

2020 City of Calgary Pesticide Use

Introduction

The City of Calgary follows Integrated Pest Management (IPM) principles to manage insect pests and weeds, which involves a systematic approach of decision making for selecting cleaner pest management options. Using Pesticide is one of the many tools used by qualified City staff for pests' management. Other pest control methods that the City applies include mechanical, grazing, biological and cultural control of weeds and insect pests. Calgary Parks controlled invasive weeds mechanically (hand pulling and digging) over an area of approximately 31 hectares and goat grazing of approximately 45 hectares during the summer of 2020.

The table in this document lists the 2020 pesticide products used by various City business units and contractors, the amount used and the plant and pest species targeted.

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 additional 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, registering and regulating pesticides in Canada. Health Canada deems that reducing pesticide exposure is foundational to the safe and low-risk use of pesticides according to the label direction.

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 Policy](#) directs the City staff, contractors and other stakeholders to ensure the pest management activities comply with all applicable regulations. The City's pest management policy endorses science based decision and actions for pest management in an integrated manner including all options like 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.

2020 Pesticide use

The following table contains the pesticides used by The City of Calgary and its Civic Partners in 2020. 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	372.01 L	209.81 kg	304.9 ha	0.69 kg/ha	To control legislated & invasive weed species in Parks shrub beds, on LRT lines, along roads side ditches and hard surfaces to protect assets and comply with Alberta weeds control act.
Garlon™ RTU Herbicide	29334	Triclopyr 144 g acid equivalent/L (present as butoxyethyl ester)	2	455.28 L	65.6 kg	9.4 ha+19 trees	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 Liquid Herbicide	28137	Aminopyralid, present as triisopropanolamine salt 240 g/L	2	20.98L	5.03 Kg	190.4 ha	0.03 kg/ha	For controlling broadleaf & invasive weeds on road side naturalization project and in solar park, Bus depots, NW LRT leg & clean the urban forestry canopy expansion site from weeds

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Lontrel 360 Liquid Herbicide	23545	Clopyralid (present as the monoethanolamine salt) 360g/L	2	81.32 L	29.28 kg	57.5 ha	0.51 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	781.02 L	240.6 kg	142.9 ha	1.7 kg/ha	For controlling broadleaf weeds in maintained turf
‡Roundup WeatherMax® with Transorb® 2 Technology Liquid Herbicide	27487	Glyphosate (present as potassium salt) 540 g acid equivalent/L	2	1.74 L	0.9396 Kg	0.3 ha	3.1 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	2.9 L	1.6 kg	0.8 ha	0.95 kg/ha	Non-selective weed control for annual and perennial grasses, broadleaf weeds, and woody brush and trees; turf grass renovation in Golf Courses
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	506.16 L	155.9 kg	100.4 ha	1.6 kg/ha	For controlling broadleaf weeds in maintained turf in parks, roadsides and other green areas
VP 480	28840	Glyphosate (present as dimethylamine salt) 480 g/L	2	955.91 L	458.84 kg	489.8 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	5296.2 kg	151.5 kg	724.1 ha	0.21 kg/ha	Aerial application to hit Mosquito habitat for an early stage (larval stage) control
Doktor Doom Wasp & Hornet Nest Annihilator II	32170	Tetramethrin 0.200% d-phenothrin (Sumithrin™) 0.125%	4	33.1 kg	0.11 kg	69 Nests	1.5 g/nest	To control Wasps, Yellow jackets, and Hornets in parks and public areas

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Dragnet FT Emulsifiable Concentrate Insecticide	24175	Permethrin 384 g/L (55% Maximum <i>cis</i> ; 45% Minimum <i>trans</i>)	2	0.055 L	0.02 L	0.05 ha	0.4 L/ha	For control of ants and Wasps in parks and insects damaging trees
†Endevour 50WG Insecticide-Granules	27273	Pymetrozine 50%	2	0.01 Kg	0.005 kg	0.07 ha	71 g/ha	for the control of aphids and reduction of whiteflies on ornamental plants in Calgary Zoo greenhouses
HORTICULTURAL OIL-Liquid Insecticide	21348	Mineral Oil 99%	3	0.5 L	0.49 L	30 trees	16 ml/tree	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	0.125 kg	0.0004 kg	0.003 ha	0.13 kg/ha	To control snail infestation in Devonian Gardens
SAFER'S Insecticidal Soap Concentrate	14669	Potassium salts of fatty acids 50.50%	2	20.31 L	10.25 L	0.322 ha+82 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	18.45 L	3.73 L	0.1 ha+17 trees	No data	To control Insects on shrubs, landscape trees, greenhouse and interior plantations
TreeAzin® Systemic Insecticide	30559	Azadirachtin 5%	2	33.57 L	1.67 L	312 Trees	5.4 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	0.2 L	0.19 L	0.0013 ha+12 trees	No data	Greener control of insect pests in Devonian Gardens
RODENTICIDES: Control rodents								
The Giant Destroyer-Gas Cartridges	12269	Sulfur 34.8%	3	82.95 kg	28.106.18 kg	1486 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	373.02 kg	0.02 kg	20482 holes/bait stations	0.9 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								
BOBBEX Deer & Rabbit Repellent Concentrate	29804	Wintergreen oil 0.53% Castor oil 0.33% Fish meal mixture 6.13% Fish oil mixture 0.31% Garlic Oil 0.028% Meat meal mixture 1.10% Capsaicin	4	4 L	0.43 L	0.22 ha	1.95 L/ha	To protect trees from barks ripping animals in Haskayne Park and other natural area sites

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		0.003% Related capsaicinoids 0.0025% Dried eggs 2.32%						
DOKTOR DOOM "THE ORIGINAL RODENT REPELLENT"	31587	DENATONIUM BENZOATE 0.075 %	4	3.5 kg	0.003 kg	2950 willow stakes	1.02 mg/stake	Repellent for wild and domestic animals stops wild and domestic animals, from chewing nibbling, licking, gnawing, eating or biting
‡FUNGICIDES: Control fungi								
BANNER MAXX® Fungicide	27003	Propiconazole 14.3%	2	15.12 L	2.2 L	1.2 ha	1.8 L/ha	Active snow mould and as a contact preventative spray on City golf course greens
DACONIL 2787® FLOWABLE FUNGICIDE	15724	Chlorothalonil (tetrachloroisophthalonitrile) 40.4%	2	95.0 L	38.4 L	3.1 ha	12.4 L/ha	Contact preventative turf spray in golf courses against Sclerotinia dollar spot, Helminthosporium leafspot, and Rhizoctonia brown patch
DISARM™ TURF FUNGICIDE SUSPENSION	31857	Fluoxastrobin: 480 g/L	2	3.2 L	1.5 Kg	2.9 ha	0.5 kg/ha	Preventative spray against Anthracnose – Foliar Blight, basal rot, summer patch and dollar spot diseases.
INSTRATA® FUNGICIDE	28861	Chlorothalonil 362 g/L, Propiconazole 57 g/L, Fludioxonil 14.5 g/L	2	191.7 L	83.1 Kg	13.1 ha	6.3 kg/ha	Contact preventative spray on City golf courses turf against gray and pink snow mould
INSTRATA® II A Fungicide	32712	Fludioxonil 125 g/L	2	12.5 L	1.6 Kg	2.1 ha	0.74 kg/ha	For control of pink snow mould in turf
INSTRATA® II B Fungicide	32711	Benzovindiflupyr 100 g/L	2	1.6 L	0.2 Kg	2.1 ha	0.09 kg/ha	For control of snow mould in turf
QUALI-PRO INTAGLIO Fungicide Suspension	32765	Chlorothalonil, 360 g/L Iprodione 55 g/L, Fludioxonil 17.4 g/L	2	28.8 L	12.5 Kg	0.8 ha	15.6 kg/ha	For control of fungal diseases (pink and gray snow mould) in turf
Interface STRESSGARD FUNGICIDE-Suspension	31906	IPRODIONE 256 g/L, TRIFLOXYSTROBIN 16 g/L	2	50 L	13.6 Kg	3.1 ha	4.4 kg/ha	Contact preventative spray against fungal diseases including basal rot, fusarium patch and foliar blight etc.
SECURE® Fungicide Suspension	32991	Fluazinam 40.0%- 500 grams of Fluazinam per litre	2	2.2 L	1.1 Kg	1.4 ha	0.8 kg/ha	For control of fungal diseases including Dollar spot, Anthracnose, microdochium patch and brown patch in Turf

†Used only by Calgary Zoo; ‡Used only by City golf courses; *Of the 32 pesticide products that The City used in 2020: 78% are Schedule 2; 9.5% are Schedule 3; 9.5% are Schedule 4 and 3% fall in Schedule 1.