

2019 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 2019 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.

2019 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 implemented by Health Canada.
- 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; most of the products need dilution in water diluted prior to application to make a less concentrated solution.
- 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 (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	577.51 L	325.72 kg	432.39 ha	0.75 kg/ha	To control various weed species in Parks shrub beds, LRT lines, Roads side ditches and hard surfaces.
Casoron G4 Granular Herbicide	12533	Dichlobenil 4%	2	134 kg	5.36 kg	0.96 ha	5.6 kg/ha	To control various annual grasses and broadleaf weeds in the City Trees nursery
Garlon™ RTU Herbicide	29334	Triclopyr 144 g acid equivalent/L (present as butoxyethyl ester)	2	513.06 L	73.88 kg	7.16 ha + 2146 stems	ND	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
‡Killlex Liquid Herbicide	9811	2,4-D (isomer specific) 190 g/L, Mecoprop (d-isomer) 100 g/L, Dicamba 18 g/L	2	10 L	3.08 Kg	1.67 ha	1.84 kg/ha	For controlling broadleaf weeds in Golf courses turf

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 (kg/Ha or alternate unit)	Reason for use (example target pests and assets)
Lontrel 360 Liquid Herbicide	23545	Clopyralid (present as the monoethanolamine salt) 360g/L	2	15.77 L	5.67 kg	25.22 ha	0.22 kg/ha	To Canada thistle, common Tansy (noxious); and other legislated species along the boulevards; noxious weeds in Parks natural areas and Calgary Zoo
‡Par III Liquid Herbicide	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	153 L	47.12 kg	27.84 ha	1.7 kg/ha	For controlling broadleaf weeds in Golf courses turf
‡Roundup WeatherMax® with Transorb® 2 Technology Liquid Herbicide	27487	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	3.71 L	1.32 kg	2 ha	0.66 kg/ha	Non-selective weed control for annual and perennial grasses, broadleaf weeds, and woody brush and trees; turf grass renovation in the City golf courses
†StartUp Herbicide	29498	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	1.6 L	0.86 kg	0.96 ha	0.89 kg/ha	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
Nufarm Trillion Turf Herbicide	27972	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	3858.8 L	1188.51 kg	564.23 ha	2.11 kg/ha	To control Broadleaf weeds in turf, along boulevards, Zoo and playfields
VP 480	28840	Glyphosate (present as dimethylamine salt) 480 g/L	2	856.35 L	411.05 kg	443.1 ha	0.93 kg/ha	Used for all vegetation control in Depots, fire stations etc, along rights-of-ways; and to control legislated weeds in Natural areas
INSECTICIDES: Control insect pests								
AQUABAC 200 G-Biological Larvicide to control mosquito (Granules)	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)	1	8463 kg	242.04 kg	990.6 ha	0.24 kg/ha	Aerial application to hit Mosquito habitat for an early stage (larval stage) control
Dragnet FT Emulsifiable Concentrate Insecticide	24175	Permethrin 384 g/L (55% Maximum <i>cis</i> ; 45% Minimum <i>trans</i>)	2	0.71 L	0.27 L	0.67 ha+42 Trees	No data	For control of ants and Wasps in parks and insects damaging trees
†Endevour 50WG Insecticide-Granules	27273	Pymetrozine 50%	2	0.004 Kg	0.002 kg	0.028 ha	71 g/ha	for the control of aphids and reduction of whiteflies on ornamental plants in Calgary Zoo greenhouses

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 (kg/Ha or alternate unit)	Reason for use (example target pests and assets)
HORTICULTURAL OIL-Liquid Insecticide	21348	Mineral Oil 99%	3	0.95 L	0.94 L	0.12 ha+50 trees	No Data	Control of ornamental plants insect pests (scale, aphids etc) in the Reader Rock Garden
Ortho Slug- B – Gone (Slug and snail bait)	28375	Iron (present as ferric phosphate) 0.28%	3	0.16 kg	0.0004 kg	0.004 ha	0.1 kg/ha	To control snail infestation in Devonian Gardens
Pounce 384 EC Insecticide	16688	Permethrin 384 g/L	2	0.456 L	0.18 kg	27 trees	6 g/tree	To control Saw fly infestation in the City trees nursery
PRO Attack Hornet and Wasp Killer	24838	Pyrethrins 0.050%, Piperonyl Butoxide 0.100%, N-octyl Bicycloheptene Dicarboximide 0.167%, Propoxur 0.500%	3	4.65 kg	0.04 kg	17 Wasp nests	2 g/wasp nest	To control Wasps for public safety
SAFER'S Insecticidal Soap Concentrate	14669	Potassium salts of fatty acids 50.50%	2	35.99 L	18.2 L	7.4 ha+94 trees	No data	To control Mealy bugs, spider mites, aphids and scale insects infestation in interior plants, and ground cover in Devonian gardens and Calgary Zoo trees
SAFER'S TROUNCE Insecticide CONC	24363	Potassium salts of fatty acids 20.0%, Pyrethrins 0.2%	2	25.7 L	5.19 L	0.15 ha+171 trees	No data	To control Insects on shrubs, landscape trees, greenhouse and interior plantations
TreeAzin® Systemic Insecticide	30559	Azadirachtin 5%	2	29.62 L	1.48 L	336 Trees	40 ml/tree	To control Elm Scale insects on mature trees along City streets using the trunk injection method
Vegol Crop Oil EC Insecticide	32408	CANOLA OIL 96%	2	0.64 L	0.61 L	0.12 ha+1 tree	No data	
RODENTICIDES: Control rodents								
The Giant Destroyer-Gas Cartridges	12269	Sulfur 34.8%	3	305.1 kg	106.18 kg	6392 holes	0.02 kg/hole	Richardson's ground squirrel and gophers control in cemeteries, roads sides, and high-use sport fields
Rozol RTU-Granular Bait	29545	Chlorophacinone 0.005 %	2	140.09 kg	0.007 kg	2509 holes/bait stations	2.8 mg/hole or bait station	Richardson's ground squirrel and gophers control in cemeteries, trees nursery, landfills and other fenced areas as well as non-residential roadways
Repellent: Repel trees chewing animals								
Plantskydd-Powder odour base repellent	27411	Dried Blood 99.84 %	2	2 kg	1.99 kg	180 trees	11 g/tree	To protect trees from barks ripping animals in Haskayne Park and other natural area sites
FUNGICIDES: Control fungi								
Cueva Liquid Fungicide	31825	Copper, present as copper octanoate 1.8%	2	10 L	0.18 L	298 Trees	0.6 ml/tree	To control infestation of Fire Blight disease in the City Trees nursery

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 (kg/Ha or alternate unit)	Reason for use (example target pests and assets)
‡DISARM™ TURF FUNGICIDE SUSPENSION	31857	Fluoxastrobin: 480 g/L	2	4.7 l	2.26 kg	4.08 ha	0.55 kg/ha	For control of turf diseases in Golf Courses
‡HERITAGE MAXX™ Fungicide	28393	Azoxystrobin 95 g/L	2	5.6 L	0.53 kg	0.45 ha	1.2 kg/ha	Snow mould on City golf course greens
‡INTAGLIO Fungicide-Suspension	32765	Chlorothalonil, 360 g/L Iprodione 55 g/L, Fludioxonil 17.4 g/L	2	259.2 L	112.08 kg	7.59 ha	14.77 kg/ha	Contact preventative spray on City golf course greens
‡Interface STRESSGARD FUNGICIDE-Suspension	31906	IPRODIONE 256 g/L, TRIFLOXYSTROBIN 16 g/L	2	24.25 L	6.6 kg	1.2 ha	4.33 kg/ha	For control of fungal diseases and mold on Golf Courses Turf

†Used only by Calgary Zoo; ‡Used only by City golf courses; *Of the 29 pesticide products that The City used in 2018: 83% are Schedule 2; 14% are Schedule 3 and 3% fall in Schedule 1.