September 11, 2012

Environmental Programs and Strategies Branch,
Manitoba Conservation and Water Stewardship,
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Re: CropLife Canada's submission to Manitoba's *Play it Safe* Pesticides Consultation

On behalf of Canada's plant science industry, CropLife Canada appreciates the opportunity to provide the Manitoba government with our written submission.

CropLife Canada is the trade association representing the manufacturers, developers and distributors of plant science innovations – pest control products and plant biotechnology - for use in agriculture, urban and public health settings. Our members represent approximately 98% of the pest control products sold in Canada. These companies have significant business interests in Manitoba and provide valuable tools that are a critical part of the value chain for Manitoba's agricultural, industrial vegetation and other sectors. For example, our products help to:

- Offer healthy foods to Canadians and the world's growing population
- Ensure secure energy transmission and safe rights-of-way
- Protect the environment and human health
- Enhance urban spaces, which in turn increase levels of physical activity and community pride

Nobody disputes that urban green spaces offer both physical and mental public health benefits, enhance the environment, and contribute to a strong and vibrant economy. What is often overlooked, however, is that urban green spaces are living ecosystems that are subject to insect, weed and disease pressures that sometimes require intervention if the ecosystem is to survive.

Our products provide valuable tools that can help protect these vital ecosystems, thus contributing to improved human health and a better environment. They are also among the most researched and highly regulated products available to Canadians.

We support a strong, science-based regulatory system for all pesticides and our industry ensures proper lifecycle stewardship through world-leading programs.

Canada's plant science industry supports the use of pesticides to address actual pest problems. This applies in any setting whether it be forestry, structural, golf, agriculture or lawns and gardens. The use of a pesticide to solve a pest problem in a lawn or garden is certainly not "cosmetic" or "unnecessary", therefore we are concerned about the ongoing characterization of these uses as such.

We are very concerned by suggestions that evidence exists to call into question the safety of pest control products that are extensively reviewed by Health Canada. If the Government of Manitoba or other groups possess information about unacceptable risks to the environment or human health, then these should be brought to the immediate attention of Health Canada officials for assessment so that all Canadians can be protected.

In response to increasing public concern, and some municipal actions, the federal government did - with the support of its provincial counterparts - re-evaluate the eight most widely used lawn and garden products as a priority group beginning in 1999 to determine if further regulation regarding their use and sale was required. As a result, some uses were changed or restricted to further reduce any risk to the user, neighbours, or the environment. They also published, again in conjunction with the provinces, a brochure on integrated pest management (IPM) practices for lawn and garden use.

Furthermore, in 2006 a new *Pest Control Products Act* (PCPA) was brought into force. Canada is highly respected around the world for its rigorous science-based framework and this Act, which is up-to-date on every aspect of scientific risk assessment and evaluation and that takes into account the precautionary principle, is perhaps the most modern pesticide legislation in the world. The new Act has provisions for initiating special reviews, extra safety factors for vulnerable populations, and a fully transparent process for reviewing data and evaluation reports upon demand. The modern legislation and related regulations at the federal level are robust and offer many provisions that anyone can avail themselves of if they have concerns about the safety of any product.

The reality is that Canada has the most transparent process in the world. All of the data used by the PMRA is open to anyone who wishes to access it. PMRA's Reading Room, located in Ottawa, provides access to all of the research submitted as a part of the

assessment process. There anyone can inspect test data and evaluation reports used to register or amend a pesticide.

In Summary

Our industry is science-based and innovation-focused with extensive regulatory oversight through Health Canada.

We are extremely concerned and disappointed about the biased nature of the consultation document and the lack of formal involvement of Health Canada in this process.

Unscientific restrictions of pesticides undermine existing regulatory safeguards, stigmatize all uses of pesticides, and create additional unnecessary costs for local governments and school boards, businesses and homeowners.

CropLife supports a public education campaign in collaboration with other provinces and the federal government on proper use of household chemicals, including pesticides, to address any real or perceived misuse. As an industry, we welcome the opportunity to work with you to develop and distribute appropriate messaging.

We are committed to providing safe and effective products that protect the value of both private and public green spaces. We advocate for the proper use of our products and we believe in the rigorous process put in place at the federal level.

We look forward to working with Manitoba Conservation and Water Stewardship to discuss our concerns and develop a workable path forward.

If you have any questions regarding our submission please contact me at petellep@croplife.ca or 613-230-9881.

Thank you,

Pierre Petelle
Vice-president, chemistry
CropLife Canada

An Analysis of: Play it Safe. A Consultation on Cosmetic Lawn Pesticides

CropLife Canada Summary

This document reviews a consultation document, prepared by the Government of Manitoba, to solicit public input on the sale and use of cosmetic lawn and turf pesticides in the province. In particular we looked at the scientific and technical merit of the Manitoba document; evidence of bias in the conclusions and/or citations; and soundness of conclusions and interpretation.

In summary, we found extensive issues with this report. For example:

- Heavy bias throughout the document in favour of implementing a ban
- No primary literature citations
- Misrepresentation of data
- Unsubstantiated and inappropriate conclusions

This consultation document was prepared by the Government of Manitoba to solicit public input on the sale and use of cosmetic lawn and turf pesticides (22). In particular, it "*focuses on concerns about chemical compound cosmetic pesticides for lawns and children's playing turf*".

It can certainly be a challenge to provide balanced and unbiased information that offers the reader enough information to be helpful without attempting to influence their conclusions. Nonetheless, this is not a reason to ignore it. In fact, governments that are seeking input on a complex topic such as this owe it to the public to provide facts and arguments from both sides of the debate and let readers come to their own conclusions. This consultation document was biased and clearly written to influence public opinion in favour of a particular policy decision. As such, it violates the basic principles of the public consultation process (25, 26, 42) as well as the overwhelming body of scientific evidence against a ban (for example, see the Report of the Special Committee on Cosmetic Pesticides from British Columbia 8).

The pest control products industry strongly advocates for a science-based regulatory system and believes that public policy needs to be based on reality, not on fear and misinformation. Bans that ignore the scientific evidence that lies at the very foundation of existing federal regulations actually jeopardize the health and safety of the very communities governments say they are trying to protect.

This report is broken down into sections based on those used in the proposal document. This was a high-level review and is not exhaustive. In addition to our input on this topic, we have endeavoured to highlight some of the more egregious errors from each section of the report and have included citations where applicable.

What are Lawn Pesticides?

The document states that it is focussed on concerns about the use of chemical compound cosmetic pesticides on lawns and children's playing turfs; however, it is unclear the extent to which the provincial government is looking to pursue a ban. Citizens surely have a right to understand what uses would be covered by a ban and how this would affect them.

The use of the terms "cosmetic pesticides" or "non-essential pesticides" is misleading and reinforces the notion that these products exist purely to improve the aesthetic value of lawns or gardens. In reality, urban pest control products provide citizens with safe and effective methods to deal with a plethora of pest-related problems, many of which are unrelated to "*making the lawn look better*". For example:

- Controlling pests that transmit human diseases. For example, mosquitoes are known carriers of many diseases, including West Nile Virus, which is of considerable concern in both Canada and the USA. Pesticides are used to control mosquitoes.
- Controlling allergenic weeds, such as ragweed, that trigger hay fever and asthma in sensitive individuals.
- Controlling insect infestations that can rapidly destroy large areas of land (e.g., lawn grubs) and property (e.g., termites)
- Protecting ecosystems from invasive species
- Protecting valuable urban trees from damaging insects such Gypsy moth and Emerald Ash borer
- Protecting people from noxious weeds (e.g., poison ivy).
- Protecting properties from damage from termites.
- Controlling bed bugs
- Protecting power resources and travel corridors

Furthermore, healthy lawns help to protect the environment and enhance quality of life by:

- Reducing the amount of urban road wash and silt that would otherwise end up in our streams and lakes.
- Absorbing hazardous air pollutants, such as carbon dioxide and sulphur dioxide, in the urban environment.
- Acting as a wind break, which traps dust particles by slowing the air and allowing the particulate matter to settle out.
- Reducing surface temperatures by up to 24ºC relative to bare soil or concrete.
- Absorbing noise. When combined with trees and other landscaping, grass can reduce noise levels by 20 to 30 percent.
- Providing habitat for a large number of species, including pollinators and birds.

They also provide gardeners with safe and effective tools to control pests that can destroy fruits and vegetables. Broccoli, cauliflower, potatoes, and strawberries are just a few of the many fruits and vegetables that can be decimated by insects. At a time when many people are rediscovering home gardening, it makes little sense to take away the very tools that enable them to do so.

The consultation document states: "*Pesticides in the agriculture and forestry sectors, on golf courses, on sod farms or to control noxious weeds and invasive species, control mosquitoes or protect health may be the same pesticides that are used for cosmetic purposes, but they are not referred to as "cosmetic pesticides" and are not the subject of this consultation*." Presumably the Manitoba government is satisfied with the rigour of the federal pesticide regulatory process for these uses. It is therefore unclear, and not addressed in the paper, why they are dismissing Health Canada's review and approval of lawn pesticides.

How are Cosmetic Pesticides Currently Regulated?

Federal Regulation

The three-sentence summary of the entire federal regulatory system grossly misrepresents the federal government's oversight of pesticides in Canada. In fact, pesticides are among the most highly tested and stringently regulated substances in commerce (reviewed in 16).

The report fails to point out that before any pesticide is registered for sale or use in Canada, Health Canada's Pest Management Regulatory Agency (PMRA) conducts an independent assessment that reviews data from over 200 separate scientific studies. This assessment considers a multitude of different factors including:

- Any possible effects to humans including adults, teenagers, children, infants and embryos;
- Any possible effects on wildlife species such as birds, fish, insects or earthworms; and
- The rate and type of degradation in soil, water and air.

Furthermore, the PMRA scrutinizes data from field studies in order to determine how the pesticide behaves in the Canadian environment as well as the potential for human exposure under Canadian use conditions. These studies include:

- How fast it breaks down in the soil;
- Whether or not it leaches through the soil to water sources;
- Exposure of bystanders and spray applicators during mixing and use;
- Research to identify whether the pesticide actually controls the intended target pest and how the product works; and

- How the product is best used in terms of application rates water volumes, spray pressures, time of day, growth stage of the lawn/ornamental plant and growth stage of the target weed, insect or disease.

Provincial Regulation

This section does not address *how* provinces regulate pesticides, it simply provides a list of those that have imposed bans. It also fails to mention that, following a 10-month inquiry that included over 8,000 submissions and representations from dozens of different stakeholder groups, the British Columbia Special Committee on Cosmetic Pesticides concluded that "*based on currently available studies, the majority cannot justify disagreeing with the findings of the PMRA's comprehensive pesticide testing and re-evaluations*".

Furthermore, the committee stated that "*Committee members representing the majority are satisfied with how the PMRA registers and reevaluates pesticides and are confident with the scientific integrity of the federal processes. From our perspective, the scientific evidence does not, at this time, warrant preventing British Columbians from buying and using approved Domestic-class pesticides for lawn and garden care*".

The BC Committee reviewed the approaches used in other jurisdictions and noted that no other province had struck an all-party committee to investigate urban use or review the work and role of the PMRA (8). In contrast, the current process being employed by the Manitoba government does not provide an avenue for the federal experts to weigh in on the discussion or provide input. It is essential that the Manitoba government call on the expertise of PMRA officials before taking any action on this file.

Alberta has not enacted a ban on urban pesticides. The province restricted access to combined Weed-and-Feed products, effective January 1, 2010 (19), but made it clear that both products could still be purchased separately and applied safely. Similarly, in order to ensure that the pesticide is applied at the right rate, and only to those areas of the lawn requiring the pesticide, the PMRA made the decision to uncouple the fertilizer and pesticide components Canada-wide, effective December 2012 (35).

Furthermore, the Alberta Ministry of Environment has publicly stated that they have no intention of restricting the sale of pesticides beyond the prohibition of "Weed and Feed" combination fertilizer-herbicide products (13): "*Alberta Environment will continue to strongly support using science-based evidence and will not create restrictions or laws that conflict with the federal government, who we rely on for health and safety assessments. Restricting access to products that are designed and approved to be used safely conflicts with our assessment of the public's need for access to all tools available for controlling a variety of pests*."

Although New Brunswick and PEI have enacted bans of some domestic class products, these rules are limited to products containing 2,4-D, and some formulations (e.g., combined Weed-and-Feed products) or packaging varieties (23, 41).

It is apparent that, by providing a list of provinces that have enacted bans on urban pesticide use, the authors are attempting to sway public opinion in favour of implementing a similar ban in Manitoba. However, the authors fail to mention that none of these provincial bans is founded in science. Indeed, although Newfoundland and Labrador enacted a ban on 2012, the Minister of the Transportation has gone on the record to say that this ban was not made out of concerns for human health.[1]

Municipal Regulation

Again, just because another jurisdiction has enacted a bylaw does not mean the bylaw is valid or founded in good science.

In many areas, activists have used overwhelming scare tactics to manipulate public opinion and scare citizens into supporting policies that they would otherwise reject. This has resulted in ill-conceived bans that were founded in political rhetoric rather than scientific evidence. In many cases, these bans were enacted with no regard for the existing federal oversight and without consulting Health Canada officials.

Why is the Province Consulting on Cosmetic Pesticides?

The authors state that the Manitoba Roundtable for Sustainable Development has recommended a full ban on the basis of "*the presented information on human health, environment and the existing restrictions in provinces across Canada*". Since the consultation document lacks any citations it is not immediately apparent what information the authors might be referring to; however, it is assumed they are referencing a 2011 background paper recommending a provincial ban on cosmetic pesticides (30). This background paper heavily cites a 2004 report by the Ontario College of Family Physicians (OCFP) that has been widely discredited by independent scientists as well as international regulatory agencies. For example:

- The UK Royal Commission on Environmental Pollution sought an independent perspective from Dr. Michael Burr, Reader in Epidemiology at the University of Wales College of Medicine. He concluded that "*strong conclusions were being drawn from evidence that was of rather weak quality*" and, in his review, highlighted a number of significant limitations, including the lack of a meta-analysis of the primary studies; inconsistent and unclear treatment of review papers; insufficient attempts to address the issue of

[1] In an interview with Randy Simms of VOCM Newfoundland Radio on August 8, 2012.

publication bias; and over-interpretation of findings given the limitations of relevant studies (reviewed in 43).

- Following an extensive review by the committee Chair (14) as well as a panel of independent epidemiologists (48), the UK Advisory Committee on Pesticides (ACP) concluded (47):[2] "*discrepancies arise from serious flaws in the methods employed in the review. Most important are: its failure to take account of all or even most of the relevant epidemiological evidence, and the biases inherent in the way in which material was picked out for inclusion; inadequate attention to exposure characteristics and relevant toxicology when interpreting reported associations; and its superficial synthesis of evidence, which inadequately explores the impact of the strengths and weaknesses of individual studies. Overall, the ACP has concluded that the report does not raise any new concerns about pesticide safety that were not already being addressed, and does not indicate any need for additional regulatory action in the UK*."

- As part of the ACP review, epidemiologists at the Committee on Carcinogenicity of Chemicals (COC) were asked to review the findings of the 2004 OCFP report.[3] In a letter to the ACP, the COC epidemiologists concluded that "*the conclusions reached not supported by the weight of evidence presented*" (15).

- A review by Cantox Health Sciences found that the *"conclusions drawn in the OCFP report are biased due to the lack of completeness with which the review was conducted*". Cantox found that "*the OCFP authors did not adequately review the available epidemiologic studies of pesticides. Furthermore, the lack of any acknowledgement of Health Canada's role in preventing unacceptable risks when registering a product in Canada means that the conclusions drawn in the OCFP report paint a very distorted picture of the likelihood of pesticide-related health risks in Canada*" (12).

- Health Canada reviewed the report but found there was nothing in it to merit further regulatory action (33).

This Roundtable report also cites Statistics Canada data that indicate Manitobans use high levels of pesticides; however, it neglected to mention that Manitobans have the lowest rates of "routine use" and in fact lead the country in using pesticides only for pest outbreaks (46). Indeed, the Statistics Canada report explicitly states that "*Manitoba (41%) and Saskatchewan (42%) had the lowest proportion of households using pesticides as part of a regular maintenance routine.*

[2] UK Advisory Committee on Pesticides homepage: http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/acp
[3] Committee on Carcinogenicity of Chemicals homepage: http://www.iacoc.org.uk/

Instead, households in Manitoba and Saskatchewan preferred to use pesticides in response to pest problems, potentially minimizing pesticide use" (46).

"*The Manitoba government is seeking a more sustainable province with science-based strategic protections for both health and the environment*". PMRA employs over 350 scientists for the sole purpose of evaluating pesticides to ensure they can be used without posing a risk to human health or the environment. The expert opinions of these scientists are held in the highest regard by regulatory bodies around the world, and are surely adequate to meet the goals of the Government of Manitoba.

Are Cosmetic Pesticides Actually Dangerous?

First of all, the response provided to this question is unfair and clearly designed to bias the reader since almost any compound can cause harm if used incorrectly. The authors ignored the overwhelming body of evidence in support of the safety of pesticides, including a report, published by some of the world's leading authorities in cancer, which concluded that "*Given the lack of evidence linking pesticide exposure to human cancer risk, no cases of cancer can be attributed to either occupational or nonoccupational exposure to this group of agents*" (24).

The authors' response to this question also fails to acknowledge that each and every pesticide product on the shelf in Canada today has undergone a thorough scientific assessment by Health Canada prior to being approved and registered for use. As such, a ban would completely disregard the solid scientific evidence that the authors themselves acknowledge should be the foundation for public policy.

The authors state that any risk should be balanced with the positive benefits; however, they fail to identify any benefits associated with urban pesticide use. Pesticides protect trees, shrubs, grass and plants from insect and weed infestations. In turn, healthy plants and green spaces provide us with a variety of benefits including:

- Strong tree canopy in cities and towns provide a cooling effect, making people who live, work and play in municipalities more comfortable on warm days,
- Playing field surfaces that are safe for sports and recreation,
- Oxygen production and capture of carbon and urban pollution,
- Beautification of urban environments,
- Reduced noise pollution
- Attracts birds and other forms of wildlife

Furthermore, uncontrolled weed growth leads to significantly higher amounts of pollen in the air (e.g., ragweed pollen), which can cause breathing problems and discomfort for allergy sufferers

and people with asthma.[4] Without pesticides, green spaces are more difficult and costly to maintain (for example, see 13) and frustrated residents may turn to unregistered products with unknown health and environmental effects and questionable value, as has happened in Ontario (9). Homeowners may also resort to paving over valuable green spaces and losing the benefits of these important areas.

Who is Concerned about Cosmetic Pesticides?

The authors cite a list of stakeholders who have expressed concerns about pesticide use; however, it is important to note that none of these organizations are experts in toxicology, epidemiology, or risk assessment. The PMRA employs experts in all of these fields to conduct a full and exhaustive pre-market evaluation of each and every product; their collective expert opinion is surely more credible than these groups.

For example, the BC Committee heard from numerous organizations and "*assessed the claims made about the impacts of pesticide exposure on human health and weighed the links proposed by epidemiological data against the lack of proven causal relationships between pesticides and negative health outcomes. We are impressed with the passion and sincerity with which the arguments in favour of a ban were made. However, we are not convinced that currently available scientific research provides a basis for disagreeing with the science-based evaluations made by the PMRA*".

The 2012 OCFP report (44) is a follow-up to the earlier report, published in 2004 (45). As discussed earlier, the 2004 report was widely discredited by Canadian and international scientific communities; several prepared materials in response to statements and recommendations by the OCFPR that were unsupported by scientific weight of the evidence, and to clarify their roles in the protection of human health and the evaluation of risks associated with pesticide exposures (for example, see 6, 12, 14, 15, 17, 33, 43, 47, 48). The 2012 report appears to suffer from many of the same limitations as its predecessor; fundamental flaws in the methodology, analyses, and conclusions that render the findings questionable.

It is worth noting that a section outlining organizations opposed to a ban is not included in this consultation document. For example, the Manitoba Canola Growers Association has been advocating against a ban because "*it will foster the spread of weed seed to cropland from urban areas, rural acreages and municipal property*" (2).

Keystone Agricultural Producers president Doug Chorney said "*Our industry has also supported a science-based-approach to regulatory change. We think that it's something that the government is*

[4] Although not yet formally studied, anecdotal evidence suggests an increase in seasonal allergies in Ontario since the ban was enacted. For example: http://www.thepeterboroughexaminer.com/2009/09/05/feeling-stuffed-up

not doing with this process here today. We also feel that there will be an impact to agricultural producers due to the spread of weeds and production" (28).

John Johnston of the Manitoba Weed Supervisors Association said "*A lot of the urban areas can be a sinkhole for the development of invasive weeds… Common tansy, purple loosestrife, oxeye daisy, they're all escaped ornamentals…. So if they're not controlled in the urban areas and the smaller communities, they quickly become a seed bank to spread (the species)"* (quoted in 3).

The Association of Manitoba Municipalities has publicly opposed the introduction of a cosmetic use pesticide ban because of its effect on weed control efforts in both rural and urban areas (5). Doug Dobrowolski, President of the Association of Manitoba Municipalities said "Farmers that farm around the schoolyard are all mad because nobody is spraying the dandelions and the weeds are all blowing into their fields… You're seeing this right across the landscape" (quoted in 3).

Do Studies Show that Certain Populations are more at Risk than Others?

This section fails to mention that the Pest Control Products Act (20) explicitly acknowledges the existence of sensitive subpopulations and addresses the increased sensitivities of these groups through the application of safety factors during the risk assessment process (39, 40).

In order to accurately predict the levels of exposure that individuals might experience, the PMRA reviews a number of different exposure studies. They also specifically consider differences in behaviour patterns and biology between sub-populations including toddlers, children, adolescents, and pregnant women. Of note, one specific scenario that the PMRA accounts for are infants or children playing on a treated lawn or playing field (37, 38).

Under the provisions of the Pest Control Products Incident Reporting Regulations (21), any incidents that might be associated with the use of a pest control product must be reported to the PMRA (36).[5] From April 2007 until August 2011, the PMRA received 387 reports of Canadian human incidents involving acute exposures to pesticides, of which 81% involved minor symptoms that resolved rapidly (29).[6] Just 9% of these reports involved children under the age of 6. Although the PMRA IR system is arguably not perfect, it is hard to reconcile the glaring difference between these numbers and those purported by the David Suzuki Foundation, which reports more than 6,000 cases of pesticide poisonings are reported in Canada each year (10). It is also curious that the authors chose to cite the Suzuki report without so much as mentioning the federal incident reporting program.

How do Pesticides Affect the Environment?

[5] An incident is an effect that relates to the health or environmental risk of a pesticide.
[6] It's also worth noting that submission of an IR to PMRA does not confirm an association between the pesticide and the effects reported.

Through responsible use and good stewardship, pesticides can be applied without posing an adverse risk to the environment. As evidence for this, Environment Canada monitoring data indicate that detected levels are well below those prescribed by the Guidelines for Canadian Drinking Water Quality (where applicable) (18).

The authors note that the province's monitoring program rarely detects the majority of pesticides that are analyzed and those that are detected are usually within the guidelines for the protection of aquatic life. These data indicate that pesticide use in general in Manitoba is not adversely affecting the environment.

The authors fail to mention that the PMRA evaluation of a pesticide includes a comprehensive evaluation of both hazard and environmental fate in order to understand what risk it might pose to non-target land and water organisms. The extensive body of testing data that the PMRA requires includes mandatory field tests in specific Canadian climate zones. Environmental data are used to determine a No Observe Effect Concentration (NOEC). Only pesticides that have predicted exposure levels lower than the NOEC are considered for registration (39).

If Health Canada Approves Pesticides, What's the Problem?

A primary objective for the PMRA is to prevent unacceptable risks to human health or the environment from the use of pest control products (31). The PCPA explicitly incorporates the Precautionary Principle (20) (a process that is incorporated throughout the entire evaluation process):

"*Precautionary principle: 20 (2) Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent adverse health impact or environmental degradation*."

The PMRA will only register a pesticide if, following a review of an extensive package scientific data, it can conclude that there is "*reasonable certainty that no harm to human health, future generations, or the environment will result from exposure to or use of the product, taking into account its conditions or proposed conditions for registration* (20)." Judgment of acceptable risk is defined using a comprehensive set of toxicology and exposure data, precautionary and conservative test assumptions, and the application of uncertainty factors (39). In a written submission to the BC Special Committee, PMRA noted that this level of precaution exceeds that prescribed by the Precautionary Principle as defined by the Rio Convention (8).

If Cosmetic Pesticides Were Restricted, Will My Lawn Become Covered in Weeds and Seeds Drift?

Banning pesticides will not make lawns "chemical free" since homeowners will continue to be able to apply fertilizers and so-called organic pesticides, both of which are chemicals. All pesticides, whether they are conventional or organic, are evaluated by the PMRA, which again raises the question of why the Manitoba government would be satisfied with the rigour of the federal regulatory process for one type of pesticide but not the other.

Furthermore, homeowners who are frustrated with the lack of effective pest-control options may resort to purchasing products from neighbouring jurisdictions, including the United States or, more worryingly, concocting their own pesticides. For example, 42% of Ontario homeowners reported using pesticides left over from before the ban, 19% brought in pesticides from another province or the United States, and 13% developed their own mixture to kill weeds and/or insects (9).

The authors state that there are safer alternatives to cosmetic pesticides; however the experience of Ontario suggests that these products are not effective against many of the problematic pests that homeowners need to deal with (4, 9, 27). Indeed, 68% of homeowners in Ontario report having more weeds in their lawns since the pesticide ban came into effect and 49% would like to see the ban changed in some way or abolished (9).

The City of Edmonton recently published a report that included up-to-date statistics on the performance of pesticide-free control sites and considered opportunities to further advance the use of integrated pest management (IPM) approaches (13). This report looked at 45 parks and school sites that were designated "herbicide-free" by the City Council in 2004. Five of these sites were excluded in 2007 because of turf damage and extreme weed growth.[7] The report found that, over a seven year period, almost 75% of sites had increased amounts of weeds. Of note, the study found that weed density was strongly affected by proximity to weedy areas. This observation has direct implications for the impact of a province-wide ban on the use of urban pesticides to control weed infestations.

The authors correctly acknowledge that Health Canada advocates for the adoption of integrated pest management practices (IPM) (for more information, see 32);[8] however, they fail to note that the pesticide industry as a whole also believes that IPM is the best approach. The pesticide industry believes that when a pesticide is required, only thoroughly assessed and highly regulated products should be used. If homeowners do not have ready access to these products, data indicate that they will seek alternate approaches that include importing products from other

[7] A further four sites were excluded for inconsistent data collection.
[8] Between 2001 and 2006, Health Canada, in partnership with provincial and territorial governments, developed the Healthy Lawns Strategy for Urban Pesticide Risk Reduction.

jurisdictions and mixing their own pesticides (4, 9).[9] The issue of homemade pesticides is particularly worrying since these products have not undergone any scientific evaluation, do not have label instructions, and can pose significant human health and environmental dangers (34).

What other options are there for getting rid of weeds without using cosmetic pesticides?

The report indicates that organic lawn care is increasingly popular internationally; however, it fails to acknowledge that organic is not a synonym for "chemical-free" nor is the use of the proposed techniques always adequate to maintain a healthy and robust lawn.

For example, the City of Edmonton study found that a strong and healthy turf can help reduce weed density (13), a finding that corroborates earlier work on this subject (reviewed in 11). Nonetheless, 75% of the herbicide-free sites in Edmonton had increased weed coverage (13). It's worth noting that the Edmonton study reviewed the impact of existing bans in other jurisdictions and reported that sod replacement may be emerging as a primary (and costly) alternative to conventional turf herbicides.

The authors suggest that there are a number of eco-friendly alternatives that "*are becoming increasingly popular and may be safer than traditional chemical pesticides*". They also state that "*organic insecticides and herbicides are now widely available".* In stating this, the authors are perpetuating a myth that organic is safer when in fact many studies indicate that the toxicology of synthetic and natural pesticides is similar (for example, see 1, 7). As mentioned above, the PMRA evaluates all products that make pesticidal claims, including those categorized as "organic". Why the Manitoba government would find this process acceptable for one type of pesticide but not another is unclear.

Furthermore, homeowner surveys in Ontario indicate that since the ban came into effect there are insufficient options to address pest-related issues and an overwhelming majority feel that there is a need for new, more effective weed and insect control products (9). Of note, even individuals who never used pesticides before the ban (and thus don't have a benchmark for comparisons) feel the products that are currently available are ineffective (9).

The authors cite IPM in this section and acknowledge that pesticides have a role within an IPM approach; however it is unclear how the authors would reconcile this in the event that a ban on pesticide use were enacted in the province.

[9] The CBC has even published a list of do-it-yourself pesticide recipes: http://www.cbc.ca/news/background/pesticides/recipes.html

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