



RPT 20-454

TITLE: Weed Control Report

DATE: November 23, 2020

TO: Executive Committee

PUBLIC: X **INCAMERA:**

RECOMMENDATION:

1. That Consideration of the alternate weed control measures beginning with the 2021 season in the amount of \$60,000 for the Foamsteam L12 system be forwarded to the 2021 budget deliberations.

TOPIC & PURPOSE:

The purpose of this report is to provide a review of current practices available for weed control and a review of a Thermal Weed Control System allowing for more diversity in how and when the City would tackle weed control.

BACKGROUND:

In March of 2019 a motion was put forth by Councillor C. Miller – Pesticide Chemicals (**MOT 18-21 & CORR 18-108**) – *That Administration provide a report back to City Council in March 2019, on alternatives for The City to stop using all Pesticide Chemicals.*

At the time, a presentation to Council by local resident Estelle Hjertass highlighting some of her concerns, recent media attention surrounding Round-Up with the active ingredient, glyphosate and possible health related effects from pesticide use. She also forwarded along with her report some information about alternatives to pesticides for the City to explore.

Since that report the Parks Department has taken a year to research possible options to chemical use, had time to consult with other communities, and research industry leaders providing options to equipment using a chemical free process.

To provide some context to the last report in 2019, I will be referring to the main text within the body of that report and then providing the break down on the Thermal Weed Control options.

REPORT:

As this report is meant to concentrate on chemical use to control weeds within the City of Prince Albert, the report will be referring to specific documents produced by the Government of Saskatchewan and the Government of Canada.

In order to understand the concerns surrounding pesticide use, it would be prudent to be clear on what the definitions of the terms being used are. The Saskatchewan Government, Ministry of Environment document “Guide to reducing the ‘Cosmetic Use’ of Herbicides in Saskatchewan August 2010 – EPB 403”, contains a glossary of terms. A copy of this report has been included as an attachment to this report. The list of glossary terms that would apply to this report are the following:

- **Cosmetic use** – The use of chemical herbicides to control weeds strictly for aesthetic purposes.
- **Herbicide** – A chemical substance or cultured biological organism used to kill or suppress the growth of plants. Also defined as chemical compounds used to kill or inhibit undesirable plant growth.
- **Pest** – Any noxious or troublesome insect, fungus, bacterial organism, virus, weed, rodent or other plant or animal that adversely affects aesthetics, human or ecosystem health.
- **Pesticide** – A chemical/Substance that is intended, sold or represented for use in preventing, destroying, repelling or mitigating any insect, nematode, rodent, predatory animal, parasite, bacteria, fungus, weed or other form of plant or animal life or virus.
- **Selective** – Herbicide formulated to control specific weeds or weed categories. A material that is toxic to some plant species but less toxic to others. (Example: 2,4-D selectively toxic to broadleaf weeds)

- **Non-Selective** – Herbicide formulated to control both broadleaf and grass weeds (Example: Glyphosate)
- **Integrated Pest Management (IPM)** – An ecological approach to suppressing pest populations (e.g. weeds, insects, diseases, etc.) in which all techniques are consolidated in a unified program, so that pests are kept at acceptable levels while minimizing all potential economic, health and environmental risks.
- **Integrated Weed Management (IWM)** – An ecological based approach to manage weeds by using a combination of methods (cultural, mechanical, biological, chemical and alternative methods) while minimizing all potential economic, health and environmental risks.

When looking at overall control measures, pesticides are used because they are typically the most efficient, effective, and economical means of control. Saskatchewan, as the largest agricultural province, accounts for one third of the value of all pesticides sold in Canada. According to Crop Life Canada, the sales of herbicides in both 2005-2006 accounted for 78 per cent of all pesticides sold in Canada. Although, the agricultural industry is the primary user of these products in the province, herbicides are also used to manage weeds in urban areas. Therefore Saskatchewan's efforts have initially been focused on increasing public awareness and encouraging the use of integrated weed management as a means to reducing the "cosmetic use" of herbicides. – *Ministry of Environment August 2010.*

Current State on Integrated Pest Management (IPM)

The decision to spray herbicides is based on visual monitoring of weed populations and complaints. The Parks Department does use industry best-practices approach and does recognize the need for a policy to improve clarity on pesticide use, justification on the pest management activities carried out by the City employees and City employed contractors on City or non-City owned property. Pest Management Strategy needs to be based on scientific expertise and environmental stewardship through the adoption of integrated pest management principles. Integrated Pest Management is a multidisciplinary, ecological approach to the management of pests based first on prevention and, when necessary, control.

Integrated Pest Management incorporates effective, economical and environmentally sound methods and strategies that include:

- Preventative/Cultural Measures
- Biological and Mechanical Controls
- Chemical Controls

At the federal level, every pesticide registered for use in Canada is approved by the Pest management Regulatory Agency, a division of Health Canada. Pesticides are regulated by the

Pest Management Regulatory Agency to ensure efficacy and minimal risk to human health and the environment; therefore, products are subject to significant scientific scrutiny. Instructions for usage are detailed on the product label and include the specific requirements around application methods.

Provincial regulations cover the licensing and training of individuals, codes of practice, and service requirements for the application of pesticides in Saskatchewan. These include reporting requirements, such as amounts of pesticides used, locations, and the required public notice of treatment activities.

Today's use of Pesticides within the City

There are three main classifications of *pesticide* use in and around the City of Prince Albert. They are:

- *Agricultural use* – Farmers might use *pesticides* to protect their plants or plant products against pests, with the aim to ensuring that quality products are available to consumers.
- *Commercial use* – There a number of Provincially licensed applicators who use pesticides for control of invasive species, weeds, insects that may be of concern to landscaped areas, multi-family/single family homes and commercial businesses.
- *Residential use* – property homeowners use a broad spectrum of pesticides for care of lawns and landscaping, most of these pesticides are available over the counter and through a number of hardware and box retailers.

Where we concentrate the use of Pesticides

The following area of pesticide use are as follows:

- *Facilities Management* – Pesticides are currently used for rodent control in and around buildings. These services are provided to an outside company and are not the direct responsibility of staff within this department.
- *Public Works* - which encompasses (Airport, Sanitation, Water Treatment, Waste Water Treatment, Roadways) – Some herbicides may be used on hard paved areas or in and around buildings on a periodic basis as required.
- *Parks* – would be the biggest user of pesticides within the City as they are used in different areas of operation as follows:

- Application of herbicides for weed control in and around flowerbeds, planters, stump posts, city medians, sidewalks, parking lots, graveled roadways, city owned lots, city owned buildings.
- Application of herbicides on sport fields at the start of the season and then during the off-season. Spot applications may be applied on a periodic basis as required.
- Golf Course

Common Chemicals used by the City of Prince Albert

- **Killex 500** – Commercial Turf Herbicide, Liquid Concentrate. Active ingredients – 2,4-D, Mecoprop, Dicamba. Applied as required.
- **Round-up Transorb** – Water Soluble Herbicide for non-selective weed control. Active ingredient – Glyphosate. Applied as required.
- **Par III** – broad spectrum herbicide, control of hard-to-kill annual and perennial weeds. Ideal for golf courses, parks, lawns, sports fields. Twice a year application. Active ingredient – 2,4-D, mecoprop,-P, Dicamba

How Herbicides are applied

Depending on the area being treated a number of different application processes may be in use. The type of applicators used, are as follows:

- Backpacks
- Handheld pumps
- Tractor driven dual nozzle boom sprayer
- Out front greens mower sprayer with drift mat

Staff are to hold Provincial certification and follow all information on MSDS sheets for chemical application. This would include the proper use of any safety equipment that is required such as, protective clothing (Tyvek suit), respirator, headwear, eyewear, gloves and boots while working with the chemical.

Communication of Pesticide Use

Areas treated with pesticides in parks and open spaces are identified by the use of temporary “lawn” signs (e.g. weed control). An exception to this approach is identified in The Weed Policy (2005) which states:

“Passive Open Space areas include areas such as tree wells, shrub beds, light standards, fence posts, center medians, side boulevards, traffic islands and walkways. These areas are exempt from on-site signage and Pesticide Advisory Line notification, provided that the area selectively treated does not exceed 5,000 sq. ft. and treatment is not within 100 feet of Active Open Space Areas.”

The City also communicates its pesticide use through the City website. As the City does not have a formal spraying schedule and do not provide residents with application dates in advance as the window of application is dependent on the weather and staffing availability.

We take the health and well-being of citizens and green spaces seriously, so all herbicides and pesticides are carefully chosen and are fully certified by both the federal and provincial governments.

2018 Pesticide Applications have been posted on the City Website showing months and locations as well as the chemical being used. We had moved to in the later part of the season trying to update the site based on more conclusive dates and times, however weather played a huge factor in trying to plan out and improve on communication of planned applications.

Final Overview

Pesticide use is a subject that can take on a number of controversial views as there is a lot of information available on many different points of views and conclusions, it is best for one to proceed with caution. The company Monsanto and Round-up with the active ingredient (glyphosate) have been at the forefront of news as of late. A 2018 California court decision awarded \$289 million to a Mr. Dwayne Johnson indicating that the weed Killer Round Up caused his cancer and that Monsanto failed to warn him of the risks.

On the other side of the border here in Canada:

As of January 12, 2019 the PA Herald published a Health Canada piece on Glyphosate and its health risks. In a statement that was released, the federal agency dismissed eight notices of objection and assertions made in the Monsanto Papers. “Health Canada scientists reviewed the information provided in these notices and assessed the validity of any studies in questions, to determine whether any of the issues raised would influence the results of the assessment and the associated regulatory decision.” The statement said.

“After a thorough scientific review, we have concluded that the concerns raised by the objectors could not be scientifically supported when consider the entire body of relevant data. The objections raised did not create doubt or concern regarding the scientific basis for the 2017 re-evaluation decision for glyphosate.”

That 2017 evaluation determined that glyphosate is not genotoxic and is unlikely to pose a human cancer risk. It also determined that dietary exposure associated with the use of glyphosate is not expected to pose a risk of concern to human health and when used according to revised label directions, glyphosate products are not expected to pose risks of concern to the environment.

So two very different looks on a particular chemical, Round-up and the main ingredient glyphosate.

Moving forward on pesticides as a City and what are the options?

Reducing the use of pesticides is a worthwhile objective; however it must be balanced with the existing public expectation that weeds on City-owned property be controlled.

The City does have a different level of maintenance for top tier sports fields and would follow the similar practices as found at the City golf course. These practices would include scheduled maintenance such as irrigation, fertilization, aeration, dethatching, over-seeding and topdressing. The result is a healthier stand of turf grass which out-competes weeds and is able to better resist infestations and wear and tear by user groups.

When we look at budgetary considerations, there are financial limitations which impact the level of maintenance for most other park grass. With limitation comes a reduction in practices to help create a healthier stand of grass which would compete against the weeds, resulting in occasional herbicide use. The Parks Department continues to work towards best turf management practices to help improve the health of the parks grass and lower tier sports fields.

Clarification on current pesticide use - the majority of our City Park spaces are not, treated annually for weeds. Due to the expanse of the parks system, time and the cost involved in providing weed control services, we mainly focus on our top tier maintenance of sports fields. We also look at treating high visibility high traffic areas such as City entrances, meridians, curbs, sidewalks, playgrounds, parking lots and other City owned property.

Over the past year, the Parks Department has continued its work with suppliers looking for alternative products, which may have less of a negative impact on the surrounding environment. Products the department continues to test are as follows:

FINALSAN – Finalsan Herbicide is a patented fast-acting weed, grass, algae, and moss killer. Using a specially formulated, non-staining, ammonium soap of fatty acids, Finalsan is a *non-selective* herbicide that controls or suppresses many common annual, biennial, perennial weeds.

FIESTA – Fiesta Lawn Weed Killer is a *selective*, broadleaf weed killer that uses a specially formulated iron chelate solution. Fiesta works quickly, delivering visible same-day results, even in cool weather.

THERMAL WEED CONTROL –

Moving into 2021 the Parks Department believes that by adding a Thermal Weed Control option to its arsenal we would have the ability to tackle those high visibility areas any time of day in any type of weather. This would eliminate concerns that arise due to chemical use in high traffic areas also the need for our staff to be certified (no certification required) or supervised allowing for a greater pool of staff to pull from to use the equipment. The biggest complaint received; as a department from public is chemical use and how and when it is applied. The perception is that it must be dangerous if staff are required to wear full PPE when applying. It can be difficult if not impossible to overcome that type of stigma knowing limitations to how we apply and when we apply the chemical.

Benefits of a Foamstream system over other steam systems:

- Most cost-effective solution on the herbicide-free market, due to the following reasons:
- Requires over 75% less treatment cycles than any steam system.
- No addition of strong decalcifying chemicals unlike steam systems.
- Most effective solution on the market to treat weeds, moss and algae.
- None of the health risks of working with steam systems.
- Suitable for use in all weather – meaning year-round use and no downtime due to bad weather.
- Basic training for the staff required with no certification required as with the chemical application. This will increase the number of staff that can effectively perform weed treatment duties.

The zone above 57°C is known as the kill-zone. The heat in hot water must stay within this temperature zone in order to damage the plant structure and allow effective and efficient thermal heat transfer from the leaf to the root.

By adding foam into the thermal equation, you are ensuring heat retention in the hot water for longer. This allows the most effective transfer of heat energy from water to plant by preventing heat loss to the atmosphere. The result is the most effective thermal transfer from the leaf to

the root ensuring the plant is killed or severely damaged. The Foamstream process sterilizes seeds and spores therefore requires fewer annual treatments due to minimizing new growth.

Should the City wish to move away from Pesticide use in the future, there will be an increased cost to the City to reduce the use of those Pesticides within parks as, a significant investment would need to be, made to support cultural practices as an alternative to pesticides.

CONSULTATION:

Working with our existing contractors, suppliers, user groups and community stake holders on possible alternative products to help reduce its chemical imprint on the environment while recognizing that there is going to be need for pesticide use where other measures of control are not feasible.

The working relationship aligns with our vision in the Community Services Master Plan in which we envision a city where all community members have the opportunity to participate in affordable and accessible community services to enhance their personal well-being, the strength and well-being of the community, and the sustainability of the environment (natural and built).

COMMUNICATION PLAN:

The Parks Department will continue working with the Communications Department to look for further opportunities to improve upon our ability to inform the public and encourage the public to access the City website for more information. Parks will also continue its use of signs in conjunction with the Weed Control Act, where pesticides are being, applied to inform the public of what type of pesticide(s) are in use.

STRATEGIC PLAN:

This report supports the long-term strategy in providing a component in a well needed educational process that identifies and provides tools and outside support. All while developing and building upon a set of best management practices to be utilized in supporting and assessing the overall success of our landscaping process.

OFFICIAL COMMUNITY PLAN:

Community Services contributes to infrastructure and sustainability efforts. Proper planning can help preserve and maintain natural and built environments. It is important to anticipate, encourage and prepare for growth in response to the needs of the community. Investing in infrastructure will support growth while planning for continuous improvement. Our connection to the natural world is important and must be considered in the delivery of

community services. Likewise, maintaining and investing in the built environment with a consideration to sustainability is important.

OTHER CONSIDERATIONS/IMPLICATIONS:

There are no other considerations/implications under Options to recommendations, Policy Implications, Financial implications or privacy implications.

PUBLIC NOTICE:

Public Notice pursuant to the Public Notice Bylaw No. 24 of 2015 is not required.

PRESENTATION:

Verbal – Timothy Yeaman, Parks Manager

ATTACHMENTS:

1. Steam Vrs. Foamstream Factsheet
2. Quote 22416 Foam Stream L12
3. Going Greener News

Written by: Timothy Yeaman, Parks Manager

Approved by: Director of Community Services and City Manager