2018 City of Calgary Pesticide Use

Background

In 2016, The City began to update its Integrated Pest Management Plan. Coinciding with this project was a 2017 Council report on the toxicity of pesticides used by The City of Calgary and its Civic Partners. In this report, Administration committed to publicly reporting its annual use of pesticides.

This document is a pilot project intended to test-bed presenting pesticide use by The City. The table in this document lists the 2018 pesticide products used, the amount used and the plant and pest species targeted. As the Integrated Pest Management update progresses, the project team will engage citizens and other stakeholders on the most effective way to publicly report on The City's use of pesticides.

Pesticide use

In addition to the many roadway medians and boulevards that line city streets, The City manages over 13,000 hectares of City-owned land. The City uses pesticides for:

- Weed management: e.g., those legislated to be controlled by the Alberta Weed Control Act
- Public property and asset protection: e.g., protecting public trees from insect infestation, public turf grass from fungi and broadleaf weeds and preventing invasive plant damage to critical infrastructure, such as storm ponds
- Public health and safety: e.g., rodent control on sports fields, controlling nuisance mosquitoes and those that may carry diseases (e.g. West Nile Virus)

Pesticide legislation

Pesticides in Canada are federally defined, categorized and regulated through Health Canada. Through the federal Pest Control Products Act, the Pest Management Regulatory Agency (PMRA) of Health Canada defines "pesticide/pest control product" as,

> 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.

Active ingredients are the components of a pest control product that act to control the pest. Each pesticide product has at least one active ingredient and may have other ingredients that improve the effectiveness or shelf-life of the pesticide.

There are three tiers of government regulations that relate to pesticide use in Calgary.

Federal regulations: 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. Health Canada is responsible for defining, evaluating, categorizing and regulating pesticides in Canada. Health Canada deems that reducing pesticide exposure is foundational to the safe and low-risk use of pesticides.

Provincial regulations: The provincial Environmental Protection and Enhancement Act and its regulations govern the sales, handling, use and application of pesticides in Alberta. These include the Pesticide (Ministerial) Regulation, the Pesticide Sales, Handling, Use and Application Regulation, and the Environmental Code of Practice for Pesticides.

City policy and procedures: The City's Integrated Pest Management Plan and Policy 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.

2018 Pesticide use

The following table contains the pesticides used by The City of Calgary and its Civic Partners in 2018. The table headings are:

- Product name: The official pesticide trade name.
- PCP#: The registration number assigned to the product under the Federal Pest Control Products Act.
- Active ingredient(s): The components of pesticides that control the target pest. There may be one or more active ingredients in any given product.
- Schedule: The Alberta Pesticide (Ministerial) Regulation Schedule that the product falls under. There are four schedules, which can be viewed on the Government of Alberta webpage.
- Total product concentrate: Total use of product in its concentrated form, as sold in product containers; some products may be diluted prior to application.
- Total active ingredient: Total active ingredient applied in proportion to its product concentration.
- Total application area: Total area (or alternative unit of measurement) the product was applied to.
- Active ingredient use intensity: The total active ingredient applied per total application area (or alternate unit).
- Reason for use: Example asset types and/or target pests that the product is used for. All permitted uses may be viewed on the product labels.

Product name	PCP #	Active ingredient(s)	Schedule*	Total product concentrate in L (or alternate unit)	Total active ingredient in kg (or alternate unit)	Total application area in Ha (or alternate unit)	Active ingredient use intensity in kg/Ha (or alternate unit)	Reason for use (example target pests and assets)
HERBICIDES: Controls weeds/plants								
2,4-D Amine 600 Liquid Herbicide	14726	2,4-D (present as dimethylamine salt) 564 g a.e./L	2	544.84 L	307.29 kg	343.84 Ha	0.89	To control Downy Brome (Noxious), Orange Hawkweed (Prohibited Noxious) and Caragana to restore natural area sites.
Garlon™ RTU Herbicide	29334	Triclopyr 144 g acid equivalent/L (present as butoxyethyl ester)	2	778.21 L	112.06 kg	10.22 Ha	10.96	To control, Common Barberry, Common Buckthorn (Prohibited Noxious), Cotoneaster and Caragana (invasive woody shrub previously regulated by the Alberta Weed Control Act) in Natural areas
Lontrel 360 Herbicide	23545	Clopyralid (present as the monoethanolamine salt) 360g/L	2	78.315 L	28.195 kg	87.4 Ha	0.32	Canada thistle, common Tansy (noxious); and other legislated species along the boulevards; noxious weeds in Park
Milestone Herbicide	28517	Aminopyralid (present as triisopropanolamine salt) 240 g/L	2	0.099 L	0.0238 kg	0.3 Ha	0.08	To control Canada thistle in Natural areas

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Nufarm Trillion Turf Herbicide	27972	2,4-D (present as dimethylamine salt) 190 g a.e./L, Mecoprop-P (present as dimethylamine salt) 100 g a.e./L, Dicamba (present as dimethylamine salt) 18 g a.e./L	2	3366.03 L	1036.737 kg	808.97 Ha	1.28	To control Broadleaf weeds in turf, along boulevards and playfields
VANTAGE™ XRT Herbicide	29994	Glyphosate (present as dimethylamine salt) 480 g/L	2	18.15 L	8.88 kg	0.432 Ha	20.55	All vegetation (e.g. yellow toadflax and Canada thistle); industrial; recreational, rights-of-way; and public areas and Caragana for restoration of Natural Area sites
VP 480	28840	Glyphosate (present as dimethylamine salt) 480 g/L	2	1166.75 L	560.04 kg	368.25 Ha	1.52	All vegetation (e.g. yellow toadflax and Canada thistle); industrial; recreational, rights-of-way; To control Purple Loosestrife (legislated as Prohibited Noxious weed) in Natural areas
‡Roundup WeatherMax® with Transorb® 2 Technology Liquid Herbicide	27487	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	0.804 L	0.286 kg	0.4 Ha	0.71	Non-selective weed control for annual and perennial grasses, broadleaf weeds, and woody brush and trees; turf grass renovation in public areas; removal of weeds on City golf courses
‡PAR III Turf Herbicide Solution	27884	2,4-D 190 g a.e./L, Mecoprop-P 100 g a.e./L, Dicamba 18 g a.e./L (All present as dimethylamine salt)	2	22 L	6.776 kg	3.99 Ha	1.69	Turf protection from broadleaf weeds in Calgary Zoo, Maple Ridge, Shaganappi golf courses
†StartUp Herbicide	29498	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	5.2 L	2.808 kg	1.2 Ha	2.34	Non-selective weed control for annual and perennial grasses, broadleaf weeds, and woody brush and trees; turf grass renovation in Calgary Zoo and McCall Lake Golf Course
INSECTICIDES: Control insect pests								
Safer"s TROUNCE Insecticide CONC	24363	Potassium salts of fatty acids 20.0%, Pyrethrins 0.2%	2	10 L	0.02 L	No data	No data	To control Insects on shrubs, landscape trees, greenhouse and interior plantings
Dragnet FT Emulsifable Concentrate Insecticide	24175	Permethrin 384 g/L (55% Maximum *cis*; 45% Minimum *trans*)	2	0.07 L	0.027 L	No data	No data	For control of carpenter ants and Wasps in parks

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Doctor Doom Wasp and Hornet Annihilator	24838	Tetramethrin 0.200% d-phenothrin 0.125%	3	4.375 kg	0.0142 kg	11 Wasp nest (wn)	0.012 kg/wasp nest	Wasp and Hornet control in Parks
AQUABAC 200 G	26863	*Bacillus thuringiensis* subspecies *israelensis* (serotype H-14, strain BMP-144) 200 International Toxic Units (ITU) per milligram (0.20 billion ITU/kg)	1	5678.4 kg	162.4 kg	811.2 Ha	0.2	Aerial application to hit Mosquito habitat for an early stage (larval stage) control
PRO Atack Hornet and Wasp Killer	24838	Pyrethrins 0.050%, Piperonyl Butoxide 0.100%, N-octyl Bicycloheptene Dicarboximide 0.167%, Propoxur 0.500%	3	2 kg	0.0163 kg	2 Wn	0.008 kg/wasp nest	To control Wasps for public safety
SAFER'S Insecticide Soap Concentrate	14669	Potassium salts of fatty acids 50.50%	2	15.57 L	7.86 L	1.5 Ha+14 trees	No data	To control Mealy bugs, spider mites, aphids and scale insects infestation in interior plants, ground cover in Devonian gardens and Calgary Zoo trees
TreeAzin® Systemic Insecticide	30559	Azadirachtin 5%	2	17.46 L	0.873 L	173 Trees	0.005 L/tree	To control Elm Scale insects using the trunk injection method
†ORTHENE® 75% Soluble Powder	14225	Acephate 75%	2	0.0064 kg	0.0048 kg	6 trees	0.8 g/tree	Trees protection in Calgary Zoo
Dormant Oil	23370	Mineral Oil 98.5%	2	1.94 L	1.91 L	No data	No data	To control Mealy bugs, spider mites, aphids and scale insects infestation in interior plants, ground cover in Devonian Gardens
KONTOS® Insecticide	29567	Spirotetramat.. 240 g/L	2	0.04 L	0.0096 kg	No data	No data	Control of sap sucking insects in trees of Devonian Gardens
RODENTICIDES: Control rodents								
The Giant Destroyer	12269	Sulfur 34.8%	3	444.52 kg	151.13 kg	9434 holes	0.02 kg/hole	Richardson's ground squirrel control in cemeteries, roads sides, and high-use sport fields
Rozol RTU	29545	Chlorophacinone 0.005 %	2	1.78 kg	0.00009 kg	124 holes	0.73 mg/hole	To control gophers in trees nursery
‡FUNGICIDES: Control fungi								

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HERITAGE MAXX™ Fungicide	28393	Azoxystrobin 95 g/L	2	15.12 L	14.364 kg	1.44 Ha	9.97	Snow mould on City golf course greens
INSTRATA® FUNGICIDE	28861	Chlorothalonil 362 g/L, Propiconazole 57 g/L, Fludioxonil 14.5 g/L	2	69.3 L	30.041 kg	2.35 Ha	12.78	Contact preventative spray on City golf course greens
QUALI-PRO INTAGLIO Fungicide	32765	Chlorothalonil 360 g/L Iprodione 55 g/L Fludioxonil 17.4 g/L	2	79.2 L	34.2408 kg	2.4 Ha	14.26	Contact preventative spray on City golf course greens
Trilogy™ SC	29870	Iprodione 29.41% Triticonazole 3.14% Trifloxystrobin 1.47%	2	39 L	13.27 L	2.1 Ha	6.31	Contact preventative spray on City golf course greens

†Used only by Calgary Zoo; ‡Used only by City golf courses; *Of the 26 pesticide products that The City used in 2018: 84% are Schedule 2; 12% are Schedule 3 and 4% fall in Schedule 1.