

PESTICIDE TOXICITY REPORT

EXECUTIVE SUMMARY

A Motion Arising at the 2016 November 07 meeting of Council directed Administration to evaluate pesticide toxicity. The Motion was to inform the review of the Integrated Pest Management Plan with the aim to eliminate the use of the more toxic pesticides on City land.

Administration's key findings are summarized in this Committee report. The full review is the attached Pesticide Toxicity Report. The report background includes key findings for: pesticide definition; legislative authority to regulate and evaluate pesticides; the three-tiers of government regulations that reduce pesticide exposure risk; positions of relevant professionals and public health advocates; and current City practices and pesticide use data. Report recommendations are based on the findings.

The findings of the report include: a division of Health Canada evaluates and regulates the use of pesticides to prevent unacceptable risks to individuals and the environment; The City of Calgary does not have the authority to evaluate pesticide toxicity; reducing exposure to pesticides is the basis to the safe and low-risk use of pesticides; under federal and provincial regulations The City further reduces pesticide exposure risk through the Integrated Pest Management Plan; when pesticide use is warranted the least toxic most effective pesticide product is selected; The City must improve communications and public reporting of pesticide use and application rationale. Finally, The City's compost program might present new opportunities in plant health care.

Based on the findings summarised in this report, Administration will update the Integrated Pest Management Plan and Policy by 2018 Q4 to align with current Council policy and best practices in invasive species and pest management. Administration will commit to annually reporting on current pest management practices, and to enhance communications on pesticide use and alternative pesticide trials undertaken.

ADMINISTRATION RECOMMENDATION(S)

That the SPC on Community and Protective Services recommends that Council:

1. Receive this report for information; and
2. Direct Administration to use the attached Pesticide Toxicity Report to inform the update to the Integrated Pest Management Plan and Policy.

PREVIOUS COUNCIL DIRECTION / POLICY

At the 2016 November 07 meeting of Council, a Motion Arising, moved by Councillor Pincott, seconded by Councillor Farrell, directed Administration to evaluate pesticide toxicity as part of the Integrated Pest Management Plan review, with the goal of eliminating the more toxic pesticides from use on city land. In the review, Administration was to include members of the public who are health professionals or from health organizations and return to City Council, through the SPC on Community and Protective Services, no later than 2017 Q2 on the progress made.

BACKGROUND

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In order to address Council's direction regarding pesticide toxicity, Administration reviewed the definition of "pesticide," as well as the federal, provincial and municipal regulatory context for pesticide use.

Pesticide definition

Health Canada is the federal body responsible for defining, evaluating, categorizing and regulating pesticides in Canada. The Health Canada definition of a pesticide/pest control product is:

Any product, device, organism, substance or thing that is manufactured, represented, sold or used as a means for directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest. Control products include active ingredients used in the manufacture of end-use products and the end-use products themselves. Includes herbicides, insecticides, fungicides, antimicrobial agents, pool chemicals, microbials, material and wood preservatives, animal and insect repellents, and insect- and rodent-controlling devices.

Overview of Regulatory Context

Health Canada deems that reducing pesticide exposure is foundational to the safe and low-risk use of pesticides. For pesticide use by The City of Calgary there is a tiered approach to cumulatively minimize exposure to pesticides:

- Federal regulations
- Provincial regulations
- City policy and procedures

The principal body for evaluating and regulating pesticides and their toxicity in Canada is the Pest Management Regulatory Agency (PMRA), a division of Health Canada. The PMRA performs toxicity studies to determine the nature and extent of the hazard posed by a pesticide proposed for use in Canada. Short-term and long-term exposure studies are performed. The PMRA regulates the use of pesticides through the federal Pest Control Products Act. Pesticides that pose unacceptable risk to individuals and the environment are not approved by the PMRA.

The risks associated with pesticide use are further managed at the provincial level. The provincial Environmental Protection and Enhancement Act and its Pesticide Regulation govern the sales, handling, use and application of pesticides in Alberta. The province provides a spectrum of pesticide classifications from agricultural/industrial, which must be applied by a professional, to domestic classifications such as skin-applied mosquito repellent. The City is legally obliged to adhere to federal and provincial pesticide regulations.

Pesticide risk is further reduced via The City's Integrated Pest Management Plan and Policy (1998). This plan directs City pest management options which may include hand pulling, mowing, the use of insects, livestock (goats), and/or pesticides. When pesticide use is warranted, the least toxic, most effective pesticide product is selected. Additional reduction of exposure risk occurs through public notifications of pesticide application and no-spray areas, such as tot-lots.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

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With the baseline definition and regulatory framework established, Administration undertook further research on pesticide toxicity exposure risk, and analyzed current City practices as well as data on private residential use of pesticides.

Pesticide toxicity exposure risk findings

Toxicity refers to the ability of a pesticide to cause short-term or long-term harm to an organism. The potential health risk a pesticide poses is a combination of its toxicity and exposure to the pesticide. When either toxicity or exposure to a pesticide increases, the risk of harm increases; therefore:

$$\text{Risk} = \text{toxicity} \times \text{exposure}$$

According to the PMRA, all products registered for use in Canada are considered to be of acceptable risk when used in accordance with the label. As mentioned previously, the province further limits risk by categorizing pesticides into four schedules: Schedule 1 is the highest risk and must be applied by a pesticide professional. Schedule 2 is lower risk and must be applied by a pesticide professional. Schedule 3 is lower risk than Schedule 2 and can be used by homeowners. Schedule 4 is the lowest risk and does not pose significant risks to individuals or the environment; these include domestic-use products such as mosquito repellent and hot tub disinfectants. Of the 35 pesticide products that The City used in 2016: 88% are Schedule 2, 6% are Schedule 3, and 6% are Schedule 4. No products are Schedule 1, which typically consist of fumigants and vertebrate toxicants.

Summary of expert engagement

Administration solicited feedback from professionals and public health advocates for their position on the use of pesticides and what strategies should be employed to eliminate the more toxic products. Responses were official, in that they represented the position of an organization, and unofficial, in that they were an opinion of an individual. Eighteen letters were received and stakeholder positions generally fell into two groups:

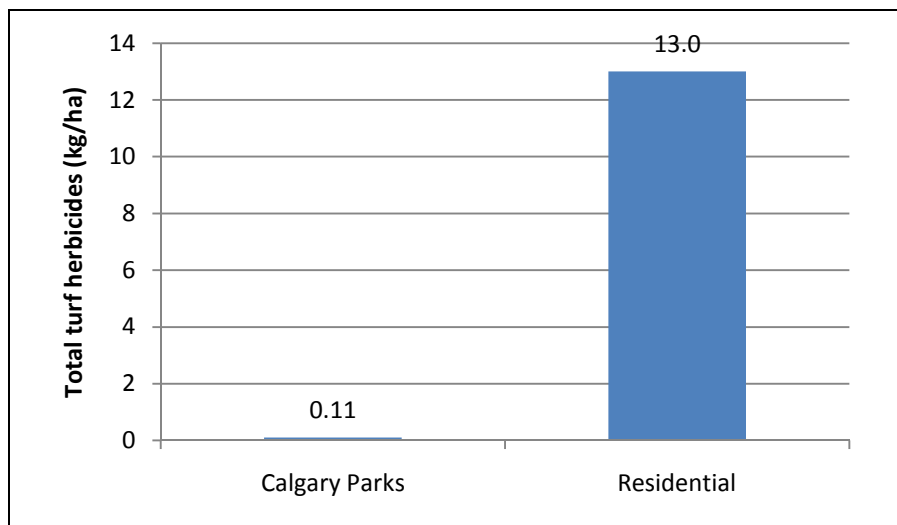
- Voluntary pesticide use restrictions: stakeholders support an integrated approach (judicious use of pesticides) to manage invasive species and pests within the legislative context of Health Canada-approved pesticides (9 letters); and
- Non-voluntary pesticide use restrictions: stakeholders support some degree of regulatory (non-voluntary) pesticide restriction (9 letters); for example, a pesticide use restriction City bylaw.

Pesticide use findings

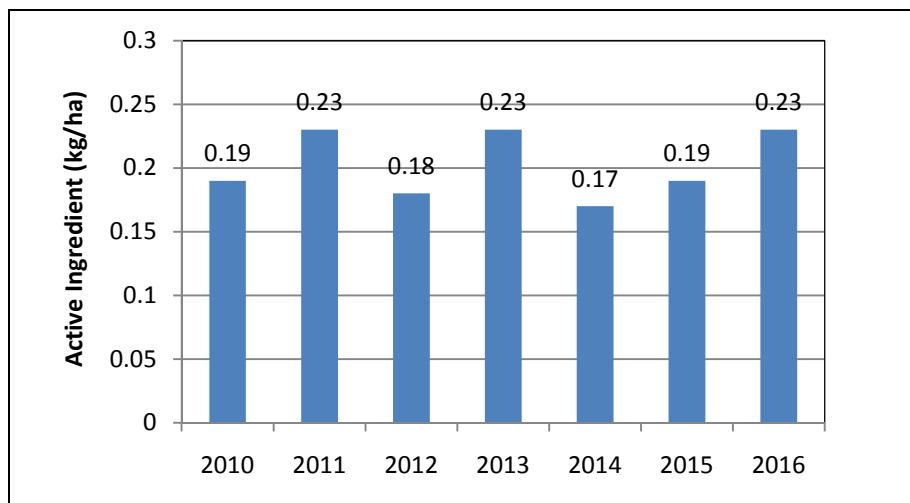
Intensity of pesticide use can be understood as either the total volume of pesticide applied per hectare or the total active ingredients applied per hectare. Active ingredients are components of pesticides that control the target pest; other ingredients improve the effectiveness of the product, such as binding the liquid to a plant.

In 2015, the province compared Calgary Parks' pesticide use to the private residential use of pesticides on turf grass (commercial application services were excluded). The City applied 0.11 kg/ha (1.57 oz/ac) of herbicides on turf; citizens applied 13.0 kg/ha (185.57 oz/ac) on private yards, as illustrated in the following figure:

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Pesticide use by The City extends beyond turf. Pesticides may also be applied to natural areas, trees, planting beds and hard surfaces. As illustrated in the following figure, at a City-wide scale, year-over-year use fluctuates between 0.17 kg/ha (2.43 oz/ac) to 0.23 kg/ha (3.28 oz/ac) of active ingredient, as illustrated in the following figure. Fluctuations over time result from changes in the area and asset quality of land owned by The City, pest management priorities and pest outbreaks, which may vary in severity according to weather (temperature, precipitation, etc.).



Conclusions and next steps

Based on the findings contained within this report, Administration asserts that the level of pesticide exposure risk to Calgarians from The City's use of pesticides is acceptable within the current regulatory environment. This finding is based on the federal and provincial regulations, the existing policies and procedures contained in the Integrated Pest Management (IPM) Plan and a review of the current intensity of pesticide application.

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However, through the development of Administration's report, preliminary gaps in The City's IPM program have been identified. Administration will use the findings to inform the IPM Plan update, as well as produce public-facing annual reports on The City's pest management program including pesticide use, trends, current standards and alternative product use trials. Additionally, The City's compost program may present new opportunities in plant health care.

In support of the Motion Arising and the upcoming IPM Plan update, Administration has completed the following tasks:

- Developed a project charter for the IPM Plan update that includes the identification of preliminary gaps and opportunities within the current program, a risk assessment of the update process, and criteria for background research; and
- Developed a strategy for stakeholder engagement and communications.

Stakeholder Engagement, Research and Communication

As per the Investigation section above, Administration solicited feedback and received eighteen letters from professionals and public health advocates for their position on the use of pesticides and what strategies should be employed to eliminate the more toxic products. These and other internal and external stakeholders will continue to be engaged through the update of the IPM Plan and Policy.

Strategic Alignment

This report is aligned with the following Council direction:

- Biodiversity Policy (2015)
- Integrated Pest Management Plan (1998)

Social, Environmental, Economic (External)

Social

Integrated Pest Management applies methods to ensure pesticide exposure is reduced through public notifications of pesticide application and no-spray areas, such as tot-lots.

Environmental

Maintaining the health of Calgary's parks and open spaces provides ecosystem services to Calgarians. The City applies an integrated approach that focuses on horticultural and mechanical pest management techniques, as well as pesticide use when warranted.

Economic

Effective management of Calgary's parks and open space assets reduces long-term budget impacts and positively affects the public realm and The City's image.

Financial Capacity

Current and Future Operating Budget:

No implications on current or future operating budgets.

Current and Future Capital Budget:

No implications on current or future capital budgets.

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Risk Assessment

A risk assessment is being performed via the Integrated Pest Management Plan update.

REASON(S) FOR RECOMMENDATION(S):

Council directed Administration to evaluate pesticide toxicity with the aim to eliminate the use of the more toxic pesticides by The City. Based on the findings contained within this report, Administration will continue to work with external and internal stakeholders to update best practices and increase communications on pesticide use and priorities for managing pests. The findings in this report will be used to inform the update to the Integrated Pest Management Plan.

ATTACHMENT

Pesticide Toxicity Report