

Stirling Council

Agenda Item No.

Committee: Health and safety
Panel

Date of
Meeting: 09th September 2019

Exempt / **Not Exempt**

Current Stirling Council use of herbicides in schools and across the wider outdoor environment

Purpose & Summary

This report seeks to inform on Stirling Councils use of herbicides containing glyphosate as an active ingredient. The context is in relation to a recent litigation case in the USA in 2018 concerning the manufacturer of the herbicide "Roundup" and in relation to the active ingredient glyphosate being suggested as a potential carcinogenic substance with a jury determining that "Roundup" caused a plaintiffs cancer. This briefing highlights the glyphosate containing herbicides currently in use, the current situation in terms of continued approval and use of herbicides containing glyphosate in the UK and the alternative weed control options available in the maintenance of greenspace, streetscape environments and the Council's outdoor estate.

Recommendations

Panel is asked to:

1. Note the current use of glyphosate based herbicides and the available alternative weed control options with higher associated costs and limitations on effectiveness.
2. Note the decision by the European Commission to renew the approval of glyphosate as a weed control herbicide for a period of 5 years from December 2017 and that glyphosate has been given HSE approval and approval within the UK by relevant and appropriate scientists within government that it is safe to use.
3. Agree to the continued use of glyphosate herbicides for weed control as the Council's main herbicide treatment, being the most effective in terms of performance and cost that is currently available on the market for amenity use.
4. Agree that the Council will adhere to any further guidance by the European Union, UK government, the Health and safety Executive and the Scottish Government bodies.

Resource Implications

Any potential move away from a glyphosate based herbicide approach to weed control risks significantly increasing the cost of weed control to the Council and also making control less effective. Any future move to thermal or electric weed control systems would have an adverse impact on the Council's carbon footprint through an increased use of fossil fuels.

Legal & Risk Implications and Mitigation

There are risks in considering any discontinuation of glyphosate herbicide use. The control of weeds would become less efficient and less effective. The appearance of greenspace, schools, public roads and the Council's outdoor estate would become more unkempt and less aesthetic. Continued use of glyphosate based herbicide mitigates against these areas appearance declining, however carries a risk in itself should the chemical ever be withdrawn from the amenity market.

1. Background

- 1.1. Stirling Council currently uses glyphosate-based herbicides for control of weeds on all hard standing areas, including footway kerbsides. The herbicides are also used in green space within parks, play areas, schools, amenity spaces for the spot-treatment of weeds in shrub and rose beds, the treatment of mowing margins on boundary fences and walls, around trees and obstructions within grass areas, on invasive weeds e.g. Giant Hogweed and in tenants Council house gardens on hard surfaces.
- 1.2. Facility managers for the four high schools that are externally managed have informed that their maintenance operators also use glyphosate based herbicides in these schools.
- 1.3. A few schools request herbicide is not used in the grounds in accordance with the Eco Schools Scotland – Green Flag programme linked to their environment review and action plans.
- 1.4. Those schools that are treated with herbicide are treated during the optimum months of the growing season between April – September in school holiday periods.
- 1.5. The most commonly known amenity herbicide containing glyphosate is “Roundup” manufactured by Monsanto (now Bayer). A form of “Roundup” is used by Stirling Council.
- 1.6. The product “Roundup” has been approved and licensed through the EU until 2022. In the UK member state it is assessed and authorised for sale by ministers and is regulated by the Health & Safety Executive in the UK on the usage of the product.
- 1.7. The herbicide “Roundup” is also marketed in a non-commercial form for the domestic market and available for the public to purchase in Garden Centres, DIY stores, home stores, hardware stores and supermarkets.
- 1.8. Other herbicides containing glyphosate that have also been used by Stirling Council, its contractors or the schools facility managers in recent years include “Hilite”, “Dual” in small amounts and “Asteroid”.

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- 1.9. The chemical glyphosate is the active substance in many herbicides (weed killers) and is widely used around the world since 1974. It is a non-selective, systemic herbicide /weedkiller and was first used in the UK in 1976.
 - 1.10. Herbicides containing glyphosate are effective in controlling most weed species including perennials and grasses in many situations including amenity, forestry, aquatic and industrial situations. It is used by lots of people from farmers to foresters to gardeners to biologists trying to control invasive exotic plants.
 - 1.11. The largest use of glyphosate-based herbicides is in agriculture where they are used to control weeds in a wide range of crops including cereals, oilseed rape, field beans, sunflowers, grain maize, sugar beet and grassland.
 - 1.12. The herbicide chemical active ingredient glyphosate prevents plants from making certain proteins required for plant growth by stopping a specific enzyme pathway, the shikimic acid pathway, which is necessary for plant survival. Glyphosate binds to soil and can persist in soil for up to 6 months until broken down by bacteria. The chemical is immobile in soils and unless applied directly over water courses the chemical is not likely to get into groundwater.
 - 1.13. Pure glyphosate is low in toxicity and herbicides containing glyphosate are approved and regulated for use in the amenity horticulture and agricultural sectors.
 - 1.14. In pure chemical terms glyphosate is an organophosphate. However, it does not affect the nervous system in the way that other, now restricted organophosphate anticholinesterase, chemicals do, and does not cause the same effects on human health. Glyphosate is not a neonicotinoid; these types of pesticides are insecticides and are used to treat crops against the actions of certain insects such as pollen beetles. Glyphosate is not harmful to bees and other pollinators.
 - 1.15. The HSE website advises that the UK has a rigorous approvals process for pesticides, which include herbicides. The main aim of the process is to protect the health of people, creatures and plants and to safeguard the environment.
 - 1.16. All companies wishing to obtain approval for their pesticides are required to submit substantial data dossiers to support their applications. The extensive range of studies undertaken on pesticides is aimed at establishing acceptable safety for people, animals and the wider environment. This process has been applied to glyphosate which has been approved as safe and efficacious for a number of years now.
 - 1.17. In the UK member state pesticides, including herbicides are assessed and authorised for sale by ministers and are regulated by the Health & Safety Executive. Each approved pesticide is warranted by a MAPP number. Full information is available on the HSE website. <http://www.hse.gov.uk/pesticides/topics/using-pesticides/general/glyphosate-faqs.htm>
 - 1.18. In addition to the UK process, all pesticides are subject to the regular EU wide initial approval and review programme for active substances. The review programme makes sure that the data supporting their approvals meets modern safety standards.
 - 1.19. Glyphosate is currently approved for use as herbicide (weed killer) in the EU, based on a review of mammalian toxicology, ecotoxicology and other data. The current approval granted in late 2017 expires in late 2022. The risks associated with the use of pesticides in amenity areas such as parks are specifically considered as part of the authorisation process.
 - 1.20. Legally enforceable conditions of use are imposed on the way products can be applied, to ensure the public are not exposed to levels of pesticides that would harm health or have unacceptable effects on the environment. It is important that users (or those who cause or

permit others to use pesticides) not only comply with the authorised conditions of use but also use products in a responsible and sustainable fashion.

- 1.21. The responsible use of pesticides in amenity areas as part of an integrated programme of control can help deliver substantial benefits for society. These include: management of conservation areas, invasive species and flood risks; access to high quality sporting facilities; and safe public spaces (for example, by preventing weed growth on hard surfaces creating trip hazards), industrial sites and transport infrastructure.
- 1.22. The HSE advise that the UK Government views that the regulatory process for authorising plant protection products (PPP) is a robust system. The authorisation process takes into account all scientific knowledge available.
- 1.23. All products which contain glyphosate must be individually authorised in Member States. Applicants for authorisation must show that their products are effective, humane and pose no unacceptable risks to people or the environment. If their products were to pose such risks, they would not be authorised; or if such effects were discovered later, they would be withdrawn.
- 1.24. The HSE currently states neither the EU's assessment of glyphosate as an active substance nor the UK's assessments of applications for authorisation of products which contain it have found the substance unacceptable for use.
- 1.25. Since glyphosate is approved for use in many countries, it has been subject to extensive scientific testing and regulatory assessment in the EU, USA and elsewhere, and by the World Health Organisation. Overall the outcome of the studies and regulation over many years has found that glyphosate can be used safely and that it is not carcinogenic.
- 1.26. In 2015, one non-regulatory organization presented a classification of glyphosate that was inconsistent with experts and regulatory authorities around the world. The World Health Organization's international agency for research on cancer (IARC) classified glyphosate as "probably carcinogenic to humans". IARC placed glyphosate in its hazard category "Group 2A: probably carcinogenic to humans" along with red meat, hot beverages, smoke from wood burning stoves and working as a hairdresser. Two years later, the US Environmental Protection Agency (EPA) and the European Food Safety Agency (EFSA) both stated that glyphosate "is not likely to be carcinogenic to humans."
- 1.27. Some studies have suggested that glyphosate has carcinogenic potential associating glyphosate use with non-Hodgkin lymphoma (NHL), but studies on cancer rates in people have apparently provided conflicting inconclusive results.
- 1.28. In the USA in 2018 a recent legal dispute centred on glyphosate. A 46 year old plaintiff, Dewayne Johnson, argued that his exposure to Monsanto's glyphosate based herbicide "Roundup" during his employment as a groundsman between 2012/16 had caused non-Hodgkin lymphoma (NHL), a blood cell cancer. The plaintiff's work entailed spraying herbicide to control weeds on school grounds, sometimes for several hours a day.
- 1.29. A jury determined that Monsanto's "Roundup" weed killer caused the plaintiff's cancer and that the corporation failed to warn him of the health hazards from exposure. They further determined that the herbicide manufacturer had acted with malice or oppression. An award of \$289 million was made by the court in California in favour of the plaintiff. Further "Roundup" court cases are currently occurring in the USA.
- 1.30. Over the course of the last 10-20 years a wide range of herbicides have been withdrawn from use and as a result the service has where viable introduced mulching to planted areas, sometimes including membranes/growth barriers. Established planted areas and annual

bedding are treated by hoeing and hand weeding, though this is labour intensive. Mechanical weed control through street sweeping is also employed on kerbsides.

- 1.31. In some natural or countryside locations the aesthetic neat and tidy appearance is less required. In situations where an area does not require to be completely weed-free a greater tolerance level can be set. The growing popularity of wildflower meadows and less-frequently cut grasslands increasing sustainability and biodiversity has evidenced people's increasing acceptance of more natural and biodiverse landscapes in some locations. E.g. "countryside" sites, woodlands and cycle paths.

2. Considerations

- 2.1. The control of weeds across Stirling Council's estate is currently carried out predominantly by Council operatives using glyphosate-based herbicide. The work is undertaken by grounds maintenance, street cleansing and fisheries operatives. All Council staff applying herbicides are trained in NPTC Certificate of Competence PA1 & PA6.
- 2.2. Other than the operator labour and fleet element there is annual expenditure on chemical concentrate of approximately £12,000 along with as required costs on chemical applicators and training. As application is predominantly by knapsack sprayers with some CDA (Controlled Droplet Applicator) lances there are no capital costs.
- 2.3. The exception being spraying of adopted road footway kerbsides which is carried out under contract by an external supplier utilising ride on motorised vehicles at a cost of £34,000 per year. The herbicide used is also glyphosate based
- 2.4. In an average year the Council and its contractors will use approximately 690 litres of concentrate glyphosate-based weed killer; typically two treatments being necessary throughout the growing season.
- 2.5. Alternative forms of weed control would require variable levels of increased operator time with mechanical and chemical thought to be the least labour intensive option. Additional budget would be required for more expensive herbicide chemicals, the initial purchase and ongoing maintenance of machinery, materials such as water, fuel etc. and operator training. Ultimate costs would be dependent on the scale and selection of machinery and methods chosen.
- 2.6. Costings estimates derived from another Local Authorities assessment indicate figures in the region of £15,000-£20,000 per weed ripper, £75,000-£100,000 per steam/foam machine, £10,000- £20,000 per burner and £60,000 per electric treatment unit. Therefore a significant capital outlay would be required with increased labour and ongoing revenue costs.
- 2.7. Officers have sought responses from other Local Authorities via the Association for Public Service Excellence (APSE) on glyphosate use and alternatives. APSE are currently preparing a circular briefing on glyphosate herbicide use. The majority of Local Authorities continue to utilise glyphosate. Whilst some Local Authorities have trialled alternatives these have either had limited success, higher costs, required several repeat treatments or technical challenges.
- 2.8. Examples of alternatives include :

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- a) Pelargonic, (also known as Nonanoic) and Acetic acid based herbicides – These are more costly as in mixing the concentrate with water significantly higher ratios of chemical concentrate per litre of water are required. These are also only contact herbicides, meaning they do not translocate to and kill the roots of the plant and are less effective on annual and perennial weeds resulting of more applications per weed control season being necessary for effective control. Acetic acid leaves an odour of vinegar to areas when applied and Nonanic acid is reported to have a somewhat rancid odour. These herbicides are also harmful to bees and other pollinators, particularly when weeds are flowering.
 - b) Mechanical weed ripping machines - Mechanical weed-ripping machines use stiff spinning brushes and can be used to control weeds on some hard surfaces. In addition to removing the weeds they can also assist removal of the detritus which often seeds germinate in. Machines are available in both pedestrian operated and ride on versions. However, pedestrian operated usage is limited due to potential Hand & Arm Vibration Syndrome (HAVS) implications and ride on machines cannot access areas due to parked vehicles.
 - c) Hot water/steam thermal systems – These require large boilers and deliver water at 98oC. Treating weeds with heat destroys plant cells disabling normal plant functions. This can kill or weaken weeds. A hot water/steam system. Well established weeds, perennial weeds and weeds with substantial root systems can recover from heat control. Repeated treatments are therefore often necessary to keep an area free of weeds. Heat treatments may damage adjacent materials, surfaces or plants.
 - d) Hot foam thermal systems – These require large boilers and deliver a biodegradable foal solution at 98oC. A foam additive/surfactant which enhances contact between the spray droplet and the plant by reducing surface tension can help penetrate and collapse more resistant cell walls. The main disadvantage is that the volume of hot water required is such that a suitable vehicle carrying the water-boiler and its fuel is required. This can cause accessibility issues. There is also a requirement for easy access to street water standpipes. Repeated treatments are therefore often necessary to keep an area free of weeds. Heat treatments may damage adjacent materials, surfaces or plants.
 - e) Flame Burner thermal systems – These are portable gas torches producing intense heat that quickly boils the water in plant cells, causing them to rupture. Flaming kills annual weeds but not the roots of perennial weeds. Additional treatments are necessary to deplete the roots' stored energy then the weeds will eventually die. Propane gas is normal the fuel used. Some flame burners work from to small propane canisters but have very low operational time. Others work from larger tanks but require vehicle carriage. Heat treatments may damage adjacent materials, surfaces or plants. Flame use may be particularly hazardous during hot dry spells.
 - f) Electrical treatment systems – These systems are relatively new and use electric lances powered by a diesel generator to put a high voltage through the plant, destroying cells from stem to root. The generator can be transported on relatively small vehicles or a barrow. The treatment cannot occur during rainfall. There are significant hazards associated with operating a 2500V charged machine so usage requires restricted to trained operatives apparatus kept secure.

2.10 The Environment and Place Service is aware that some European nations have taken steps to partially ban the use of glyphosate herbicides e.g. Netherlands for non-commercial use,

Portugal in public places, France a specific Roundup product and others like Austria are considering a ban/partial ban. The service is also aware that Midlothian Council introduced a temporary ban in May 2019 due to concerns around harm to bees. The Service has adopted the position to date that if glyphosate has been given HSE approval and approval within the UK by relevant and appropriate scientists within government that it is safe to use, then it is safe to continue to use the chemical, unless UK government/HSE advice changes.

3. Implications

Equalities Impact

- 3.1. The contents of this report were assessed under the Council's Equality Impact Assessment process. It was determined that an Equality Impact Assessment was not required as (set out reason – answer to question 12 on EqIA Relevance Check). *The EqIA Relevance Check should be listed as a Background Paper, saved on Sharepoint and must be available to the public on request.*

Fairer Scotland Duty

- 3.2. The contents of this report were considered in terms of the Fairer Scotland Duty and were determined not to be of strategic importance.

Sustainability and Environmental

- 3.3. The continued use of glyphosate based herbicides provides a sustainable approach to weed control without any increase in impact on the Council's carbon footprint through an increased use of fossil fuels in relation to the Council's duty relating to climate change.

Other Policy Implications

- 3.4. N/A

Consultations

- 3.5. None

4. Background Papers

- 4.1. EqIA Relevance Check

5. Appendices

- 5.1. None

6. Exempt Information

N/A

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Approved by:

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Date:

Details of Convener(s), Vice Convener(s), Portfolio Holder and Depute Portfolio Holder consulted on this report:

Councillor Thomson and Councillor Gibson

Wards affected: 1,2,3,4,5,6 and 7

Key Priorities:

E - We will create & implement environment and infrastructure improvements; deliver new ownership & delivery methods around energy generation, public transport & internet access, ensuring profits & services work to community, not commercial priorities

Key Priority Considerations:

While our citizens are the lifeblood of our communities, the environment and infrastructure are the arteries which allow us to function and flourish.

Stirling Plan Priority Outcomes:
(Local Outcomes Improvement Plan)

Resilient - People are part of safe and caring communities within an attractive and sustainable environment
