ACME CAPE
Association Canadienne des Médecins pour l'Environnement
Canadian Association of Physicians for the Environment

Steven Snell, MRes, MCIP, RPP
Conservation Policy Team Lead, City of Calgary
Floor 7, Calgary Public Building: 205 - 8th Ave SE
P.O. Box 2100, Station M #54,
Calgary, AB Canada T2P 2M5

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Dear Mr. Snell:

Re: Calgary Pesticides Policy

Thank you for the opportunity to offer CAPE's thoughts on the health concerns associated with pesticides used on lawns and gardens and on the policies to be applied to pesticides used in the City of Calgary. While the City is currently examining its corporate policy for the use of pesticides on City-owned lands, some of our comments address municipal policies that can be applied to the use of pesticides on private property within the City.

By way on introduction, let me explain that CAPE is a non-profit organization that was established over two decades ago by physicians who understood the profound way in which the environment can impact human health. To this day, CAPE is run by a Board composed mostly of physicians and is supported by volunteer physicians in provinces across the country. We have a long history of work on pesticides.

Regulation of Pesticides in Canada

While the federal government has responsibility for the registration of pesticide products that can be used in Canada, provincial and municipal governments have gotten involved in the regulation of pesticides, particularly pesticides used for cosmetic purposes (i.e. on lawns, gardens and on greenspace), in response to health and environmental concerns associated with their use.

At the federal level, the Pest Management Regulatory Agency (**PMRA**), a branch of Health Canada, is responsible for registering pesticides using under the authority of the Pest Control Products Act (**PCPA**). Once a pesticide 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 product label. There is however little or no monitoring or enforcement of those regulations or of product use. There are also a number of serious health and environmental concerns associated with pesticides that have been registered for use. Many believe that the PMRA's process does not adequately protect the health of citizens or Canada's ecosystem. In 2015, the Commissioner of the Environment and Sustainable Development identified a number of concerns with the pesticide approval process run by the PMRA. For example, the Commissioner found that the PMRA: has been moving too slowly when re-evaluating

pesticides that have been on the market for more than 15 years; 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 (**OECD**); and has not moved quickly to cancel registrations for some pesticides when reviews demonstrate that they do pose "unacceptable risks" (Commissioner of the Environment and Sustainable Development, 2015).

For these reasons, provincial and municipal governments have gotten involved in the regulation of pesticides to limit their use, particularly when they are being used for cosmetic purposes. In this realm, provincial governments have the power to regulate both the use and sale of pesticides within their jurisdictions, while municipalities have the power regulate the use of pesticides within their municipal boundaries. Despite the limitations on these powers, many provinces and municipalities have implemented pesticide laws that have effectively limited the use of toxic pesticides with strong public support.

Health Concerns associated with Pesticides

Toronto Public Health, Health Review, 2002: The health concerns associated with pesticides have been well established. In 2002, Toronto Public Health (**TPH**) conducted a systematic review of 300 pesticide health 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 occupational studies suggested that pesticides can moderately increase the risks for some cancers, some reproductive effects, and some neurological effects. A limited number of studies directed at children suggested that pesticides can moderately increase the risks of some cancers (leukemia, non-Hodgkin's lymphoma, and neuroblastoma) and some birth defects among children who are exposed around conception, in utero, and in early postnatal life (**TPH, 2002**).

Canadian Family Physician, Cancer Review, 2007: 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. This review excluded organochlorine pesticides that are no longer used in Canada. The review found that pesticide exposures were associated with the development of some cancers, particularly brain, prostate, and kidney cancers, as well as non-hodgkin's lymphoma and leukemia. The reviewers 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.

Ontario College of Family Physicians, Non-Cancer Review, 2012: 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 associated with pesticides after 2003. This study identified and reviewed 142 high-quality studies. Organochlorine pesticides were excluded from this study as well. The reviewers found evidence that pesticides may cause deleterious reproductive outcomes. The strongest correlation was for low birth weights among infants – a condition which is associated with greater risks of death, disease, and disability in infancy and childhood, and long-term adverse health outcomes in adult life. In addition,

it found that prenatal pesticide exposures were consistently associated with measurable deficits in the neuro-development of children across a wide range of ages from birth to adolescence. The reviewers 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 reviewers also 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. They concluded that there is a 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 (OCFP, 2012).

Chief Public Health Office, Prince Edward Island, Health Impacts, 2015: In 2015, the Prince Edward Island Chief Public Health Office produced a systematic review of the health literature related to pesticides. Over 340 peer-reviewed studies, published between 2004 and 2015, were reviewed in this study. The reviewers found that pesticide exposures were associated with reproductive outcomes such as cleft pallet, congenital defects, neural tube defects, and gastrochisis in children. They also found that pesticides are associated with neurological effects. They found evidence linking pesticides to increased rates of Parkinson's disease, Amyotrophic Lateral Sclerosis (ALS), abnormal reflexes in newborns, depression, Alzheimer's disease and other mental health conditions (Chief Public Health Office, 2015). The authors found good evidence that pesticide exposures are associated with non-hodgkin's lymphoma (NHL), LHC (Langerhans cell histosis), some types of leukemia, and cutaneous melanoma among adults. They found that there was good evidence that pesticide exposures were associated with lymphoma, brain cancer, Ewing's sarcoma, neuroblastoma and leukemia in children. This review also found moderate evidence to support associations between any pesticide exposure with brain cancers, gastrointestinal cancers, lung cancers, and cancers of the reproductive tract, among others. The reviewer recommended that steps should be taken to reduce the use of, and exposure to, pesticides for the general population and vulnerable groups, such as pregnant women and children (PEI, 2015).

Specific Pesticides and Groups of Pesticides: A large number of health and environmental studies have also been directed at specific pesticides such as glyphosates and on groups of pesticides such as neonicitinoids and pyrethroids. I have attached CAPE backgrounders which summarize the health and environmental concerns associated with glyphosates, neonicitinoids and pyrethroids.

Provincial and Municipal Laws directed a Cosmetic Pesticides

In 2016, CAPE conducted a review of provincial laws and a number of municipal by-laws that have been adopted across the country to limit the cosmetic use of pesticides. That report, which can be downloaded at https://cape.ca/wp-content/uploads/2016/08/Pesticides-Policy-Report-FINAL.pdf, found that, at present, seven provinces and 180 municipalities have laws that prohibit the use of some pesticides for cosmetic purposes on private property within their jurisdictions. Alberta is one of only three provinces that does not have a provincial law prohibiting the use of toxic pesticides on lawns, gardens and greenspace.

Because there are hundreds of pest control products on the market, many jurisdictions ban cosmetic pesticides based on active ingredients. Most provinces have created 'black lists' that identify the active ingredients that are

prohibited from being used or sold for cosmetic purposes. Provinces such as Ontario, Nova Scotia and Manitoba have created 'white lists' that identify the pesticides that are allowed to be used for cosmetic purposes. In these cases, a new pesticide ingredient cannot be used for cosmetic purposes unless the manufacturer proves that it meets the criteria identified in the law. In Ontario, for example, pesticides can only be added to the "white list" if 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; and they have been widely available to the public for other uses for some time (CAPE, 2016).

Most laws banning the cosmetic use of pesticides identify exceptions where the prohibited pesticides are allowed to be used. The exceptions that are commonly found in municipal laws apply to pesticides used to: protect public health and safety from animals that bite, sting, or carry disease; control plants that are poisonous to humans by touch (e.g., poison ivy); control plants, animals, or fungi that pose a risk to a building or structure; purify water and disinfect swimming pools; treat golf courses and lawn bowling greens; manage pests in indoor environments; manage agricultural land and agricultural farmhouse property; and sports fields and specialty turfs (CAPE, 2016).

While Integrated Pest Management (**IPM**) is recognized as a sound practice in principle, there are concerns that the practice can allow the use of toxic pesticides more frequently than they are required. Many believe that the principle underlying the practice can be realized more effectively with policies that clearly circumscribe what pesticides can be used and under what circumstances. Experience in provinces such as Ontario, where prohibitions have been in place for several years, has indicated that toxic pesticides are needed far less often than commonly thought by residents and park managers (CAPE, 2016).

Provincial and Municipal Laws have been Effective

Evaluation studies conducted on municipal and provincial laws prohibiting the cosmetic use of pesticides on private property have found that they can effectively reduce the use of pesticides and the levels of pesticides circulating through the environment:

- A Toronto study found that the use of pesticides on lawns by residents decreased by approximately 57% after Toronto implemented its municipal bylaw (TPH, 2009); and
- In Ontario, the provincial law prohibiting the use of pesticides on private property significantly reduced the concentration of common active ingredients in water bodies. Post-ban measurements revealed significant decreases in the concentration of 2,4-D (by 81%), dicamba (by 83%), and MCPP (by 81%) in water bodies. Glyphosate and carbaryl levels, which are used more in agricultural settings, showed no significant changes (Todd, 2011).

Strong Public Support for Ban on Pesticide Use on Lawns

We have found that there is a strong appetite for action on cosmetic pesticides within Alberta. In August 2016, CAPE in partnership with several other organizations, contracted OraclePoll Research to conduct an opinion poll in Alberta to determine the level of support for action on pesticides used for lawns and gardens. For the survey, 1000 Albertans were interviewed providing results that are considered accurate 19 times out

of 20. The poll found that nearly 7 out of 10 Albertans believe that cosmetic pesticides pose a threat to the health of their children and their pets. It also found that 62% of Albertans would support a provincial law that "phases out the use and sale of all but the safest pesticides for lawns and gardens in Alberta" (https://cape.ca/wp-content/uploads/2016/10/Press-Pest-AB-Poll-Oct-2016-Final.pdf).

Conclusions:

There is a robust body of evidence which demonstrates that pesticides can be harmful to human health, particularly to the most vulnerable members of our communities. Systematic reviews of health studies directed at pesticides, conducted by public health authorities, the Ontario College of Family Physicians, and researchers have identified links between pesticides and a variety of cancers, neurological health impacts, reproductive effects, and respiratory conditions. These reviews have found that children are most vulnerable to the adverse effects of pesticides during pregnancy and early in life. We know that pesticides used on lawns, gardens and greenspace can be tracked into homes on shoes and clothes. We know that children can be exposed to pesticides by getting them on their skin, in their mouths, and by inhaling them.

Over 230 municipalities (counting the bylaws in Ontario that were superceded by the provincial law) have phased out the use of pesticides on corporate property and then implemented bylaws phasing out their use on private property across their jurisdictions. They have done so because most people agree that the potential for harm outweighs the need for perfects lawns and gardens. The few evaluation studies that have been done have demonstrated that these bylaws can be very effective at reducing the use of pesticides, and thereby reducing the potential for exposure to pesticides.

Yours truly,

Kim Perrotta

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