

2017 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 2017 pesticide products used, the amount used and the plant and pest species targeted. As The City's pest management program continues to evolve, The City 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.

2017 Pesticide use

The following table contains the pesticides used by The City of Calgary and its Civic Partners in 2017. 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	384.75	216.99	265.99	0.82	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	355.57	51.2	4.4+10729 stems	No data	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.
GF-871 Herbicide	28137	Aminopyralid (present as triisopropanolamine salt) 240 g/L	2	1.46	0.35	1.27	0.28	To control Canada thistle and Sow thistle (both regulated as invasive weeds by the Alberta weed control act) in natural areas.
Lontrel* 360 Herbicide	23545	Clopyralid (present as the monoethanolamine salt) 360g/L	2	92.41	33.1	68.77	0.48	Canada thistle, common Tansy (noxious); and other legislated species along the boulevards; noxious weeds in parks.

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Milestone Herbicide	28517	Aminopyralid (present as triisopropanolamine salt) 240 g/L	2	0.0042	0.0010	0.0035	0.29	Canada thistle in natural areas.
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	4923.71	1516.65	826.07	1.82	Broadleaf weeds in turf, along boulevards and playfields.
VANTAGE™ XRT Herbicide	29994	Glyphosate (present as dimethylamine salt) 480 g/L	2	711.46	341.58	226.44	1.51	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	548.79	263.52	75.54	3.49	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.
Killex 500 Liquid Turf Herbicide	27975	2,4-D 385.25 g a.e./L, Mecoprop-P 75 g a.e./L, Dicamba 18.75 g a.e./L (All present as dimethylamine salt)	2	9.71	4.66	3.26	1.43	Broadleaf weeds control in Calgary Zoo and Shaganappi Golf Course.
Killex Liquid Turf Herbicide concentrate	27976	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	20	6.16	3.45	1.79	Broadleaf weeds control in Shaganappi Golf Course.
‡Roundup WeatherMax® with Transorb® 2 Technology Liquid Herbicide	27487	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	15.95	8.62	Spot treatment	No data	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.
†TOUCHDOWN TOTAL® Herbicide	28072	Glyphosate (present as potassium salt) 500 g/L	2	6	3	Spot treatment	Na data	Non-selective weed control of annual and perennial grasses and broadleaf weeds.

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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	131.46	40.49	12.66+Spot treatment for Calgary Housing	1.74	Turf protection from broadleaf weeds in Maple Ridge, Shaganappi golf courses and Calgary Housing land.
StartUp Herbicide	29498	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	3.43	1.85	(Spot treat)	No data	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.
†Renegade HC Liquid Herbicide	27946	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	0.5	0.18	(Spot treat)	No data	Non-selective weed control for turf grass renovation in Calgary Zoo.
INSECTICIDES: Control insect pests								
Safer's TROUNCE Insecticide CONC	24363	Potassium salts of fatty acids 20.0%, Pyrethrins 0.2%	2	22.8	0.05	0.35	0.14	Insects on shrubs, landscape trees, greenhouse and interior plantings.
Dragnet FT Emulsifiable Concentrate Insecticide	24175	Permethrin 384 g/L (55% Maximum <i>cis</i> ; 45% Minimum <i>trans</i>)	2	0.225	0.09	6 (Wasp nests)	0.02 kg/wasp nest	Carpenter ants and wasps in parks.
AQUABAC 200 G	26863	<i>Bacillus thuringiensis</i> subspecies <i>israelensis</i> (serotype H-14, strain BMP-144) 200 International Toxic Units (ITU) per milligram (0.20 billion ITU/kg)	2	5792 (kg)	165.7	No data	No data	Aerial application for mosquito habitat.
Ortho Bug B Gon ECO Insecticidal Soap Concentrate	28377	Potassium salts of fatty acids 47%	4	0.886 (kg)	0.42	1 (Wasp nests)	0.42 kg/wasp nest	Wasp, hornet and yellow jacket nests in trees or attached to buildings.
Success 480 SC Insecticide	26835	Spinosad 480 g/L (Contains 1,2-benzisothiazoline-3-one at 0.04% as a preservative Suspension)	2	0.392	0.19	652 trees	0.00029 kg active ingredient per tree	Saw fly and Scale insects (e.g. tree-based pests).
†ENDEAVOR® 50WG Insecticide	27273	Pymetrozine 50%	2	0.12 (kg)	0.006	No data	No data	Aphids on ornamental plants in greenhouses located in the Zoo.
Horticultural Oil	21348	Mineral Oil 99%	3	0.25	0.25	1 (Trees)	0.25 L/tree	Scale insects (e.g. tree-based pests).
Pounce 384 EC	16688	Permethrin 384 g/L	2	0.005	0.002	1 (Trees)	0.002 kg/Tree	Ants on ornamental trees and shrubs.

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PRO Attack Hornet and Wasp Killer	24838	Pyrethrins 0.050%, Piperonyl Butoxide 0.100%, N-octyl Bicycloheptene Dicarbonyimide 0.167%, Propoxur 0.500%	4	45	0.37	73 (Wasp nests)	0.01kg/wasp nest	Wasps for public safety
SAFER'S Insecticide Soap Concentrate	14669	Potassium salts of fatty acids 50.50%	2	9.56	4.83 L	0.06+ Interior ornamental trees	No data	Mealy bugs, spider mites, aphids and scale insects infestation in interior plants and Calgary Zoo trees
TreeAzin® Systemic Insecticide	30559	Azadirachtin 5%	2	139.64	6.98	1546	0.0045 kg/tree	Elm Scale insects using the trunk injection method
RODENTICIDES: Control rodents								
The Giant Destroyer	12269	Sulfur 34.8%	3	826.38 (kg)	287.66	14576 (Gas cartridge bombs) in 14643 (Holes)	0.020kg/gas cartridge bomb	Richardson's ground squirrel control in cemeteries, and high-use sport fields.
‡FUNGICIDES: Control fungi								
BANNER MAXX® Fungicide	27003	Propiconazole 14.3%	2	34.02	4.86	1.96	2.48	Active snow mould and as a contact preventative spray on City golf course greens.
DACONIL 2787® FLOWABLE FUNGICIDE	15724	Chlorothalonil (tetrachloroisophthalonitrile) 40.4% 500 g/L	2	254.43	102.79	8.05	12.77	Contact preventative spray on City golf course greens.
HERITAGE MAXX™ Fungicide	28393	Azoxystrobin 95 g/L	2	25.8	24.59	3.4	7.23	Snow mould on City golf course greens.
INSTRATA® FUNGICIDE	28861	Chlorothalonil 362 g/L, Propiconazole 57 g/L, Fludioxonil 14.5 g/L	2	101	43.78	3.37	12.99	Contact preventative spray on City golf course greens.
Interface STRESSGARD	31906	Iprodione 256 g/L, Trifloxystrobin 16 g/L	2	37	10.06	2.44	4.12	Contact preventative spray on City golf course greens.
Quali-Pro Iprodione 240 SE	29410	Iprodione 240 g/L	2	30	7.20	0.84	8.62	Contact preventative spray on City golf course greens.
The Andersons 0.72% Prophecy on DGPro	29951	Propiconazole 0.72%	2	198 (kg)	1.43	0.66	2.17	Used on City Golf Courses as a preventative disease control program.
DISARM™ TURF FUNGICIDE	31857	Fluoxastrobin 480 g/L	2	1.6	0.77	1.4	0.53	Used to control turf diseases on City Golf courses.

†Used only by Calgary Zoo; ‡Used only by City golf courses; *Of the 35 pesticide products that The City used in 2017: 91% are Schedule 2; 3 % are Schedule 3, and 6% are Schedule 4. No products are Schedule 1, which typically consist of fumigants and vertebrate toxicants.