscaping elements (e.g. Ontario, Nova Scotia, Peterborough, and Montreal), while narrowly scoped bans tend to prohibit the cosmetic use of pesticides on lawns only (e.g. Manitoba, New Brunswick, and Calgary's draft bylaw).

Precautionary Principle: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

Practically all of the cosmetic pesticide laws reviewed contain exceptions for the cosmetic use of pesticides in certain situations. In many instances, the

¹ The phrase cosmetic pesticide "ban" is used throughout this report. This phrase was chosen to stay consistent with the language used by interviews and community partners. The legal instruments (statutes, regulations and bylaws), however, are not true bans because they permit the use of cosmetic pesticides for a number of exceptions.

exceptions allow the use of a pesticide to protect public health (e.g. destroying poison ivy, controlling stinging insects, purification of water). There are, however, a number of exceptions in both provincial laws and municipal bylaws that can potentially undermine the effectiveness of a ban. Among these are exceptions for **golf courses**, sports fields, infestations², integrated pest management³, and the management of public property.

The precautionary principle is a central feature in all of these laws. The Supreme Court stated in the *Town of Hudson v Spraytech* decision that inclusion of the precautionary principle fit into the goals of preventive action that cosmetic pesticide ban laws are attempting to achieve.

Several provincial regulations (e.g. Newfoundland, New Brunswick and Quebec⁴) use “black lists” to identify the pesticides or products that cannot be used. Three provinces—Ontario, Nova Scotia and Manitoba—provide a “white list” to identify the products that can be used. A white list identifies all of the pesticides that can be used for cosmetic purposes. Permitting the use of safe or least-toxic pesticides is a mechanism that embodies the precautionary approach to pesticide management.

Implementation and Evaluation of Cosmetic Pesticide Bans

Ideally, cosmetic pesticide bans are implemented through a phased-in approach that involves education initiatives, monitoring, and enforcement. Key informants highlighted the importance of communicating alternatives to the public and working with industry and commercial retailers to ensure that alternative products and public education resources are in place when a ban is implemented. Enforcement and monitoring were identified as important complements to educational campaigns. It was noted that enforcement must be used both to educate those who are ignorant about the law or alternatives, and to prosecute individuals or companies that intentionally and/or persistently use pesticides illegally.

A few studies have been conducted to evaluate the effectiveness of cosmetic pesticide laws. A national study that assessed a number of bylaws in Canada and abroad found that the least effective initiatives were voluntary programs which involved education and outreach programs alone (only 10-24% reduction in pesticide use was reported). An Ontario study, which examined water samples before and after the implementation of Ontario’s cosmetic pesticide ban, found significant reductions (between 80 and 83% reduction) in the number of water samples that contained several common active ingredients after the ban was implemented. Finally, the City of

² Infestations generally mean the presence of pests in numbers or under conditions which involve immediate or potential risk to human health or conditions which involve an immediate or potential risk of substantial loss or damage to property.

³ Integrated pest management generally refers to practices that are intended to promote the use of alternative pest management methods to control pests with the use of pesticides as a last resort.

⁴ Quebec does use a limited white list only for areas frequented by children.

Toronto, which undertook an extensive evaluation of its pesticide bylaw from 2003–2008, found that cosmetic pesticide use was reduced by 57% during this period.

Improving Cosmetic Pesticide Bans

Significant progress has been made in reducing cosmetic pesticide use and sales across Canada. Three provinces (Ontario, Nova Scotia and Quebec) have comprehensive laws and five provinces have partially protective laws. There are also 180 municipal cosmetic pesticide bylaws across Canada. However, there are still a number of jurisdictions (both municipal and provincial) that do not have cosmetic pesticide bans or which have very weak regulations (e.g. Alberta, British Columbia and Newfoundland). Weak cosmetic pesticide measures may restrict a small number of pesticides, and often only prohibit the cosmetic application of pesticides solely to lawns (i.e. use and sale of pesticides on garden plants, shrubs, or trees is still permitted).

Interviewees identified the need for the following improvements:

- the removal of exceptions for golf courses;
- employ a permitting and registry system to track and enforce permitted exceptions;
- on-going enforcement in jurisdictions where bans are in place;
- the use of annual random audits for retailers of pesticides; and
- addressing pesticide use in indoor environments.

Best Practices

The following approaches have been identified as best practices to follow when implementing a cosmetic pesticide ban:

- Combine a legal mechanism (provincial law/municipal bylaw) with extensive public education, monitoring and enforcement;
- Structured a ban around a white list that identifies acceptable and safe pesticides to use for cosmetic purposes;
- Ensure that the ban is sufficiently broad and covers all landscape elements;
- Tightly limit and define exceptions; and
- Ensure that provincial jurisdiction create strong cosmetic pesticide bans and allow municipalities to add additional layers of protection (through a bylaw) if the need exists within the local context.

Summary of Provincial Regulations Banning Cosmetic Pesticides

Jurisdiction	Date Passed	Pesticides Captured			Scope of Coverage			Exceptions
		White List	Pesticides Captured	Adding New	Coverage	Indoor Spaces	Sensitive Areas	
Newfoundland and Labrador	2011	No	carbaryl, 2,4-D, mecoprop, dicamba, MCPA.	No	Lawns	No	No	Golf courses , forestry activities, agriculture, sports turf, highly maintained turf.
Nova Scotia	2011	Yes	All pesticides not on the <i>List of Allowable Pesticides Regulations</i> .	Yes	Lawns, shrubs, trees, flowers, ornamental plants	No	No	Public health & safety, forestry activities, agriculture golf courses .
New Brunswick	2009	No	2,4-D	No	Lawns	No	No	Golf courses , agriculture
PEI	2010	No	2,4-D	No	Lawns	No	No	Golf courses , agriculture
Quebec	2003	Partial: for areas frequented by children	20 active ingredients in Schedule I of <i>Pesticide Management Code</i> .	No	Lawns	Yes (Limited to areas frequented by children)	Yes, child & daycare centres, home childcare pre-, primary & secondary schools	Golf courses , plant nurseries, seed orchards, agriculture lawns & land used for outdoor sporting activities only by persons older than 14 years, fenced in, or equipped with a watering system
Ontario	2008	Yes	All pesticides not included in class 11.	Yes	in, on or over land	No	No	Public health & safety, golf courses , specialty turfs, arboriculture, specified sports fields, scientific purposes, natural resources
Manitoba	2014	Yes	All herbicides that are not allowable herbicides.	Yes	Lawns	No	Yes, schools, hospitals, or child care centres	Public health & safety, golf courses , agriculture (including turf and sod farms), forestry, destroy noxious weeds, internationally used sports field, scientific purposes.
Saskatchewan	No provincial protection							
Alberta								
British Columbia								

S.1 – Purpose

The purpose of this pesticide policy review is to provide an up-to-date summary and analysis of the current laws and bylaws prohibiting or restricting the cosmetic use of pesticides in Canada⁵. Discussion and analysis of current laws and bylaws is based upon a targeted review of laws, several key informant interviews, and a limited review of the grey literature.

Cosmetic Use of a Pesticide: Use of a pest control product for a non-essential or aesthetic purpose.

S.2 - Methodology

Each provincial pesticide regulatory regime was examined using the following criteria: scope of the law, goals of the pesticides statute and/or regulations, number of pesticides captured, uses and/or applications exempted, and overall structure of the regulations.

Following a review of the provincial laws, seven interviews were conducted with nine key informants in March 2016. Interviewees were drawn from the public health and not-for-profit sectors from British Columbia, Alberta, Ontario, Manitoba, Quebec and Nova Scotia in order to achieve different regional perspectives and included the following people:

- Carol Mee and Rich Whate, Healthy Public Policy Directorate, Toronto Public Health (TPH). Both were involved in the development and implementation of the pesticides bylaw for the City of Toronto.
- Kim Jarvi, Senior Economist, Registered Nurses' Association of Ontario (RNAO). He was involved with cosmetic pesticide ban campaigns in municipalities throughout Ontario and with at the provincial level in Ontario.
- Dr. Warren Bell, MDCM CCFP FCFP, CAPE Board Member, British Columbia. He has been advocating for municipal and provincial cosmetic pesticide bans for two decades.
- Gideon Forman, former Executive Director, CAPE. He was involved in campaigns for pesticide bans in several provinces and municipalities across the country.
- Nadine Bachand, Project Coordinator, Collective choices, Agriculture and Pesticides, Équiterre. She has been working on pesticide issues in Quebec.
- Kaitlyn Mitchell, Staff Lawyer, Ecojustice. She was involved with the cosmetic pesticide regulations in Manitoba.

⁵ The phrase cosmetic pesticide “ban” is used throughout this report. This phrase was chosen to stay consistent with the language used by interviews and community partners. The legal instruments (statutes, regulations and bylaws), however, are not true bans because they permit the use of cosmetic pesticides for a number of exceptions.

- Christopher Benjamin, who is the former Coordinator of the Healthy Lawns Program for the Ecology Action Centre in Nova Scotia.
- Sheryl McCumsey, who is the coordinator for Pesticides Free Alberta.

Each interviewee was provided with questions prior to conducting the interview. Documents identified by interviewees as support for their answers were also reviewed, and provided additional information that has been incorporated into this report.

Fourteen pesticide bylaws were selected for review from municipalities within each province. At least one bylaw was selected from each province where a bylaw existed⁶. Where there were numerous municipal pesticide bylaws within a province, selection of bylaws was aided by an informed interviewee with knowledge of the region. Each municipal pesticide bylaw was reviewed for the scope of the by-law; the number of pesticides captured; the goals of the by-law; pesticides, uses, and/or applications exempted; and the overall structure of the bylaw.

Following completion of the data collection, this report was generated using the provincial and municipal laws, regulations, and bylaws; the data collected from each informed interviewee; and the documentation provided by the interviewees.

S.2.1 - Limitations

There are a number of limitations that must be taken into account when reading this report. As a project with a limited budget, only Canadian provinces and a small selection of Canadian municipalities were reviewed and examined. Additional sources from jurisdictions outside Canada would have provided different perspectives on pesticide regulation as well as providing a richer source of examples to draw on for analysis. A larger sample of Canadian bylaws could have been reviewed but the numbers reviewed were limited by the resources available for this project.

Because of resource constraints, there was a limit on the number of interviews that were conducted. Two public health professionals who had implemented a bylaw were interviewed, one lawyer from an environmental law firm, two people from health advocacy organizations, and two people from environmental organizations. This report is not intended to be an impartial review on the topic. Rather it is a review of cosmetic pesticide laws across the country from the perspective of those who believe that cosmetic pesticide bans are needed to prevent unnecessary use and exposures to hazardous pesticides used for cosmetic purposes. With seven interviews, there was consistency in the answers given for many of the questions; however, there were also different answers with new ideas with each interviewee. Additionally, it would have

⁶ There is one bylaw in one Newfoundland and Labrador Municipality – Glenburnie-Birchy-Head-Shoal Brook; however, it was not available online.

been helpful to have more interviewees from the public sector (i.e. municipalities or provincial government agencies) had time and resources allowed for it.

S.3 – Review of Cosmetic Pesticide Laws in Canada

This report does not assess the health evidence associated with cosmetic pesticides. It is based on the view that cosmetic pesticides present serious health risks, particularly for vulnerable populations, while not providing benefits that are essential. Below we have provided a high level summary of the findings from three systematic reviews that were directed at the health risks associated with pesticides.

S.3.1 – Public Health Concerns with Cosmetic Pesticides

In 2002, Toronto Public Health (TPH) reviewed 300 studies from peer-reviewed scientific journals. These studies were epidemiological studies directed at people exposed to pesticides through their work or in their homes. The authors found that studies directed at occupationally exposed workers suggested that pesticides can moderately increase the risks for some cancers, some reproductive effects, and some neurological effects. They also found that a limited number of studies directed at children suggest that pesticides can moderately increase the risks of some cancers (leukemia, non-Hodgkin's lymphoma, and neuroblastoma) and some birth defects in children who are exposed around conception, in utero, and in early postnatal life (TPH, 2002).



Another systematic review, published in 2007, examined 83 health studies directed at pesticide exposures and cancer health effects that were published between 1992 and 2003. Studies directed at organochlorine pesticides were excluded from the review because these pesticides are no longer used in Canada. The authors found that the “preponderance of evidence” indicated a positive relationship between exposure to pesticides and the development of some cancers, particularly brain, prostate, and kidney cancers, as well as non-hodgkin's lymphoma and leukemia. They also noted that a number of studies directed at children found an increased risk of cancer associated with critical periods of exposure, both prenatal and post-natal, and with parental exposure to pesticides at work (Bassil et al., 2007). The authors concluded that there was sufficient evidence to recommend that patients reduce their use of pesticides.

In 2012, researchers working in collaboration with the Ontario College of Family Physicians (OCFP) conducted a systematic review of the health studies published on the non-cancer health effects of pesticides after 2003. This study identified and reviewed 142 high-quality studies. Organochlorine pesticides were excluded from this study as well.

The authors found evidence that pesticides may cause deleterious reproductive outcomes, mostly for low birth weights which are associated with greater risks of death, disease, and disability in infancy and childhood and long-term adverse health outcomes in adult life. They also found that prenatal pesticide exposures were consistently associated with measurable deficits in the neurodevelopment of children across a wide range of ages, from birth to adolescence. The authors noted that while the increased risks of these childhood deficits are very small, small increases in the incidence of these types of childhood conditions can have a substantial impact on the healthcare system and on the learning and earning potential of the affected individuals.

The review found evidence that exposure to pesticides, and to organophosphate or carbamate insecticides in particular, is associated with the development of respiratory symptoms and a spectrum of obstructive and restrictive lung diseases. Studies of asthma in children reported an association between maternal exposure to organophosphate and organochlorine insecticides, while respiratory tract infections in infants were linked to maternal exposure to organochlorine insecticides in two of three reviewed studies. This association was found for occupational, domestic, and environmental exposures, particularly after exposure to the organophosphate insecticides parathion and coumaphos. While the possibility remains that these results could reflect the aggravation of pre-existing asthma, asthma-related respiratory problems are nonetheless associated with pesticide exposure.

In children, the evidence is consistent: in utero and post-natal exposures in the first year of life were associated with asthma and wheeze up to six years of age. Breastfeeding was shown to have a protective effect, despite increased organochlorine pesticide levels in the infants.

The authors concluded that the findings suggest the need to

- minimize pesticide exposures among pregnant women and children from all potential sources, including dietary, indoor and outdoor air, water, and farm and domestic use exposures; and
- reduce or eliminate exposure to all pesticide types, and to organophosphate, carbamate, and organochlorine insecticides in particular, in both occupational and domestic settings.

The authors noted that previous bans on pesticides with high health effect burdens have been shown to reduce health risks to children and reduce detection frequency in children and the environment (OCFP, 2012).

S.3.2 - Pesticide Regulation in Canada

In Canada, there are three tiers of pesticide regulation: federal, provincial, and municipal. This paper will focus solely on provincial and municipal regulation; however, understanding the role and potential affect the federal government can have on pesticide regulation is important. The federal government essentially functions as a gate keeper for pesticide use in Canada. If a pesticide is not registered for use in Canada, then there is little or no need to regulate the use of that pesticide at any other level of government.



3.2.1 – Federal Regulation of Pesticides

The Pest Management Regulatory Agency (**PMRA**) is a branch of Health Canada. The PMRA is responsible for regulating pest control products at the federal level. Under the authority of the *Pest Control Products Act (PCPA)*, the PMRA registers pest control products⁷ for use in Canada under the mandate of preventing unacceptable risks to health and the environment from the use of pest control products (*PCPA*, ss 4(1)). Generally, unless a pest control product is registered in Canada, no person is permitted to manufacture, possess, handle, store, transport, import, distribute, or use a pest control product (*PCPA*, ss 6(1)). When a pest control product is registered, it may be used in Canada as long as its use is not contrary to the regulations under the *PCPA* or the directions on the label (*PCPA*, ss 6(3)).

Concerns with Federal Regulation of Pesticides

A number of procedural concerns have been raised about the federal pesticide approvals process. In 2015, the Commissioner of the Environment and Sustainable Development audited the PMRA to determine if the PMRA managed its mandate in accordance with the *Pest Control Products Act* to prevent unacceptable risks to the health of Canadians and the environment. The Commissioner documented a number of the concerns in the 2015 report. For example, she documented that the PMRA continues to make heavy use of ‘conditional registrations’ that allow companies to put their pesticides on the market before they have submitted all of the data and

⁷ According to the *PCPA*, a pest control product is: a product, an organism or a substance, including a product, an organism or a substance derived through biotechnology, that consists of its active ingredient, formulants and contaminants, and that is manufactured, represented, distributed or used as a means for directly or indirectly controlling, destroying, attracting or repelling a pest or for mitigating or preventing its injurious, noxious or troublesome effects

studies needed by the PMRA to assess the safety of their products. The PMRA is supposed to be reviewing the evidence submitted by companies to ensure that their products do not “present an unacceptable risk to human health or the environment”. The Commissioner found that 80 of the 7,000 pest control products on the market today have been conditionally registered; 29 for more than 5 years and nine for more than 10 years (Auditor General, 2015).

The Commissioner’s report also found that the PMRA:

- Has been moving too slowly when re-evaluating pesticides that have been on the market for more than 15 years—for example, the re-evaluation for chlorpyrifos has not yet been completed even though it was first registered in 1969 and has been found to be acutely toxic to a number of mammals, fish, birds, invertebrates and honey bees;
- Has not been assessing the cumulative health effects of pesticides in all of the situations where it should have been required;
- Has not applied the 10-fold safety factor required to protect children and infants from pesticides in most situations where it should have been applied;
- Has not been conducting special reviews promptly for pesticides banned by countries that are members of the Organisation for Economic Co-operation and Development; and
- Has not moved quickly to cancel registrations for some pesticides when reviews demonstrate that they do pose “unacceptable risks” (Auditor General, 2015).

There are also a number of scientific concerns with the federal pesticides approvals process. For example, the process relies heavily on animal studies conducted by manufacturers that do not always reflect the impacts that can occur among humans. The tests are conducted on active ingredients in a pesticide product in isolation from other chemicals in the product so they do not reflect the impacts of all of the chemical ingredients combined. The tests do not address the cumulative effects that can occur as a result of multiple exposures from many different sources at different stages in life. Nor do they capture endocrine disruptors that can produce adverse health effects by disrupting the hormone systems that regulate growth and development (TPH, 2002; PCN).

These procedural and scientific concerns are crucial to the overall pesticides regulatory process in Canada but are beyond the scope of this report.

3.2.2 – Provincial Regulation of Pesticides

At the provincial level of government, pesticide management provides for licensing and permit schemes governing the sale, use, storage, and disposal of registered pesticides. Sectors that are commonly covered include agriculture, commercial extermination, and forestry management. While the method of regulation varies slightly from province to province, the regimes generally

employ methods for classifying pesticides into categories, licensing and training for pesticide applicators, permit issuance schemes, and enforcement provisions (Benidickson, 2009). As will be discussed next, a province also affects pesticide regulation through the legislation that relates to the creation and function of municipalities.

3.2.3 – Municipal Regulation of Pesticides

Municipalities are legal entities created by provincial legislation, and they receive their powers from provincial legislation. A municipality's power to regulate pesticide usage through a bylaw was challenged at the Supreme Court of Canada in *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*. The Supreme Court upheld the bylaw because the regulation of pesticides fit into the power of a municipality "to secure peace, order, good government, health and general welfare in the territory of the municipality" (*Spraytech v Hudson*, 2001). Basically, a municipality can regulate pesticide usage because municipalities have the power, in good faith, to protect the health of their inhabitants.

There is an important distinction to make between provincial and municipal legislation and that is the ability to regulate *usage* versus *usage* and *sale*. While provincial regulation is arguably more effective because it can regulate the sale of pesticides within its territory, municipal regulation is still important—especially in municipalities that are within provinces that currently have no pesticide ban legislation.

S.3.3 - Provincial laws

In 2003, Quebec adopted its *Pest Management Code* to become the first province in Canada to prohibit the sale and use of cosmetic pesticides on its territory. Since that time, a number of other provinces have followed in the steps of Quebec and have incorporated cosmetic pesticide prohibitions within their pesticide regulatory regimes (e.g. Ontario, Nova Scotia and Manitoba). This section will examine each province's pesticide regulatory regime with a focus on the cosmetic or non-essential use mechanisms.

S.3.3.1 - Ontario

In June 2008, the province of Ontario's cosmetic pesticide ban was passed and took effect in April of 2009. Ontario is widely considered to have the strongest provincial cosmetic pesticide ban. Prior to the ban, many Ontario municipalities passed their own pesticide bylaws; however, when the provincial ban came into effect, it rendered all Ontario municipal bylaws related to cosmetic pesticides inoperative (Ontario Pesticides Act, s 7.1(5)).

Scope/Goal

Ontario's cosmetic pesticide ban prohibits the use and sale of cosmetic pesticides or non-essential pesticides. The purpose for banning these pest control products is that "they may pose an unnecessary risk to human health, particularly children's health" (MoECC, 2016). The legal source of the cosmetic pesticide ban is located within the *Pesticides Act*⁸. Specifically, subsection 7.1(1) of the *Pesticides Act* prohibits persons from using prescribed



pesticides (that is, pesticides that have been specially designated in another legal instrument, such as a regulation) in, on, or over land⁹ unless the use is for one of the exceptions listed under subsection 7.1(2): **golf courses**, agriculture, forestry, and public health and safety. These exceptions will be discussed in more detail below. Sale of a prescribed pesticide is prohibited under subsection 7.1(4).

Pesticides Captured

Cosmetic pesticides are prescribed in Ontario Regulation 63/09 (OReg 63/09) under section 16 of the regulation. Therefore, when combined with the *Pesticide Act* provisions above, their use and sale is prohibited in Ontario. Cosmetic pesticides are prescribed in the regulation by a system that categorizes (federally) registered pesticides into 11 different classes. The method of classification is further detailed in the guideline document called the *Pesticide Classification Guideline for Ontario* (OReg 53/09, s 4(5)). This section will briefly explain how classification works for 3 of the 11 most important classes related to cosmetic pesticides: Classes 7, 9 and 11.

Through the classification processes, cosmetic pesticides have been designated as **class 9** pesticides. This means that any pesticide product that has a cosmetic purpose will have the ingredient in the product listed as a class 9 pesticide (MoECC, 2012).

Some cosmetic pesticides may be classified as a dual-use or "mixed-use" pesticide. This means that a pesticide product has a pesticide ingredient that has a cosmetic use (i.e. a class 9 pesticide), But it can be used for either an exception (such as the public health and safety exception to kill poison ivy) or for a purpose that extends beyond the scope of the act (such as an indoor use).

⁸ The *Pesticide Act* was amended by the *Cosmetic Pesticide Ban Act* in 2008 to incorporate provisions related to cosmetic pesticides.

⁹ "Land" means surface land not enclosed in a building or structure, land covered by water and all subsoil, or any combination or part thereof

Under OReg 63/09 and the Guidelines, these dual-use pesticide products are put into the category of class 7 pesticides. **Class 7** pesticides have a sales restriction on them. Therefore, vendors must make these products inaccessible to the public and vendors must provide the purchaser with information about the product—including that any cosmetic use of the pesticide product is illegal (MoECC, 2012).

According to the OReg 63/09 and the Guideline, **class 11** pesticides are the only ingredients in pesticides that are legally permitted to be used for cosmetic purposes (MoECC, 2012). In order to be added as a class 11 pesticide, the pesticide must meet the criteria of a category I pesticide, which means one out of the two additional criteria must be met:

1. the pesticide product must be listed as a “biopesticide” by the PMRA; or
2. the product must be determined to be a “lower-risk” pesticide (MoECC, 2012).

Lower risk pesticides can include one or several of the following characteristics set by the PMRA:

- they have a non-toxic mode of action;
- they are of low toxicity to organisms the product is not targeting;
- they do not persist in the environment;
- the product is used in ways that do not cause significant exposure—for example, the product is premixed or it is applied in a closed system, reducing human and environmental exposure; and
- they have been widely available to the public for other uses for some time (MoECC, 2012).

Based on this system, if a pesticide manufacturer wants to sell its product as a cosmetic pesticide, the manufacturer has the burden of showing that its pest control product meets the low-risk criteria posed by the Ontario Government.

To date, there are 120 pesticide active ingredients that are listed as class 9 cosmetic pesticides (MoECC, 2015)¹⁰, 119 products that are listed as class 7 restricted sales pesticides (MoECC, 2016^a), and 69 class 11 pesticide active ingredients classified as either a biopesticide or a low-risk pesticide (MoECC, 2015^a).

Exceptions

As stated above, any pesticide products that contain class 9 ingredients (or cosmetic pesticides) are prohibited from being used or sold in Ontario, unless their use is authorized by one of the

¹⁰ For a complete list of the ingredients, refer to the website.

exceptions. OReg 63/09 details all the exceptions that are permitted and the requirements that must be followed when using a prohibited pesticide under an exception.

Golf course operators are permitted to use pesticides under the *Pesticides Act*; however, owners or operators of a golf course must be accredited by an approved integrated pest management body (OReg 63/09, s 18). They must also prepare an annual report following the guidelines outlined in OReg 63/09. The report must include how much of each pesticide the golf course uses annually, where and why the pesticides are used, an explanation for discrepancies that appear (e.g. a large increase in the amount of a pesticide used over the course of a year compared to the previous year), and what the golf course is doing to reduce the amount of pesticides used¹¹. These reports must be made available and presented to the public (OReg 63/09, s 20). There are no requirements for Ontario golf courses to reach usage targets or to phase out pesticide use.

The exception for public health and safety is a broad category that covers three distinct areas, including:

- a) the destruction, prevention or control of animals that bite, sting, are venomous or carry disease, including wasps, mosquitoes and ticks;
- b) the destruction, prevention or control of plants that are poisonous to humans by touch; or
- c) the destruction, prevention or control of plants, fungi or animals that affect public works and other buildings and structures, including carpenter ants and termites (OReg 63/09, s 17)¹².

Ontario's Pesticide Regulation provides several other exceptions to using a prohibited pesticide: Specialty Turf (which requires an annual report), arboriculture¹³, specified sports fields, scientific purposes, and natural resources (OReg 63/09 s 26-33).

S.3.3.2 - Nova Scotia

Scope and Purpose

In April 2011, the Nova Scotia Government passed its *Non-Essential Pesticides Control Act* and the following year, the act came into force. According to the Government of Nova Scotia, the legislation in concert with the regulations will help Nova Scotians avoid exposure to unnecessary

¹¹ For a complete list of report requirements, see O Reg 63/09, ss 19(4). To view annual reports, see IPM Council of Canada, online: <http://www.ipmcouncilcanada.org/epar/en-CA/Default/courses.aspx>.

¹² Of note, annual reports similar to golf course annual reports must be produced by owners or operators of public works if a prohibited pesticide is used under the exception.

¹³ An opinion must be obtained by a certified specialist to validate the need to use a prohibited pesticide to maintain the health of a tree.

chemicals (NS, 2015). This appears to be a strong signal that the goal is to protect the public's health from cosmetic pesticide exposure.

Nova Scotia's cosmetic prohibitions extend to the use and sale of cosmetic pesticides. Sections 4 and 5 detail the specific terms of the prohibitions. Subsections 4(1) and 4(2) state that no pesticides may be used on or over lawns¹⁴ or in, on, or over trees, shrubs, flowers, or ornamental plants. Subsections 5(1) and 5(2) address prohibitions on the sale of pesticide products. The ban applies to residential, commercial, government, and institutional properties including hospitals, long-term care facilities, schools, parks, and recreational infrastructures (DSF and Équiterre, 2011). Use or sale of a prohibited pesticide may be permitted if the use falls under one of the prescribed exceptions detailed in the *Exceptions to Prohibitions on Nonessential Pesticides Regulations*.

Pesticides Captured

The only pesticides that may be used or sold for use on any of these areas are prescribed in the *List of Allowable Pesticides Regulations*¹⁵. Currently, this list includes 44 pesticides that are permitted to be used on lawns, shrubs, flowers, trees, and ornamental plants. The list was initially developed based on Ontario's list of class 11 legally permitted pesticides. Additions were made to the list based on the Canadian General Standards Board's *Organic Production Systems Permitted Substances List* (NS, 2014).

Exceptions

In Nova Scotia's *Exceptions to Prohibitions on Non-Essential Pesticides Regulations*, there are several exceptions for allowing a person to use a prohibited pesticide. Additionally, the Act does not apply to forestry activities, agriculture, or **golf courses**. Subsection 3(2) of the Exception Regulation contains a broad exception which was modeled on Ontario's regulation. The exception permits an individual to use a prohibited pesticide used for lawns to destroy, prevent, or control

- a) animals that bite, sting, or carry disease (e.g. wasps);
- b) fungi or animals that pose a threat to a building or structure; or
- c) an alien invasive species other than plants that poses a risk to human health, the environment, or the economy (NS Reg 184/2010).

Subsection 3(3) provides for a narrower exception that allows for the use of a pesticide containing glyphosate used for lawns to destroy, prevent, or control

¹⁴ Under the Nova Scotia's *Non-Essential Pesticides Control Act*, "lawn" means a plot of grass that is maintained at a regular and approximately uniform height through periodic and regular mowing, other than as the result of agricultural activities, and includes any associated walkway.

¹⁵ The number of pesticides that are prohibited for cosmetic use could not be found through internet searches.

- a) a plant species poisonous to humans by touch (e.g. poison ivy);
- b) a plant species that poses a risk to a building or structure; or
- c) an invasive alien plant species that poses a risk to human health, the environment, or the economy (NS Reg 184/2010).

Subsections 5(2) and 5(3) of the regulation permit the exact same exceptions, except that the pesticides are used for shrubs, trees, flowers, and other ornamental plants.

The Exception Regulation also places conditions on vendors who sell restricted pesticides for designated uses under the regulation. The vendor must be certified to sell the pesticides and they must provide information on the pesticide and the law to the purchaser. The vendor must also ensure that these restricted pesticides are not freely available in the retail establishment (NS Reg 184/2010, s 4 and 6).

S.3.3.3 - Quebec

The Quebec *Pesticides Management Code* (the Code) was the first provincial law to ban the use of cosmetic pesticides. Implementation of the Code was phased in over 4 years and in April of 2006, the Code came into full effect (DSF and Équiterre, 2011).

Purpose and Scope

The purpose of the Code is to “regulate and control [pesticide related activities]¹⁶ so as to prevent or mitigate harmful effects on the health of humans and other living species, as well as damage to the environment or to property” (*Pesticide Act*, s 11). This purpose has a strong connection to prohibiting cosmetic pesticide application within the province.

The *Pesticide Management Code*’s prohibitions on the sale and use of cosmetic pesticides are found within Chapters III and IV of the Code. Article 31 of the Code (under chapter IV) restricts pesticide use on lawns and further identifies the areas where the prohibition to apply Schedule I pesticides of lawns applies: land owned by the State; municipal property; land owned by college and university institutions; any land owned by health and social services; and land where sports, recreational, or cultural activities take place for children 14 years or younger (*Pesticide Management Code*, art 31). The Code also identifies child and youth establishments where only biopesticides are permitted to be used—both inside and out of the establishments. These places include childcare and daycare centres, home childcare residences, pre-schools, and primary and secondary schools (*Pesticide Management Code*, art 32)¹⁷.

¹⁶ the distribution, sale, storage, transportation or use of any pesticide, pesticide container or equipment used for any such activities.

¹⁷ Application of pesticides can only take place when the establishment is inactive and must take place at least 8 hours before the establishment becomes active again.

Article 25 of the Code prohibits the sale of class 4 and class 5 pesticides¹⁸ that contain an active ingredient listed in schedule I that are intended to be used on lawns. Retailers must ensure that these pesticides are not freely accessible to customers (*Pesticide Management Code*, art 25).

Pesticides Captured

Quebec uses a different mechanism than Ontario and Nova Scotia to identify pesticides captured by sale and use prohibitions. Pesticides prohibited for use in Quebec are identified by the active ingredient in a product, which is listed in Schedule I of the Code. Currently the Code prohibits 20 active ingredients for use. These 20 active ingredients were selected based on their classification as carcinogens, including probable and possible carcinogens (DSF and Équiterre, 2011). This prohibits the sale of approximately 200 products containing the ingredients in schedule I (DSF and Équiterre, 2011). Retailers must also make prohibited products inaccessible to the general public. There is no mandatory requirement to update Schedule I and add new ingredients. Therefore, new federally registered pesticides must be added to the schedule through an amendment to the Code. Since the implementation of the Code, no additional active ingredients have been added.

Schedule II of the Code provides a list of biopesticides and active ingredients considered least likely to have toxic effects that are permitted to be applied in or around child and youth establishments. Currently, there are 14 active ingredients in the schedule.

Exceptions

The Code does not affect **golf courses**; however, reduction plans must be submitted by **golf courses** every three years (*Pesticide Management Code*, s 73). The code also permits pesticide application in plant nurseries; seed orchards; or on lawns and land that is used only for outdoor sporting activities by persons older than 14 years of age, fenced in, or equipped with a watering system (*Pesticide Management Code*, ss 31(5)).

S.3.3.4 - Manitoba

The province of Manitoba is the most recent province to pass legislation banning the use of pesticides for cosmetic or non-essential purposes. The prohibitions took effect in December 2014; however, the Government instituted a one-year grace period to allow residents and businesses to adapt to the new legislation¹⁹.

¹⁸ Domestic products are classified as class 4 and 5 pesticides under section 6 and 7 of the *Regulation Respecting Permits and Certificates for the sale and use of Pesticides*

¹⁹ At the time this report was written, the new cosmetic pesticide regulations were being proposed to be reviewed due to the cited costs of complying with the regulations and the cited ineffectiveness of alternative pesticide (in Manitoba's case – only herbicide) treatments.

Scope and Purpose

The Manitoba *Environment Act* was amended to add the cosmetic pesticide ban provisions. The Act is very broad and covers many environmental regulatory issues. While there is no specific mention of public health, the purpose of the Act is to protect and maintain the environment in order to ensure a high quality of life and promote sustainable development. The Ministry of Conservation and Water Stewardship states that the aim of the



new restrictions is to provide additional protection for children, pets, and the environment (Man., 2015). This statement closely follows the purpose or intent of the *Environment Act*.

Manitoba's pesticide ban applies to the use and sale of any prescribed pesticide for lawns²⁰. The Act also specifically prohibits the application of a prescribed pesticide in, on, or over the exterior property of a school, hospital, or child care centre (*Environment Act*, s 40.5). This prohibition also extends to parking areas, pathways, and any area around play structures where children play or have access (MCWS, 2015).

Pesticides Captured

Under the *Non-Essential Pesticide Use Regulation*, a prescribed pesticide—for the purposes of the prohibition in the *Environment Act*—is any herbicide unless it is deemed an allowable herbicide (Man Reg 286/2014, ss 1(2))²¹. The prohibition does not capture any pesticides affecting animals. These pest control products are still available for the public to purchase and use. The Manitoba Government adopted Ontario's method for designating allowable pesticides (i.e. Ontario's class 11 pesticides) and will review Ontario's class 11 pesticide list to update Manitoba's list accordingly (MCWS, 2015). The schedule at the end of the Regulation lists 16 pesticide active ingredients that are permitted to be used for cosmetic purposes on lawns.

Like the prohibition on use, the province only prohibits the sale of herbicides used on lawns for cosmetic purposes. (*Environment Act*, ss 40.7(1)). Retailers are permitted to sell prohibited pesticides for exceptions; however, the retailer must ensure that the public does not have free

²⁰ In the Manitoba *Environment Act*, lawn means a plot of grass that is maintained at a regular and approximately uniform height through periodic and regular mowing, and includes any associated walkway, driveway or patio.

²¹ The number of active ingredients or pest control products this would ban could not be found using an internet search.

access to restricted pesticides. The retailer must also provide the purchaser with information regarding the pesticide and make reasonable inquiries to ensure that the purchaser is using the pesticide for an exception (Man Reg 286/2014, ss 3(1). Retailers must also document the sales of prescribed pesticides (i.e. herbicides) and keep the records for a period of five years (Man Reg 286/2014, ss 3(2)).

Exceptions

The exceptions to the Manitoba's cosmetic ban are similar to the other jurisdictions described above. The *Environment Act* makes exceptions for **golf courses**, agriculture (including turf and sod farms), forestry, and public health and safety (s 40.6). The *Environment Act* also allows for additional exceptions to be detailed in the Regulations:

- (a) to destroy, prevent, or control plants dangerous to humans;
- (b) to destroy, prevent, or control alien invasive plant species that are dangerous to humans, the environment, or the economy;
- (c) to destroy noxious weeds under authority of *The Noxious Weeds Act*;
- (d) to maintain specialty turf that is used for lawn bowling, lawn tennis, or cricket;
- (e) to maintain professional or internationally used sports fields; and
- (f) for use in a scientific experiment or for research purposes (Man Reg 286/2014, s 2).

S.3.3.5 - New Brunswick and Prince Edward Island

Both New Brunswick and Prince Edward Island's regimes will be described in the same paragraph because in 2010, Prince Edward Island adopted the same rules that New Brunswick adopted in 2009 (PEI Reg EC2005-761 s 40.1 – 40.2).

Under section 8 of the *Pesticides Control Act*, the Minister of Health banned the use and sale of 2,4-dichlorophenoxyacetic acid (**2,4-D**) for the control of lawn pests²². The New Brunswick Government also banned products that are considered overused or misused. They include combination pesticides (such as weed-and-feed products), hose-end pesticides (products that are designed to be applied using a garden hose), pesticide concentrates and pesticides requiring preparation (requires mixing, dilution, or some other form of mixing), and granular spreadable pesticides (small solid granules or pellets) (NB Gaz, 2009). The ban of these pest control products

²² lawn" is defined as "a plot of grass that is maintained at a regular and approximately uniform height through periodic and regular mowing, other than as a result of agricultural activities". Within this definition, the production of sod as an agricultural product is considered an agricultural activity.

resulted in the removal of more than 200 lawn care pesticide products being used or sold (NB, 2009).

Golf courses are required to be affiliated with an authorized integrated pest management body. **Golf courses** who use integrated pest management practices are permitted to use 2,4-D to control pests appearing on the **golf course** (NB, 2016).

Lawn care companies are still permitted to use pesticides on lawns; however, they are not allowed to use blanket treatments (i.e. treatments that cover an entire area). Pesticide treatments by lawn care companies are limited to a maximum of 50% of turf area to any one property, once per season (NB, 2016).

S.3.3.6 – Newfoundland and Labrador

In 2011, the Province of Newfoundland and Labrador implemented a pesticide prohibition on the use and sale of certain ingredients in pest control products in, on, or over lawns. These active ingredients are listed in section 14 of Newfoundland and Labrador's *Pesticides Control Regulations*: carbaryl, 2,4-D, mecoprop, dicamba, and 2-methyl-4-chlorophenoxyacetic acid (MCPA) (NL R 26/12, ss 14(1)).

The Regulations provide the exceptions that have been commonly seen in the other cosmetic pesticide regimes. These include **golf courses**, forestry activities, agricultural activities, sports turfs, and other highly maintained turfs (NL R 26/12, ss 14(3)). There are no further conditions described for these exemptions. There are also no specific mentions of public health nor are there any public health or safety exceptions.

S.3.3.7 - Alberta

In January 2010, Alberta prohibited the use and sale of “weed-and-feed” pesticides containing a mixture of 2,4-D and fertilizer mixtures under the *Pesticide Sales, Handling, Use, and Application Regulation* (Alta Reg 24/1997, s 4.1). However, pest control products containing 2,4-D in the absence of a fertilizer are still permitted for use.

Golf courses and turf managers are exempt from the prohibition (DSF and Équiterre, 2011).

The banning of weed and feed products, however, was an action already taken by Health Canada and the PMRA prior to Alberta banning these products²³.

²³ See Re-evaluation note: (REV2010-01) Uncoupling of Fertilizer-Pesticide Combination Products for Lawn and Turf Uses. February 2, 2010, online: <http://www.hc-sc.gc.ca/cps-spc/pubs/pest/decisions/index-eng.php#rvd-drv>.

S.3.3.8 - Saskatchewan and British Columbia

At the present time, there are no cosmetic pesticide bans in either Saskatchewan or British Columbia.

In 2011, a special committee was formed in British Columbia to assess whether or not to amend their pest management legislation and regulation to incorporate a cosmetic pesticide ban. Despite over 70% of British Columbians being in favour of a cosmetic pesticide ban (Innovative Research, 2010), the Government opted to continue to implement a regime focused on integrated pest management principles.

Despite the Government's choice to not pursue a cosmetic pesticide ban, there are approximately 40 municipalities within British Colombia that currently have cosmetic pesticide bylaws.

Summary of Provincial Regulations Banning Cosmetic Pesticides

Jurisdiction	Date Passed	Pesticides Captured			Scope of Coverage			Exceptions
		White List	Pesticides Captured	Adding New	Coverage	Indoor Spaces	Sensitive Areas	
Newfoundland and Labrador	2011	No	carbaryl, 2,4-D, mecoprop, dicamba, MCPA.	No	Lawns	No	No	Golf courses , forestry activities, agriculture, sports turf, highly maintained turf.
Nova Scotia	2011	Yes	All pesticides not on the <i>List of Allowable Pesticides Regulations</i> .	Yes	Lawns, shrubs, trees, flowers, ornamental plants	No	No	Public health & safety, forestry activities, agriculture golf courses .
New Brunswick	2009	No	2,4-D	No	Lawns	No	No	Golf courses , agriculture.
PEI	2010	No	2,4-D	No	Lawns	No	No	Golf courses , agriculture.
Quebec	2003	Partial: for areas frequented by children	20 active ingredients in Schedule I of <i>Pesticide Management Code</i> .	No	Lawns	Yes (Limited to areas frequented by children)	Yes, child & daycare centres, home childcare pre-, primary & secondary schools	Golf courses , plant nurseries, seed orchards, agriculture lawns & land used for outdoor sporting activities only by persons older than 14 years, fenced in, or equipped with a watering system
Ontario	2008	Yes	All pesticides not included in class 11.	Yes	in, on or over land	No	No	Public health & safety, golf courses , specialty turfs, arboriculture, specified sports fields, scientific purposes, natural resources
Manitoba	2014	Yes	All herbicides that are not allowable herbicides.	Yes	Lawns	No	Yes, schools, hospitals, or child care centres	Public health & safety, golf courses , agriculture (including turf and sod farms), forestry, destroy noxious weeds, internationally used sports field, scientific purposes.
Saskatchewan	No provincial protection							
Alberta								
British Columbia								

S.3.4 - Municipal Bylaws

The efforts to ban the use of cosmetic pesticides in Canada started with municipalities within the provinces. Since the first cosmetic pesticide ban bylaw was passed in Hudson, Quebec, 180 pesticide use bylaws have been passed in municipalities across the country (Healthy Ottawa, 2016). This figure does not include the 35 municipal bylaws that existed in Ontario prior to the 2008 provincial cosmetic pesticide ban. The following subsections will describe a selection of enacted municipal bylaws throughout Canada. Although the bylaws in Ontario are no longer active, a few past bylaws will be described below.

As mentioned in section 3.2.3, a municipality cannot regulate the sale of pesticides in its jurisdiction.

S.3.4.1 - British Columbia Municipal Bylaws

There are 40 municipal bylaws in British Columbia (Healthy Ottawa, 2016). Three municipal bylaws were examined in British Columbia as examples of the strongest and weakest as recommended by an interviewee from British Columbia. The municipalities whose cosmetic pesticide ban bylaws were reviewed are Courtenay, Richmond, and Oak Bay. All excluded pesticides are designated under British Columbia's *Integrated Pest Management Regulation* under Schedule 2 (BC Reg 144/2004).

Richmond

The City of Richmond, with a population of approximately 213 000, adopted a Pesticide Use Control Bylaw that came into effect in October 2009.

The scope of the bylaw prohibits the use of a pesticide for the purpose of maintaining outdoor trees, shrubs, flowers, other ornamental plants, or turf in, on, or under any private residential land or city land (Bylaw No 8514, s 2).

There are several exceptions provided in the bylaw. The exceptions found in municipal bylaws are similar to those found in the provincial exceptions above. The City of Richmond's exceptions include

- a) an excluded pesticide;
- b) the management of a pest that transmits a human disease;
- c) the management of a pest that impacts agriculture or forestry;
- d) residential areas of farms;
- e) buildings or inside buildings;
- f) land used for forestry, transportation, public utilities or pipelines unless the public utility or pipeline is owned by the City;

- g) the use of a pesticide in response to a human health issue; and
- h) the use of a biological control to control or eradicate a pest (Bylaw No 8514, s 3.1).

Exceptions also include **golf courses** and lawn bowling turfs. In the definition of “city land”, a **golf course** and a lawn bowling green are excluded from the definition (Bylaw 8514, s 1.2).

Courtenay

The City of Courtenay, with a population of approximately 24 000, adopted their non-essential pesticides use bylaw in July 2007.

The preamble of the City of Courtenay’s bylaw contains many provisions that make it clear that the bylaw is to address the public health of the City’s residents. Specific examples include the following:

- “...residents of the [City] are concerned about the non-essential use of pesticides and the risk that they may pose to the health and well-being of the environment and residents”
- “...the Precautionary Principle of international law supports local governments anticipating and preventing threats of harm to the environment, even if some cause-and-effect relationships are not fully established scientifically”
- “...the application of pesticides contributes to the cumulative chemical load absorbed by the natural environment” (Bylaw No 2505)²⁴.

These statements together form a strong purpose and intent to the bylaw by embracing two different principles (the precautionary principle and cumulative effects exposures) that are forward thinking and important factors to consider when aiming to protect public health from environmental risks such as pesticide exposures.

The scope of the bylaw prohibits the use of pesticides for the purpose of maintaining outdoor trees, shrubs, flowers, other ornamental plants, and turf on, in, under, or upon any private land or public land (Bylaw No 2505, s 3). Private land means any part of land used for residential purposes except for residential areas of farms (Bylaw No 2505, s 2). According to information supporting the bylaw, the bylaw does not apply to land that is used solely for purposes other than residential (e.g. commercial) (Bylaw No 2505, supporting information). Unlike Richmond, Courtenay does not exclude **golf courses** from the definition of “Public Land”.

Courtenay has similar exceptions for the application of pesticides as the City of Richmond:

²⁴ These sections in the preamble appear to be commonly used in other cosmetic pesticide ban bylaws. See the City of Nanaimo, for example:
<http://www.nanaimo.ca/assets/Departments/Community~Planning/Environmental~Planning/Pesticides/B7102.pdf>.

- a) a permitted pesticide;
- b) managing pests that transmit human diseases;
- c) managing pests that impact agriculture or forestry;
- d) building or inside buildings; and
- e) land used for agriculture, forestry, transportation, public utilities or pipelines (Bylaw No 2505 ss 4(1)).

District of Oak Bay

The District of Oak Bay, with a population of approximately 18 000, enabled its bylaw to regulate pesticide usage within its municipal boundaries in April 2011.

The preamble describing the purpose of the bylaw mirrors the City of Courtenay's preamble; however, there is one minor difference. Regarding the concern over the use of non-essential pesticides, there is no mention of the protection the health of residents (By-law No 4518).

Oak Bay's prohibition is closely identical to Courtenay's in that it covers the use of pesticides for the purpose of maintaining trees, shrubs, flowers, ornamental plants, and turf, on private and public land (By-law No 4518, s 2). The main differences between Oak Bay's pesticide bylaw and the other two BC municipalities reviewed are found within the bylaw exceptions.

The exceptions in Oak Bay's bylaw are the same as Richmond and Courtenay's with the exception of two distinct provisions. Subsection 3 (6) of Oak Bay's bylaw permits pesticides to be applied on public land by the District of Oak Bay when following the Integrated Pest Management Policy appended to the bylaw (Bylaw No 4518). The other exception relates to private land. Under section 4 of the bylaw, a person may apply to the Municipality for a permit to use pesticides on private land when

- a) there is a pest infestation that either threatens the integrity of a sensitive ecosystem or will cause significant economic loss to an owner or occupier of land; or
- b) application is required to control the spread of invasive species or noxious weeds (By-law No 4518).

Sensitive ecosystems are defined within the bylaw as land that is designated for environmental protection in the Municipality's Official Plan; areas identified in the *Sensitive Ecosystems Inventory for Eastern Vancouver Island and the Gulf Islands*; species and ecosystems identified by the *Conservation Data Centre*; or municipal park land, other than playgrounds or playing fields (Bylaw No 4518, s 1). Infestations are defined as "the presence of pests in numbers, or under conditions, that involve an immediate or potential risk of substantial loss or damage" (Bylaw No 4518, s 1). The person must post notice on the land that is being sprayed and must give written notice to residents adjacent to the land that is being sprayed (Bylaw No 4518, s 6-8).

S.3.4.2 - Manitoba Bylaws

Prior to the province passing a provincial non-essential use pesticide ban, two municipalities already had municipal bylaws that are still in effect today related to pesticide application: Brandon and Winnipeg.

City of Winnipeg

The City of Winnipeg's population is approximately 663 000 and its pesticide management bylaw came into force in May 2008. Compared to other bylaws that have been and will be examined, Winnipeg's bylaw does little in the way of prohibiting cosmetic pesticide use. The scope of the bylaw pertains only to commercial applicators. Section 2 of the bylaw states that generally a commercial applicator cannot use a pesticide unless they place a sign on access points to the property (Bylaw No 99/2008).

City of Brandon

The City of Brandon has approximately 46 000 inhabitants. Its pesticide bylaw came into effect in April 2006.

The preamble in the City's pesticide management bylaw makes specific references to the need to protect the health and well-being of the individuals in the municipality. The preamble uniquely²⁵ makes reference to high-risk populations suffering from environmental/chemical sensitivities that can be triggered by pesticide exposure—particularly cosmetic pesticides (Bylaw No 6825). This statement, along with the general desire to protect the health and well-being of the public, produces a strong public health message.

The scope of Brandon's pesticide management bylaw involves two mechanisms. The first, found in section 3, is a prohibition against the application of pesticides²⁶ in public areas, including schools, licensed day care centers, parks, playgrounds, licensed senior citizens' nursing homes, universities, colleges, and hospitals (Bylaw No 6825). The second requires residents who are medically sensitive to pesticides to complete an application to register their property with the City. Along with the registration, residents must provide a letter from their physician proving that they are hypersensitive to and will suffer an adverse medical reaction from exposure to pesticides (Bylaw No 6825, s 8). Once a property is registered, any person is prohibited from carrying out a pesticide application within 30 meters of a registered property (Bylaw No 6825, s 14). If a larger buffer zone is requested by the registered property owner, additional medical evidence must be

²⁵ Unique to the bylaws that were examined for the purposes of this report.

²⁶ Pesticide application means use of pesticides for the maintenance of outdoor trees, shrubs flowers, other ornamental plants, and turf on the part of a property used for residential or business purposes or on city property.

provided (Bylaw No 6825, s 15). A sign must be posted after application (Bylaw No 6825, s 22-23).

There are several exceptions to section 3 (the public areas prohibition) of the bylaw:

- a) disinfection of swimming pools;
- b) water purification;
- c) inside an enclosed building;
- d) preservation of wood;
- e) control of a public health threat to the residents of Brandon;
- f) insect repellent for personal use; and
- g) agricultural purposes (Bylaw No 6825, s 5).

There are two additional exceptions within section 4 of the bylaw. Firstly, under section 4, permitted pesticides are identified by the City of Brandon's integrated pest management advisory committee and listed in the City's integrated pest management plan. Secondly, if there is a pest that constitutes a threat to human beings or there is an infestation²⁷, a pesticide application may be carried out despite any provision in the bylaw (Bylaw No 6825).

S.3.4.3 - Ontario Bylaws

Prior to being nullified by the Province's own cosmetic pesticide ban, 35 municipalities in Ontario had pesticide bylaws (Healthy Ottawa, 2016). Based on the recommendation of an interviewee involved with Ontario pesticide bylaws, two bylaws were recommended for review as examples of strong bylaws: those for Toronto and Peterborough. To increase the sample of bylaws reviewed from Ontario, one additional bylaw was selected: the one from the City of Hamilton.

City of Toronto

The City of Toronto, with a population of 2.6 million, was one of the first municipalities within Ontario to pass a cosmetic pesticide ban bylaw. In April 2004, the bylaw came into effect.

Compared to other bylaws that have been reviewed, Toronto's bylaw was very short. The preamble was grounded in the City's desire to address the concerns of its citizens in responding to the health risks associated with pesticide exposure, particularly unnecessary exposure, and ensuring the protection and promotion of the health of inhabitants in the City. The bylaw identified the preservation of water quality within the Great Lakes (Lake Ontario) as critical because it is the primary source of drinking water for the City (Bylaw No 456-2003).

²⁷ Infestation means the presence of pests in numbers or under conditions which involved immediate or potential risk to human health or conditions which involve an immediate or potential risk of substantial loss or damage to property.

The scope of Toronto's bylaw was very clear: "No person shall apply or cause or permit the application of pesticides within the boundaries of the City" (Bylaw No 456-2003, s 612-2). Based on the bylaw's definition of "pesticides", any federally registered pesticide was captured under the prohibition except for 10 listed under the pesticides definition (Bylaw No 456-2003, s 612-1)²⁸.



Toronto's cosmetic pesticide ban bylaw contained 12 exceptions to the general prohibition. These included swimming pools disinfection, purification of water intended for human/animal use, use within buildings, termite control, the control of a health hazard, property infestation, rodent extermination, wood preservation, enclosed insecticidal bait, injection into trees or wooden poles, compliance with the *Weed Control Act*, and insect repellent (personal use) (Bylaw No 456-2003, s 612-2).

City of Peterborough

The City of Peterborough had a population of approximately 78 000. Its cosmetic pesticide bylaw came into effect in March 2006. Like Toronto's bylaw, Peterborough's pesticide bylaw recognized citizens' desires to respond to health impacts associated with non-essential pesticide use and protect the health of citizens (Bylaw No 05-077).

The scope of the bylaw was very simple and broad, mirroring Toronto's prohibition: "The application or use of pesticides is prohibited within the boundaries of the City of Peterborough" (Bylaw No 05-077, s 2). The bylaw listed acceptable products that could be applied for the control of pests, which included a substance derived from plants, plant extracts, fatty acids, iron phosphate, sulphur, mineral oil, borax, and microbial agents (Bylaw No 05-077, s 1).

Peterborough had very few exceptions for applying pesticides: the purification of water for human/animal use; use inside a building; agriculture; to control a plant, animal, or other organism harmful to human health; and **golf courses** (Bylaw No 05-077, s 3). An integrated pest management-accredited groundskeeper was required to conduct the pesticide applications on **golf courses**.

²⁸ Any of the following active ingredients are not considered pesticides for the purpose of the prohibition: soap, mineral oil, silicon dioxide, Bt (*Bacillus thuringiensis*), nematodes and other biological control organisms, Borax, Ferric phosphate, Acetic acid, Pyrethrum or pyrethrins, Fatty acids, Sulphur, or a product meant to lure/trap pests.

City of Hamilton

The City of Hamilton has a population of approximately 500 000 and its pesticides bylaw was enacted in September 2007.

The purposes for enacting the bylaw were consistent with other bylaws wishing to reduce the risk of exposure to non-essential pesticides through pesticide reduction and education initiatives. The preamble also included a desire to preserve and protect the agricultural component of Hamilton's economy. There was a caveat in the preamble, which stated that the City will endeavor to maintain City parks and sports fields following an integrated pest management program (Bylaw No 07-282).

Hamilton's ban on pesticide application was worded broadly in that no person may apply pesticides²⁹ within the geographical boundary of Hamilton (Bylaw No 07-282, s 3.1).

A number of exemptions existed for the general ban on pesticide application. Schedule D to the bylaw contained the commonly seen exceptions also found in Peterborough and Toronto. There was one additional exception that allowed for the application of pesticides to trees to preserve their health or the fruit that those trees produce (Bylaw No 07-282, Schedule D). Additional exceptions were included in section 3.2.2 of the bylaw, which included controlling an infestation to a horticultural landscape³⁰ (guidelines are set out in schedule C), maintaining public land, marking athletic and sports fields, **golf courses** and lawn bowling greens, and agriculture (Bylaw No 07-282).

There was a mandatory review provision within the bylaw that required the bylaw to be reviewed and evaluated every 5 years (Bylaw No 07-282, s 7.2).

S.3.4.4 - Quebec Bylaws

There are 138 municipalities within in Quebec that have pesticide bylaws in place (Healthy Ottawa, 2016). The City of Montreal was selected as an example of a strong bylaw based on the recommendation of a Quebec interviewee.

City of Montreal

In April 2004, the City of Montreal enacted a cosmetic pesticide bylaw. The population of Montreal is 1.5 million.

²⁹ Does not include: Luring agents, Enclosed insecticide bait, Insecticidal/herbicidal soaps, Mineral oil, Silicon dioxide, Biological control organisms, Borax, Ferric phosphate, Lime sulphur, Acetic acid, Pyrethrum or Pyrethrins, Fatty acids, Rodenticides, or Corn gluten.

³⁰ Horticultural landscape means an area covered by turf or ornamental plantings.

Section 1 of the bylaw states that the bylaw applies to the entire territory of the City of Montreal and section 3 states that no pesticides may be used or applied outside of buildings. The bylaw also makes a special distinction for “sensitive areas”. Sensitive areas are defined under the bylaw to include areas such as child care and day care centres, elementary and secondary schools, colleges and universities, health and social services institutions, places of worship, residences for senior citizens, and playgrounds and sports fields used by children under 14 (Bylaw No 04-041, s 1).

Sensitive areas tie directly into exceptions allowed in the bylaw. Infestations are a permitted exception for pesticide use under the bylaw unless the area is a sensitive area. Other exceptions are allowed for **golf courses**, lawn bowling greens, and agriculture. Subject to acquiring a permit, further exceptions are allowed around buildings for the treatment of ants, spiders, and vermin. The bylaw also permits any biological control agent designated by the PMRA as well as any product that contains an active ingredient authorized under schedule II of the Quebec Pest Management Code (Bylaw No 04-041, s 4).

In February 2016, the City of Montreal banned the use of neonicotinoids in all circumstances, including the use on **golf courses**, bowling greens, agricultural/horticultural production, and any other exception under the bylaw (Bylaw No 04-041-3).

S.3.4.5 - Nova Scotia Bylaws

There is currently only one active bylaw in Nova Scotia: the bylaw for the City of Halifax. The Town of Truro had a bylaw but it was rescinded after the province passed its provincial pesticide bylaw. The province of Nova Scotia does not allow municipalities to pass bylaws related to pesticide use (Municipal Government Act, ss 172(1)(j)).

City of Halifax

In 2000, Halifax was one of the first large Canadian municipalities (with a population of approximately 300 000) to pass a cosmetic pesticide bylaw.

Halifax’s bylaw has been phased in since it was enabled in 2000. There has been a prohibition against applying pesticides on municipally owned land since 2000 (Bylaw No P-800, s 3). In April 2001, application of pesticides was prohibited around public areas beyond municipal properties. Specifically, section 4 of the bylaw prohibited a person from applying pesticides within 50 metres of the property boundary of a school, day care centre, park, playground, senior citizens’ residence, university, church, or hospital (Bylaw No P-800). Another component of the bylaw was phased in between April 2001 and April 2003. It allowed property owners to register their properties with the City of Halifax by providing letters from two physicians stating that a member of their household had a sensitivity to pesticides and experienced adverse health risks that are potentially life-threatening (Bylaw No P-800, s, 7). Once registered, section 10 of the bylaw

prohibited the application of pesticides within 50 metres of the boundary of the registered property. On April 1, 2003, subsection 5(1) of the bylaw came into effect, which prohibits the application of pesticides within the boundaries of the municipality (Bylaw No P-800).

There are few exceptions provided in Halifax's bylaw. Despite any provision in the bylaw, pesticide applications may take place to control any animal or plant that constitutes a danger to the health of humans. Pesticide applications may also take place to control insects that have infested a property (Bylaw No P-800, ss 6(2)). Pesticides listed in administrative order 23 (permitted pesticides) are also excluded from the pesticide application prohibition in subsection 6(1)³¹.

S.3.4.6 - New Brunswick Bylaws

There are four pesticide bylaws still active in New Brunswick (Healthy Ottawa, 2016). The Town of St. Andrews was reviewed for New Brunswick based on the availability of an English version of the bylaw.

Town of St. Andrews

St. Andrews is a small town of approximately 1 800 people. Its pesticide control bylaw became effective in October 2006.

The municipality simply stated that the purpose of the bylaw was to protect the health of the people and the environment of Saint Andrews (Bylaw No 06-03).

Section 2 of the bylaw prohibits the use of pesticides in the territory of the municipality (Bylaw No 06-03). Pesticides that are permitted pesticides mirror Halifax's list with the exception of acetic acid, corn gluten, and FeHEDTA. Rotenone is a permitted pesticide which appears only on St. Andrews' list in schedule A to the bylaw (Bylaw No 06-03).

The exceptions to the bylaw are similar to those of Peterborough, with the exception of agriculture, which is not exempted from St. Andrews' bylaw. Additionally, St. Andrews has exceptions under subsection 4(1) for commercial gardens and other horticultural operations as long as they are on a certified Audubon Sanctuary and the pesticides are applied by an accredited certified integrated pest management groundskeeper. Pesticides may only be used in these circumstances when all non-toxic alternatives have been considered. Section 5 allows for a person to apply to the municipality for a permit to use a pesticide when there is a human health

³¹These include: Insecticidal and Herbicidal soaps, Bt (*Bacillus thuringiensis*), Nematodes, Other biological control organisms, Animal repellents, Rodenticides, Injected tree treatments, Sticky media, Borax, Dormant oils, Horticultural oils, Bordeaux mixture and other Sulphur compounds, Lime sulphur, Ferric phosphate, Pruning paint, Pheromone traps, Pyrethrum (or pyrethrin), Diatomaceous earth, Acetic Acid, Corn Gluten Meal, and FeHEDTA.

emergency or other emergencies. Signs must be posted if a person uses pesticides identified under section 5 (Bylaw No 06-03).

S.3.4.7 – Prince Edward Island Bylaws

There are currently two municipalities with active bylaws in the province of Prince Edward Island. Those municipalities are Stratford and Cornwall³². The bylaws are identical; therefore, only Stratford's will be reviewed.

Subsection 64(1.2) - (1.3) of Prince Edward Island's *Charlottetown Area Municipalities Act (CAMA)* restricts a municipality's powers to pass pesticide bylaws related only to non-domestic pesticides³³. The same *Act* also prohibits any municipality in PEI from passing pesticide bylaws affecting

- a) the management of pests that transmit human diseases or affect agriculture or forestry;
- b) **golf courses;**
- c) buildings or inside buildings;
- d) land used for agriculture, forestry, or transportation; or
- e) land used for public utilities or pipelines unless the public utility or pipeline is vested in the municipality (*CAMA*, ss 1.3).

Town of Stratford

Stratford, a community with a population of approximately 8 500, passed its Cosmetic Pesticide Bylaw in August 2015.

As noted above, the scope of the bylaw is limited by the *CAMA*. The bylaw prohibits the application of non-domestic pesticides by any person, including licensed applicators, on any property which is wholly or partially within the boundaries of Stratford unless the non-domestic pesticide contains only active ingredients found on the allowable pesticides appendix of the bylaw or if application falls under an exception under section 6.1 of the bylaw (Bylaw no 35).

The bylaw has several exceptions commonly found in the other bylaws examined for this report:

- a) to destroy, prevent, or control a species of plant that is poisonous to humans by touch;
- b) to destroy, prevent, or control an alien invasive plant species that may negatively affect the health of humans, the environment, or the economy;

³² At the time this report was written, Charlottetown had a draft bylaw that was to be voted on; however, a motion sent the draft bylaw back to committee and has yet to be passed. See: <http://www.cbc.ca/news/canada/prince-edward-island/charlottetown-cosmetic-pesticide-law-bounced-back-to-province-1.3115058>

³³ The reference to "non-domestic" refers to the *PCPA* classification system for pesticides. Domestic pesticides are a class of pesticides under the *Pest Control Products Act*. These products are distributed primarily to the general public for personal use in or around their homes. The other classes are: commercial, restricted, and manufacturing. Therefore, municipalities in PEI can only regulate the use of pesticides registered under these three classes.

- c) in a scientific experiment or for research purposes; or
- d) to treat an insect infestation (Bylaw no 35, s 6.1)³⁴.

In order to use a pesticide under one of these exceptions, a property owner must apply to the municipality and provide an administrative fee (\$50.00).

S.3.4.8 - Alberta Bylaws

At the present time, there is only one municipality with an active pesticide bylaw within Alberta: the Summer Village of Grandview (Healthy Ottawa, 2016).

Summer Village of Grandview

The Summer Village of Grandview has a population of approximately 1 000. In August 2014, the municipality passed its pesticide and fertilizer restriction bylaw.

The preamble of the bylaw is unique relative to other bylaws examined in this report. Grandview is a part of a number of municipalities that are in proximity to a common lake (Pigeon Lake). Since Grandview is the only municipality in Alberta to have any kind of cosmetic pesticide law, the preamble encourages other municipalities to pass their own similar bylaws (Bylaw no 298).

The bylaw is very rudimentary compared to the bylaws examined above. The bylaw explicitly prohibits the use of all chemical herbicides except to control noxious and prohibited noxious weeds as defined in Alberta's *Weed Control Act* (Bylaw no 298, s. 2). No terms are defined in the bylaw, nor are there any lists of allowable safe herbicides that can be used.

City of Calgary

Currently, there is no cosmetic pesticide ban bylaw in Calgary. However, from 2008–2009, there was an attempt to pass a pesticide ban. The proposed ban was rejected by council in 2009 due to its weakness and because it included no method to implement the bylaw (Herald, 2009). Examining the provisions in Calgary's draft and what made the bylaw weak is useful for the purposes of having a bylaw to contrast against the good or strong bylaws.

In the preamble, Calgary's draft pesticide bylaw recognized the health risks that pesticides pose and the health benefits from reducing non-essential pesticides. From this, there was also a desire to "strive towards a precautionary approach that states that when an activity raises threats of harm to human health with respect to the environment that precautionary measures will be taken in relation to pesticide use" (Bylaw No 72M2009).

³⁴ Infestation thresholds are defined in Appendix B of the bylaw.

The scope of Calgary’s draft bylaw extended to the application of a pesticide to landscaped areas and ornamental plantings, including but not limited to lawns, athletic/playing fields, parks, and **golf courses** (Bylaw No 72M2009, s 3). The pesticide use prohibitions applied to two groups under the bylaw: non-commercial applicators and commercial applicators. It indicated that a person (non-certified applicator) could not apply a pesticide by a standard application³⁵, with a hose-end sprayer, or that requires mixing or dilution prior to applying (Bylaw No 72M2009, s 5). However, a person may apply to the City for a permit allowing that person to do any of these things (Bylaw No 72M2009, s 6).

There were no provisions in the bylaw recognizing allowable or safe pesticides. The bylaw, however, did permit a person to make minor applications³⁶ of pesticides (Bylaw No 72M2009, ss 2(1)). Commercial applicators were prohibited from applying a pesticide unless they were a Certified Applicator (Bylaw No 72M2009, s 7).

There are several exceptions that were proposed under Calgary’s bylaw: complying with the *Weed Control* Act for controlling weeds, agricultural pests, and destroying plants or animals that pose a threat to human health (Bylaw No 72M2009, s.4)

Whenever a person applied pesticides under this draft, notice was required to be given via proper signage. However, a person who applied a “minor application” of pesticides was not required to give notice (Bylaw No 72M2009, s 8(2)).

S.4 – Discussion: Key Elements in Cosmetic Pesticide Bans

Nine individuals were interviewed as key informants to provide information and additional analysis on cosmetic pesticide provincial laws and municipal bylaws. The interviewees are listed and described in the methodology in s.2.

The questions directed to key informants in the areas of cosmetic pesticide regulations and bylaws have provided useful feedback. The following section will incorporate the answers given by these individuals following the questions used in the interviews (see appendix). The majority of the answers were applicable to both provincial regulations and municipal bylaws. Therefore, examples have been drawn from the laws reviewed above in order to illustrate answers given by the interviewees.

³⁵ Standard Application means the application of a Pesticide at a Premises to a cumulative area greater than one (1) square meter in a twenty-four (24) hour period.

³⁶ Minor Application means the application of a Pesticide at a Premises to a cumulative area of one (1) square meter or less in a twenty-four (24) hour period.

S.4.1 - Structure of Provincial Laws and Municipal Bylaws

Precautionary Principle

The interview respondents expressed a number of different ideas and principles that they would like to see included in a pesticide bylaw or regulation. Moreover, these ideas and principles are good overarching concepts that are helpful in framing the discussion around pesticide ban laws.

The most common principle cited by the respondents was the precautionary principle. Generally, the precautionary principle means that when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically (Wingspread Conference, 1998). The health risks associated with pesticide exposure—particularly for vulnerable individuals such as children and pregnant women—have been well documented in a number of systemic reviews of the health literature. Even prior to these reviews, a number of jurisdictions within Canada recognized the need to be proactive in addressing cosmetic pesticide use within a given jurisdiction. In the decision delivered by the Supreme Court of Canada in *Hudson v. Spraytech*, the Court determined that the precautionary principle fit into the goals of preventive action that the Town of Hudson was attempting to incorporate into its bylaw (*Hudson v Spraytech*, 2001). Several of the bylaws reviewed for this report contained the precautionary principle within the preamble (see: Toronto, Peterborough).

Respondents indicated that they wanted cosmetic pesticide laws drafted in simple and clear terms, which were as comprehensive as possible. Municipally and provincially, examples of simple, clear, and comprehensive laws that were examined include those developed by Peterborough, Toronto, Montreal, and Nova Scotia. Examples of comprehensive but more complex laws are Ontario and Quebec.

Intergovernmental Cooperation

The principle of intergovernmental cooperation was a point of contention in Ontario and Nova Scotia. As mentioned above, Ontario made all municipal bylaws inoperative when it implemented its regulations to phase out cosmetic pesticides. In Nova Scotia, the City of Halifax considered repealing its existing cosmetic pesticide bylaw when the provincial ban was enacted, but did not, and was not required to under the legislation.

Many interviewees stated the importance of provinces allowing municipalities to retain the power to go above and beyond provincial regulations—to add additional layers of protection for residents—as long as the bylaws are consistent with provincial requirements. Halifax's bylaw, for

example, contains provisions that the provincial law does not³⁷. It includes buffer zones around sensitive areas such as schools, licensed day care centres, parks, playgrounds, licensed senior citizens' residences, universities, churches, and hospitals, which the Nova Scotia regulations do not. It also includes notice and signage requirements that are not included in the provincial regulations.

Jurisdictions such as British Columbia have restricted what municipalities can regulate in their pesticide bylaws. In British Columbia's *Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation* under the *British Columbia Community Charter*, a municipality may not exercise the authority relating to the application of pesticides

- a) for the management of pests that transmit human diseases or impact agriculture or forestry;
- b) on the residential areas of farms;
- c) to buildings or inside buildings; or
- d) on land used for agriculture, forestry, transportation, public utilities, or pipelines unless the public utility or pipeline is vested in the municipality (BC Reg 144/2004, ss 2(2)).

S.4.2 - Provisions that Make Laws Strong or Weak

Scope – Uses & Applications

The scope of a cosmetic pesticide ban is an important aspect to examine when assessing the strengths and weaknesses of a bylaw. The elements that a prohibition covers (i.e. lawn, gardens, trees) is a good measure to use when assessing the scope. Regarding provincial laws, Ontario and Nova Scotia have comprehensive bans that cover lawns, trees, shrubs, bushes, and ornamental plants. In fact, Ontario's law covers all land. Most of the cosmetic pesticide bylaws examined were equally comprehensive in that their prohibitions consistently covered all of the municipal territory, save for Calgary's draft bylaw. Contrarily, other provincial pesticide regulations directed at cosmetic pesticides—such as those in Manitoba, New Brunswick, Prince Edward Island, and Newfoundland and Labrador—only apply to lawns. When the scope of a ban is narrow, pest control products can be used on some elements such as flowers or shrubs, which decreases the protection provided by the ban.

Targeting Pesticides – White & Black Lists

Bans structured around a white list that identifies the safe or low-risk pesticides that are approved for use or sale for cosmetic purposes are considered the most effective. This is the model that is followed in Ontario, Nova Scotia, and—most recently—Manitoba. The alternative

³⁷ For a complete list of differences, see: https://www.ecologyaction.ca/files/images-documents/file/Built_Environment/Bylaw%20v%20Prov%20Regs.pdf

is akin to a black list, which usually contains active ingredients in cosmetic pesticides that are prohibited from being used. Quebec³⁸ is an example of a jurisdiction that uses a black list. With a black list, the onus is on the jurisdiction to add new ingredient/pesticide to the list. With a white list, the burden is on the manufacturer to prove that the new ingredient/pesticide meets the criteria set in the legislation.

Classifying or Selecting Pesticides

When identifying criteria, ingredients or pesticides to be prohibited or permitted for use, it is important to think about the legal tool in which they are placed. For example, Ontario has captured the criteria for low risk pesticides in a Guidelines. While these criteria are strong, there is a concern that they could be weakened without going through a review process because they are captured in a Guideline rather than in a regulation (DSF and Équiterre, 2001).

One interviewee noted that care must be taken when adopting a list of acceptable pesticides from another jurisdiction to consider whether those pesticides might have a different impact on a region with a different ecosystem. The interviewee gave the example of FeHEDTA (an iron based active ingredient commonly found in the herbicide Fiesta) and the deleterious effect it can have in fresh water environments in the Halifax municipal region, which it would not have in other ecosystems (Patriquin, 2011).

Exceptions for Public Health

Exceptions can significantly undermine the effectiveness of a cosmetic pesticide ban. However, there are some exceptions that are considered acceptable. All interviewees agreed that exceptions should be made for public health concerns such as the control of plants or animals that pose a health or safety risk to humans, water purification, and the removal of invasive species that pose a risk to human health or the environment. However, even in these situations, interviewees felt that the risk associated with these scenarios should be assessed rather than automatically accepted, and that safe and reasonable alternatives should be explored and exhausted prior to using an otherwise prohibited pesticide. The bylaw from the Town of St. Andrews contains language in one of the exceptions present for commercial gardens and other horticultural operations requiring safe alternatives to be considered before using prohibited pesticides. One interviewee suggested that a permitting system should be applied to these uses to monitor them and ensure that the prohibited pesticide is not being abused.

Noxious Weed Laws

Some interviewees identified noxious weed legislation as a potential mechanism to undermine a cosmetic pesticide ban. Noxious weeds are plants identified in legislation by the government,

³⁸ Quebec does use a white list for areas frequented by children.

which are generally weeds that are harmful to humans, wildlife, the environment, or agriculture. In some cases, however, jurisdictions can add weeds to lists under these acts that pose no such risk. For example, Manitoba has added dandelions to their noxious weeds act list (Manitoba Agriculture, 2015).

Exceptions for Golf Courses & Indoor Environments

Interviewees identified a number of exceptions that are seen to be unacceptable because they can undermine the purpose of a cosmetic pesticide ban. The two exceptions most commonly cited were golf courses/turf and indoor use. Based on all of the reviewed laws and bylaws, it appears to be standard practice to exempt golf courses from the prohibition to apply cosmetic pesticides.

Most interviewees also cited the indoor use of pesticides as an exception that can leave people unprotected. The use of pesticides in indoor environments such as homes, schools and daycare facilities, can present greater health risks for populations such as children, who are at greater risk of exposure because of their behaviour, and more sensitive to toxic agents because their bodies are still developing. While cosmetic pesticide bans are commonly associated with outdoor landscaping elements, there are indoor applications of pesticides that could benefit from regulations that direct people to safer practices or to use the least toxic products. With the exception of Quebec, no other jurisdiction prohibits the application of pesticides indoors, and with Quebec, the prohibition only extends to institutions for children and youth.

Exceptions for Infestations

Most of the cosmetic pesticide bylaws provide an exception for infestations. This exception is found among the examined bylaws for Toronto, Hamilton, Brandon, Oak Bay, Montreal, and Halifax. Infestation clauses can undermine a pesticide ban if there are no or poor guidelines to follow when determining when a potential infestation exists or there are poor control measures in place.

Toronto created good guidelines that defined those areas (i.e. residential, commercial, golf courses, playing fields) where it would be appropriate to allow pesticides to control infestations and set “action thresholds” for when an application could take place. Use of pesticides when there is an infestation is supposed to protect against an immediate or potential risk of substantial loss or damage. Unlike guidelines provided in bylaws with infestation clauses such as Town of Oak Bay, the Toronto guidelines provide context for what is considered “substantial loss or damage”. Examples include destruction of rare plants or rare ecosystems, damage to transportation or utility corridors from plant material, and extensive loss of turf (such as golf greens) from fungal diseases (Toronto, 2005). Toronto’s guidelines also require consideration of the health risks associated with pesticide applications for areas such as playing fields, residential

lawns, cemeteries, and general parkland. Based on these considerations, these areas rarely warrant the application of pesticides for an infestation (Toronto, 2005).

Pesticide Sales Exceptions

Several interviewees identified problems that can arise from exceptions allowed for pesticides that are prohibited for sale and use for cosmetic purposes, but that can be used in other products for purposes beyond the scope of the ban (e.g. indoor insect control) or that are permitted under an exemption for the “promotion of public health and safety”—commonly called “mixed-use” pesticides³⁹. None of the laws reviewed require third-party certification at the point of sale and, therefore, provide no way to verify if pesticides are being used for the exception under the law (DSF and Équiterre, 2011). Interviewees cited further problems at the point of sale related to sales personnel. Concerns were raised surrounding untrained summer employees selling prohibited pesticides for certain uses without making inquiries to the customer that are required by law⁴⁰.



Integrated Pest Management

Many bylaws contain provisions for the use of integrated pest management (**IPM**) strategies. In theory, IPM practices are intended to promote the use of alternative pest management methods to control pests with the use of pesticides as a last resort. Several interviewees commonly discourage the use of IPM over a cosmetic pesticide ban since the use of pesticides is permitted and there is no guarantee that the pesticides will be used only as a last resort.

The City of Edmonton can be used as an example of how an IPM strategy is not as effective as a bylaw. Edmonton does not have a bylaw regulating pest management within the boundaries of the city. Instead, the City’s policy states that the City uses a range of pest management practices prioritizing pest prevention and non-chemical controls. The policy does, however, reserve the use of chemical controls such as synthetic pesticides⁴¹ if other pest management practices have been considered or have failed (Edmonton, 2004). Mosquito control is a current pest

³⁹Refer back to section 3.3.1 for an explanation on mixed use pesticides.

⁴⁰ Recent pesticide sales issues were reported on in the City of Winnipeg. See: <http://www.cbc.ca/news/canada/manitoba/i-team-finds-restricted-pesticides-easy-to-buy-in-winnipeg-1.3604753>.

⁴¹ Edmonton’s Integrated Pest Management Policy purports to use the least toxic approved pesticide when pesticide use is required.

management issue in Edmonton⁴². The City does not have a mosquito pest management strategy beyond the current policy in place. To manage mosquitos, the City uses chlorpyrifos which is a very toxic pesticide (Edmonton, 2016). There are biological controls such as VectoBac, which uses *Bacillus thuringiensis* var. *isrealensis* (**Bti**) to kill larval populations, which are less toxic to humans and the ecological environment (Whitehorse, 2016). A cosmetic pesticide bylaw would prohibit the use of chlorpyrifos to control nuisance insects and reduce the risk of the public's exposure to toxic pesticides.

S.4.3 - Implementation of Cosmetic Pesticide Bans

This section will address how pesticide bans are operationalized. Interviewees consistently stated that the optimal way to implement a pesticide ban is through a phased-in approach involving education, monitoring, and enforcement. According to a research report produced by the Canadian Centre for Pollution Prevention and Cullbridge Marketing and Communications (**C2P2**), a pesticide ban bylaw in a jurisdiction is only as good as the jurisdiction's education and enforcement initiatives (C2P2, 2004).

Education and Communications

Education initiatives focus largely around communicating the natural alternatives that exist for residents to take care of their properties and the health impacts associated with pesticide use and exposure. Moreover, emphasis is also placed on communicating with industry/commercial retailers to ensure that changes are made to the products that are being sold. That way, when a pesticide ban comes into effect, retailers have the products that educational initiatives are targeting.



Interviewees emphasized the importance of focusing on transition education. A 2011 paper examining the implementation of the City of Toronto's pesticide bylaw highlighted that city staff

⁴²The decision of whether to protect the public from the health risks of vector-borne diseases and the health risks of pesticide exposure is a complicated question. Discussion of the issue is beyond the scope of this report. For the purposes of this section, mosquito control will refer to the control of nuisance mosquitos, which are the primary issues the municipality is faced with. See: http://www.edmonton.ca/programs_services/pests/edmontons-mosquito-control-program.aspx

made 291 proactive information visits to sensitive sites, such as day cares, hospitals, golf courses, and bowling greens (Cole et al., 2011).

The City of Toronto also established important relationships with Toronto Master Gardeners to produce a variety of educational materials. The City also created a phone hotline that allowed residents to ask horticultural questions to Master Gardeners. The expert information that the Master Gardeners provided legitimized the message the City of Toronto was attempting to convey: that it is possible to maintain attractive and healthy lawns without having to resort to cosmetic pesticide use.

Enforcement and Monitoring

Enforcement and monitoring are important complements to an educational campaign. Some interviewees stressed, however, that enforcement should not solely be a punitive measure. Prosecuting offenders is an important measure to help ensure legal compliance and it is important so that individuals and companies know that illegal use or sale of pesticides will be penalized, but enforcing and responding to complaints can also provide a means of educating individuals. Specialized training for inspectors is important, as they can provide one-on-one assistance to residents that require coaching and help residents find the proper solution for the pest issue they are facing (C2P2, 2005).

The Équiterre and DSF report provided two important recommendations for government bodies regarding implementation of enforcement measures. The first is conducting unscheduled inspections to ensure full compliance with a ban (DSF and Équiterre, 2011). This measure can help to ensure that individuals and companies cannot undermine cosmetic pesticide use or sale prohibitions. The second recommendation is for governments to provide status and evaluation reports on monitoring and enforcement actions (DSF and Équiterre, 2011). Production of these reports can help decision makers evaluate the implementation and effectiveness of current laws. These report could also serve as a deterrent for those that may try to use cosmetic pesticides for prohibited uses in the future by demonstrating to the public that enforcement does take place and offenders are prosecuted.

For those individuals or companies that are prosecuted, penalties will vary from jurisdiction to jurisdiction. The standard penalty for contravening a cosmetic pesticide law is a monetary fine. Fines can range in amount depending on the jurisdiction and whether or not the offender is an individual or a corporation. In Ontario, for example, the fine for a first time offence can be up to an amount of no more than \$20,000 and no more than \$50,000 for a subsequent conviction. If the offender is a corporation, however, the penalty is no more than \$100,000 for a first offence and no more than \$200,000 for a subsequent offence (Ontario Pesticides Act, s.43).

Quebec's monetary fine for contravening a cosmetic pesticide law is a fine not less than \$500 nor more than \$30,000 (Pesticides Act, s.118). Municipalities also use fines as a penalty for contravening pesticide bylaws. Fines in municipal bylaws examined in this report tend to mirror those found in provincial laws; however, there can be more variability in the fine amounts. For example, the City of Brandon's fine for contravening the pesticide bylaw is an amount of no less than \$50 for the first offence and no less than \$100 for the second offence, but not exceeding \$1,000 in either case (Bylaw No 6825, s 24). In the City of Courtney, fines for contravening the pesticide bylaw are only \$100 (Bylaw No 2505 s 8). Fine amounts in the City of Richmond and the City of Hamilton (when it was an active bylaw), are more similar to those found in provincial laws. Richmond's fine amount is up to an amount of no more than \$10,000 (Bylaw No 2505 s 11) and Hamilton's fine amount was up to a maximum of \$5,000 for a first offence, a maximum of \$20,000 for a second, and \$100,000 for a third offence (Bylaw No 07-282, s. 5.1).

S.4.4 - Evaluation of Cosmetic Pesticide Bans

Interviewees provided four different reports that evaluated the efficacy of cosmetic pesticide bans. To date, there appears to be very little Canadian-generated content that examines the efficacy of cosmetic pesticide bans.

Implementation Evaluation - Multiple Jurisdictions

The C2P2 report examined cosmetic pesticide ban bylaws in multiple jurisdictions both in Canada and internationally. The most compelling finding from the study revealed that initiatives that were the least effective were voluntary programs implementing education and outreach programs alone (only 10-24% reduction in pesticide use reported). The most effective initiatives were in jurisdictions that had mandatory prohibitions supported by education programs (C2P2, 2005).

Barriers in Alberta

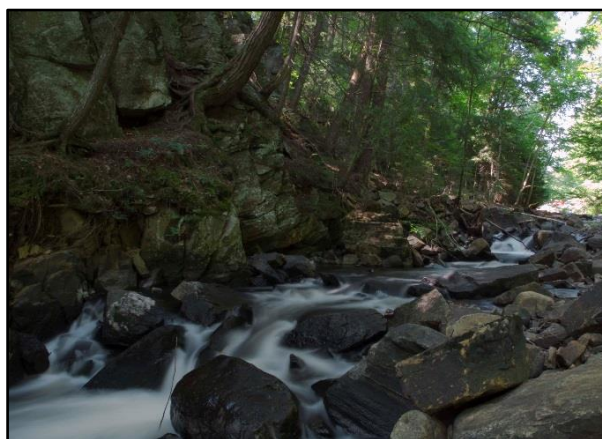
An Alberta interviewee noted that municipal and provincial decision-makers often indicate that there is no need for provincial or municipal bans for the cosmetic use of pesticides because the PMRA evaluates pest control products and ensures their safety. However, as noted in section 3.2.1 of this report, there are a number of gaps and weaknesses in the current federal pesticides approval system.

The Federal Government is also not capable of regulating pesticides at a community level in the way that a province or municipality can. Aside from following the warning labels on pest control products, there are few legal mechanisms that a resident can use to protect themselves or their families from pesticide exposures.

Moreover, voluntary best practices implemented by organizations or companies are not legally binding. The Alberta interviewee provided anecdotal evidence of pesticide-sensitive residents having their lawns treated with pesticides without their permission, as well as treated lawns being unmarked by signs. She also reported that the City of Edmonton continues to use chlorpyrifos, a highly toxic pesticide, inside the City's limits against the historic advice of the PMRA, which no other jurisdiction in the country does. She indicated that Edmonton has also sprayed chlorpyrifos inside a park in contravention of the product label and federal requirements. Chlorpyrifos is specifically mentioned in the 2015 report of the Federal Commissioner for the Environment and Sustainable Development as a pesticide that has not been re-evaluated in a timely manner. The Alberta interviewee noted that a provincial ban of the cosmetic use of pesticides would help to prevent these situations and provide residents with tools to resolve situations that concern them.

Ontario Evaluation – Pesticide Residues in Water Samples

The report most commonly referenced by key informants was generated by the Ontario Ministry of the Environment and Climate Change. This report analyzed 88 and 80 stream water samples around Ontario in 2008 and 2009 respectively. Samples were analyzed for the concentrations of common pesticide active ingredients that were prohibited by Ontario's cosmetic pesticide ban: 2,4-D, glyphosate, carbaryl, MCPP, dicamba, and AMPA.



Post-ban measurements revealed significant decreases in 2,4-D (by 81%), dicamba (by 83%), and MCPP (by 81%). Glyphosate levels, however, remained relatively the same and carbaryl showed no significant change (Todd, 2011). The levels detected in stream water provide evidence that Ontario's cosmetic pesticide ban significantly reduced the amount of pesticides released into the environment.

Toronto Evaluation Report re: Pesticide Use

The City of Toronto produced an interim (2007) and final report (2009) to assess the implementation of the City's pesticide bylaw. Report data was generated using self-reported behavior through telephone surveys. From 2003 to 2007, reported pesticide use on lawns by residence decreased by approximately 57%. In 2003, almost 37% of residences indicated that they used pesticides on their lawns. In 2007, that number decreased to approximately 16%. The remaining individuals using pesticides were possibly attributable to non-compliance to the bylaw

or using lower-risk pesticides that were permitted under the bylaw. Moreover, surveyed individuals that hired lawn care companies that applied pesticides decreased from approximately 60% in 2003 to approximately 12% in 2007 (TPH, 2009). In 2007 more residents were using natural alternatives (approximately 67%) (TPH, 2009). Regarding enforcement, 3285 complaints were registered with the City during from 2004 to 2008. Over 95% of complaints were directed against lawn care companies and the remaining against residents. In total, there were seven convictions under the pesticide bylaw and 43 warning letters were issued (TPH, 2009). Assuming that the reports of behavior are reliable, the implementation of Toronto's pesticide ban bylaw was very effective.

Nova Scotia Evaluation – Retail Store Audit

The final report provided by interviewees regarding pesticide ban evaluation came from Nova Scotia. Three volunteer spot audit reports were generated (2011-2013) after Nova Scotia's provincial ban was implemented. Both certified and non-certified retailers were chosen in various towns and cities throughout the province. The audits assessed four different criteria related to the legal sale of cosmetic pesticides under Nova Scotia's cosmetic pesticide ban. These included the storage of pesticides, whether written information was provided, whether a certified staff member was present, and the overall knowledge of staff (PFNS, 2013). Fourteen of the 21 retailers (both certified and non-certified) that were audited did not follow regulations for storing pesticides. Issues included mingling prohibited pesticides with allowed pesticides as well as mingling products meant for indoor use with products meant for outdoor use. The authors noted that this situation was getting worse over time (PFNS, 2013).

Ten of the 21 retailers provided information and literature on pesticide products. The majority (11 out of 13) of retailers who did not provide information were non-certified vendors. This is a continuing trend for non-certified retailers, whereas certified retailers have markedly improved since 2011 (PFNS, 2013). Only one certified store did not have a certified staff member on site. This is a large improvement since 2011 when five stores did not have a certified staff member. What was troubling at this store without the certified staff member was that the staff member assisting the auditor provided misinformation and recommended illegally purchasing controlled pesticides from a farmer (PFNS, 2013). The report concludes that there is a need for Nova Scotia Environment to conduct enforcement visits to ensure compliance with the law. (PFNS, 2013).

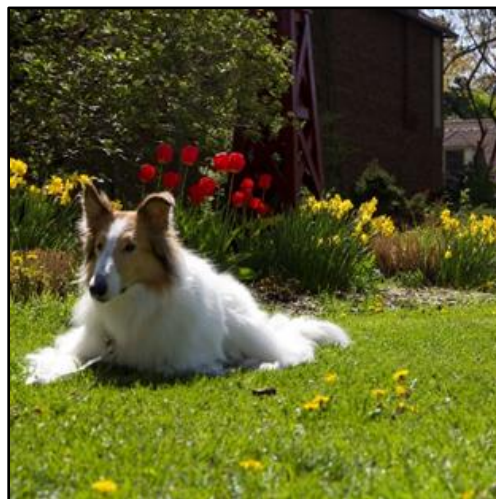
S.4.5 – Additional Benefits of Cosmetic Pesticide Bans

Protecting public health⁴³ was cited by interviewees as the most important message to convey when attempting to secure a cosmetic pesticide ban in any jurisdiction. However, there are additional benefits associated with cosmetic pesticide bans:

- there is less run-off of pesticide residues into waterways;
- soil complexity improves;
- gardens become more wild, attracting animals such as birds, butterflies and bees, that can promote good mental health and emotional well-being⁴⁴;
- the environment becomes more robust, resilient, and healthy;
- yards become safer for pets⁴⁵; and
- there can be economic benefits for lawn care companies (PFNS, 2009; TPH, 2007).

S.5 - Next Steps

Over the past 15 years, significant progress has been made to limit the use of and potential exposure to synthetic pesticides used for cosmetic pesticides. Ontario, Quebec, Nova Scotia, and most recently Manitoba have passed dedicated laws to address pesticides for cosmetic uses, and 180 municipal pesticide bylaws exist across the country. The achievements accomplished by a number of provinces and municipalities throughout Canada are a sign of significant progress; however, headway still needs to be made in Canadian jurisdictions where cosmetic pesticide bans do not exist. British Columbia and Saskatchewan are jurisdictions with no bans⁴⁶. Jurisdictions such as Newfoundland and Labrador, New Brunswick, and PEI have passed weak regulations that could be strengthened and improved.



⁴³ All interviewees cited occupational health as an added benefit to pesticide bans; however, occupational health fits into the sphere of public health.

⁴⁴ See the Ecohealth Ontario initiative <http://www.ecohealth-ontario.ca/>.

⁴⁵ See the Winnipeg Humane Society: <http://www.winnipeghumanesociety.ca/animal-issues/ban-on-cosmetic-pesticides>.

⁴⁶ Interviewees stated that political factors must be taken into account when advocating for a provincial pesticide ban as well as cultivating beneficial relationships within a Government. For example, as stated in section 3.2.8, British Columbia recently conducted a review of its provincial pesticide legislation; therefore, pushing for a ban after a lengthy review process may not be the best time, politically, to push for a ban.

Despite the strength of some pesticide bans, there are still improvements that can be made to existing laws. Several interviewees stated that they would remove or phase out the **golf course** exception from provincial pesticide bans and bylaws. Currently, **golf courses** in the jurisdictions examined are able to apply pesticides in perpetuity. The DSF and Équiterre report provided the example of Denmark as a model jurisdiction that has agreed to phase out the use of pesticides on **golf courses** and increase educational initiatives surrounding safe alternative methods to them (DSF and Équiterre, 2011).

Some interviewees also stressed the need for improvement in managing the sale of restricted pesticides sold for exempted uses (e.g. management of poison ivy). The issues documented in Nova Scotia and recent issues with the new Manitoba cosmetic pesticide ban coming into effect (see footnote 38) demonstrate problems at the point of sale of restricted products. With staff turnover over the regular course of time, and seasonal employees, it is possible for the required sales practices within a jurisdiction not to be utilized. Annual random audits for stores selling restricted pest control products could be used to educate retailers and increase compliance. A registry system could also be used to track sales and monitor trends and potential abuses. Consumers could be required to acquire permits when purchasing restricted pesticides to be applied for an exempted use. The system could also be set up to allow notification of nearby residences when and where a permitted application is to take place (DSF and Équiterre, 2011).

Addressing the sale and use of cosmetic pesticides for indoor environments was another improvement that was consistently recommended by interviewees. As mentioned above, no jurisdiction other than Quebec addresses the use of pesticide indoors, and Quebec addresses it only in establishments frequented by children.

Agricultural use of pesticides is a very important issue that should be addressed due to the health and environmental risks associated with them. However, there are different risk factors associated with these uses that go beyond the scope of assessing and managing the cosmetic use of pesticides.

S.5.1 - Quebec Pesticides Strategy

Quebec has proposed a new pesticides strategy that is directed at the agricultural sector, but it is also meant to readdress the high-risk pesticides that are used in urban environments on lawn and gardens. The goals of the strategy are to protect

- population health, by increasing restrictions on the use of pesticides on plants (lawns, trees, and shrubs) in urban areas—especially in public parks;
- the health of farmers, by improving the supervision of high-risk pesticides used for agricultural purposes;
- pollinator health, by reducing their exposure to neonicotinoids; and

- the environment, by limiting the risk of contamination through pesticide use (MSDEFC, 2015).

The strategy, if implemented, will employ a hazard-based approach that is meant to target the most hazardous pesticides for human health and/or the environment. It will not be based on the quantity used. Two examples of pesticides that would be targeted are atrazine and chlorpyrifos. These chemicals represent less than 5% of pesticide sales in Quebec; however, there are significant health and environmental risks attributed to their use (MSDEFC, 2015). Using this hazard-based approach, Quebec is aiming to achieve the following objectives:

- to require that the agricultural application of the most toxic pesticides be justified by an agronomist in advance in 100% of cases;
- to triple the number of pesticides that are banned in urban environments for both lawns and green spaces;
- to authorize the unrestricted sale of all biopesticides by all retailers;
- to oblige the owners of **golf courses** who use the greatest amounts of pesticides to reduce their use of highest-risk pesticides by 25%; and
- to encourage the application of least toxic pesticides through economic incentives (levies, permits, and compensation fees) (MSDEFC, 2015).

These changes would be made with updates to the Province's Pesticide Act, with amendments to the Pesticide Management Code, and with economic incentive guidelines that would have users of high-risk pesticides assume greater proportions of the costs associated with environmental and public health impacts (MSDEFC, 2015).

S.6 - Best Practices

Several key concepts can be ascertained from the number of provincial laws and municipal bylaws reviewed in this report. Based on the responses provided by interviewees, the following concepts are considered to be very important when a jurisdiction attempts to reduce the sale and use of cosmetic pesticides:

- 1) **Combining Legal Instruments, Enforcement and Education:** Experience indicates that pesticide bans are more effective when a legal mechanism (provincial law/municipal bylaw) is combined with an educational program. The C2P2 report (section 4.3) demonstrates the effectiveness of a pesticide bylaw when there is a legal instrument in place, enforcement, and a concerted education effort undertaken to help citizens transition from practices using cosmetic pesticides to pesticide-free practices.

- 2) **White lists:** Regulations and bylaws structured around a white list that includes only those pesticides that satisfy specific criteria designed to ensure that a pesticide is safe for cosmetic purposes are considered most protective⁴⁷. Ontario, Nova Scotia, and Manitoba (to an extent) are jurisdictions that structure their cosmetic pesticide regulations around a white list. Municipalities such as Toronto (now inactive), Peterborough (now inactive), and Halifax, among others, also include provisions that only permit the use of enumerated allowable pesticides that are considered low risk and safe to use for cosmetic purposes.
- 3) **Broad Scope of Coverage:** Scope of coverage should be broad in order to fully restrict pesticides used for cosmetic purposes. Jurisdictions such as Ontario and Nova Scotia have broad prohibitions that ensure the pesticides cannot be used for any landscaping purpose. Conversely, New Brunswick, Newfoundland and Labrador, and Manitoba, for example, have a more limited scope of prohibition that generally applies to lawns only. Many municipal bylaws reviewed in this report contain a broad prohibition that restricts the use of cosmetic pesticides within the territory of the municipality.
- 4) **Narrow Scope and Control of Exceptions:** Interviewees agreed that exceptions incorporated into a pesticide ban should be focused on the protection of public health. They also agreed that broad exceptions can erode the strength of a prohibition. A primary example found in the vast majority of provincial laws and municipal bylaws are exception made for **golf courses**. Other examples found in bylaws include provisions that relate to the maintenance of public lands (e.g. Hamilton) or exceptions for individuals to apply minor applications of pesticides every 24 hours (e.g. Calgary). Where exceptions are allowed, it is recommended that permitting processes be put in place to ensure that pesticides procured are applied for permitted purposes only.
- 5) **Intergovernmental cooperation:** Most of the key informants agreed that a province's cosmetic pesticide law should be the floor for cosmetic pesticide regulation. A province should allow the option for its municipalities to go beyond a provincial law to provide additional protection from cosmetic pesticides to its citizens as long as the municipal bylaw is consistent with the provincial law.

⁴⁷ See Ontario for an example in the *Pesticide Classification Guidelines*.

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Appendix:

Survey Questions Used for Key Informant Interviews

Topic: LAW/BYLAW STRUCTURE and CONTENTS

- Q1:** What principles should a political/regulatory body incorporate into a pesticide ban? What are the best ways to incorporate these principles into the operative provisions of a pesticide ban?
- Q2:** What provinces and/or municipalities have the strongest and weakest pesticide ban laws/bylaws? Generally – what makes them strong/weak (e.g. broadness of prohibition? Legal mechanisms to list allowable pesticides? Exemptions? Etc...)?
- Q3:** When implementing a pesticide ban, what are acceptable exemptions that a law/bylaw permit? Can you think of examples of exemptions from laws/bylaws that can undermine a pesticide ban?
- Q4:** Does Integrated Pest Management (IPM) have a role in the structure/implementation of a pesticide ban? What are the ways IPM can undermine a pesticide ban? What conditions should be present so that IPM does not undermine a pesticide ban?

Topic: IMPLEMENTATION

- Q5:** In order for a pesticide ban law/bylaw to be the most effective, what is an optimal/ideal way to implement a law/bylaw? (e.g. education campaigns? Monitoring? Enforcement?) Differences between province and municipality? Differences between large vs small municipalities?
- Q6:** What are the biggest barriers in implementing a pesticide ban? Are these barriers region based (i.e. Pacific, Central, or Atlantic Canada) to some extent?

Topic: EFFICACY

- Q7:** What assessment tools exist to assess the efficacy of a pesticide ban? Are there tools that are not in use today that should be used? Are there suitable proxies that can be used? Are you aware of the efficacy of any pesticide bans that are currently in place or were in place (i.e. Ontario bylaws).
- Q8:** To your knowledge, what loopholes exist that allow individuals to circumvent pesticide ban laws/bylaws?
- Q9:** Besides the public health benefits of a strong pesticide ban, what are the other benefits (e.g. economic benefits) that can arise out of a pesticide ban?

Topic: IMPROVEMENT and FUTURE CONSIDERATIONS

- Q10:** What are ways cosmetic pesticide bans at either the provincial or municipal level can improve? What pesticide regulation/ban challenges still need to be addressed? Are there products/active ingredients that should be banned/restricted? Why? Are there education or enforcement mechanisms that can be improved on based on any lessons learned?
- Q11:** The Provinces of Ontario and Quebec are currently working to regulate agricultural pesticides. What agricultural pesticides do you think should be targeted and why? How can we ensure that requirements within proposed regulatory measures by the provinces do not become significant loopholes? (e.g. the use of agronomists to approve neonic use in certain circumstances) Do you envision municipalities playing a role in the regulation of agricultural pesticides?
- Q12:** Do you have anything else to add based on your experience that was missed in these questions?