

To: INFRASTRUCTURE, LAND AND ENVIRONMENT POLICY BOARD

On: 24 JANUARY 2018

Report by: DIRECTOR OF ENVIRONMENT & COMMUNITIES

Heading: WEED CONTROL STRATEGY - RENFREWSHIRE

1. Summary

- 1.1 At its meeting on 22 June 2016 the Council discussed a Motion on the use of Glyphosate. At this time Council agreed that an investigation be carried out into the effectiveness and cost effectiveness of alternative weed control strategies and that this should include identifying a pilot of at least 2 alternatives weed control strategies.
 - 1.2 This report sets out the results of the pilot exercise and the review undertaken; and provides an update on the decision of the European Commission who licence the use of herbicides within the European Union, to grant a licence for the use of Glyphosate as a weed control herbicide for a period of 5 years commencing on the 16th December 2017.
 - 1.3 Two alternative weed control strategies were piloted, the first being an alternative herbicide treatment and the second being the mechanical removal of weeds. In addition, research was undertaken into the use and effectiveness of controlling weeds with flame and emerging high pressure steam technology.
 - 1.4 Following evaluation of the two alternative weed control pilots and research into other and emerging weed control methods it was found that Glyphosate remained the most effective and cost-effective method to control weeds, successfully treating all weeds at a significantly lower cost than the alternatives tested.
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2. Recommendations

It is recommended that the Infrastructure, Land and Environment Policy Board:

- 2.1 Notes the outcome from the trials of alternative herbicide control strategies and the effectiveness and cost effectiveness of these trials compared to the use of Glyphosate.
 - 2.2 Notes the decision by the European Commission to renew the approval of glyphosate as a weed control herbicide for a period of 5 years commencing on the 16th of December 2017.
 - 2.3 Agrees to the continued use of glyphosate weed control herbicide as the Council's main herbicidal treatment, being the most effective and cost-effective herbicide currently available on the market for amenity use, and that the Council will adhere to any further guidance issued by the European Union, or UK or Scottish bodies such as Department for Environment, Food & Rural Affairs and Food Standards Scotland.
 - 2.4 Notes that alternatives to the use of Glyphosate weed control methods will continue to be monitored and trialled to assess the effectiveness and cost effectiveness of such strategies.
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3. Background

- 3.1 Glyphosate is the active ingredient in the world's most commonly used herbicide to control weeds. It is used by the majority of Council's in the UK, including Renfrewshire, to control weeds on hard landscaped features such as roads, pavements and foot paths. Glyphosate works by absorption through plant leaves and being transferred to the plant's roots. It is therefore effective at killing the weed and preventing its regrowth and is effective against both annual and perennial weeds, including Japanese Knotweed over a planned and prolonged period of time.
- 3.2 Glyphosate absorbs strongly to soil particles and soil microbes readily degrade glyphosate. As a result glyphosate is generally immobile in soil and does not migrate through soil to ground water or run off in surface water to water courses. Glyphosate is considered low in toxicity to flora and fauna.
- 3.3 Glyphosate is applied selectively throughout Renfrewshire by using pressurised spraying equipment and in accordance with all manufacturers recommended controls. Areas of treatment typically receive between 2 and 3 applications of glyphosate during the growing season each year.
- 3.4 Glyphosate is licensed for use in both horticultural and food growth industries. Council services in Renfrewshire use the product only for horticultural purposes. There is no identified risk in the use of Glyphosate, to either Council employees or

members of the public, when used as directed by the manufacturers. Renfrewshire Council does not use any herbicides for agricultural food production purposes.

- 3.5 Glyphosate based products are the only herbicide treatment currently used by the Council to control weeds. The Council spends around £10,000 per annum on glyphosate based herbicides to control weed growth.

4. Pilot of Alternative Weed Control Methods

4.1 Pilot 1 – Alternative Herbicide treatment - Finale 150

- 4.1.1 The Council engaged with suppliers and benchmarked within the public sector to identify alternative herbicides that worked in a similar manner to glyphosate and were effective in treating both annual and perennial plants. The majority of the herbicide treatment carried out by the Council is in amenity areas and any treatment is required to be able to control both annual and perennial weeds.
- 4.1.2 The research undertaken demonstrated that the number of herbicides that work in a similar manner to glyphosate by absorption into the root and that are effective in tackling both annual and perennial weeds is limited.
- 4.1.3 Finale 150 was identified as a herbicide that provided an alternative. It works effectively against annual weeds but has limited effectiveness against perennial weeds.
- 4.1.4 Finale 150 works on contact with the leaves and is predominately used for turf species and annual weeds.
- 4.1.5 During the 2017 growing season, a glyphosate herbicide was trialled alongside Finale 150. The test areas selected included both hard and soft landscaping on grass verges to give a range of typical scenarios and conditions where weeds are encountered and treated.
- 4.1.6 The results of the pilot showed that in both the hard and soft landscaped scenarios both herbicides were effective against annual weed growth and surface leaf growth of perennial weeds. However, perennial weeds treated with Finale 150 showed excessive regrowth after only a few weeks compared to the glyphosate treated perennial weeds which did not regrow in the same period.
- 4.1.7 On the basis of this pilot glyphosate based herbicides were found to be the most effective at controlling perennial weed growth.
- 4.1.8 If Finale 150 were to be used, it would require around 5 applications per year compared to 2 - 3 for glyphosate to maintain areas to the same standard as they are currently. This would significantly increase the labour and equipment costs for increased treatments.

- 4.1.9 Other information considered in relation to the use of this alternative herbicide is that Finale 150 does have a residual effect in the soil and can migrate through ground water and affect water courses. In addition, Finale 150 herbicide costs around 6-7 times more than glyphosate, which would increase the annual costs of herbicides from £10,000 per annum to around £100,000 per annum at current costs, in addition to the additional costs of carrying out increased treatments.

4.2 Pilot 2 – Mechanical Treatment Methods

- 4.2.1 The second pilot sought to trial a non-herbicide weed control method. Mechanical treatment methods were used to control weeds in both soft and hard landscaped areas through strimming or cutting with grass cutting machinery.
- 4.2.2 The results of this pilot showed that whilst the surface of the weeds would be removed the root would typically remain and regrow. In particular, following this pilot significant weed encroachment into the hard-landscaped areas of both annual and perennial weeds was observed. Weed encroachment was especially prevalent where hard and soft landscaped areas met at paths or grass edges and where there was minor damage such as the wearing tar layer being cracked or crazed.
- 4.2.3 It was concluded that this alternative weed control strategy alone would not be effective at controlling weed growth but that it does have a role to play alongside a herbicide in controlling weed growth.

5. Other Weed Control Strategies Investigated

5.1 High pressure Steam

- 5.1.1 New and emerging technologies using high pressure steam were also investigated and considered. Steam applications break down the plant cellular structure of the weed / unwanted plant growth resulting in the death of most annual weeds and some perennial weeds.
- 5.1.2 The steam application is a slow process, up to 10 times slower than a traditional herbicide application and it is not suitable for all situations that the Council are required to treat. The application of hot steam can also result in an increased risk to the general public during application.
- 5.1.3 Steam is currently only particularly suited for narrow, linear weed control. High pressure steam can also damage surrounding wearing surfaces of hard standing areas and the safety surfacing of play areas.
- 5.1.4 It was concluded that there may be a role for high pressure steam in the management of hard landscaped areas, but it would not work effectively in soft landscaped areas, against certain landscapes and would not be effective or cost effective as the sole method of weed control. It could however form part of a wider strategy to control weed growth, particularly as technology develops.

5.2 Flame

- 5.2.1 The use of flame was also considered for weed control. This works in a similar way to steam where the plant cellular structure is burnt off. This is effective against most annual weeds but perennial weeds tend to regrow after a short space of time. The use of flame is a slow process and utilises propane gas.
- 5.2.2 There is a potential risk to the public by using an open flame in public areas. There are also situations where flame is clearly not suitable as it can damage surrounding wearing surfaces of hard standing areas and the safety surfacing of play areas.
- 5.2.3 It was concluded that the use of flame as a weed control method is similar to high pressure steam in that it could have a role to play in weed control of certain hard landscaped areas, but would not be effective on soft landscaped areas or as the sole method of weed control and would be most effective supporting the use of herbicide to control weed growth.

5.3 Manual weed control

- 5.3.1 Weeds can be removed by manual tools or hand methods. This can be effective for some annual weeds but is generally not suitable for perennial weeds and is very labour intensive. Manual removal can also remove pointing from slabs, cause damage to tarmac and can increase the spread of annual weed seeds. The Council undertakes manual weed control as one strand of its weed control strategy, applying this method around high amenity areas such as plant beds and where a build up of detritus and vegetation has occurred.
- 5.3.2 It was concluded, and has been demonstrated over a number of years, that manual weed control has a role as part of wider weed control strategy but could not be used effectively or affordably as the sole method of weed control.

6. Glyphosate Research

- 6.1 There are a range of views on the status of glyphosate with regard to the potential risks it poses to humans. In March 2015 the World Health Organisation's (WHO) International Agency for Research on Cancer (IARC) classified glyphosate as probably carcinogenic to humans. It also stated that there was "limited evidence" that glyphosate was carcinogenic in humans for non-Hodgkin's lymphoma.
- 6.2 To provide some context to this classification by the (IARC) glyphosate was considered as presenting a similar level of risk as indoor emissions from burning wood and high temperature frying, and the consumption of red meat, to provide some examples.
- 6.3 On 15 March 2017, the Risk Assessment Committee (RAC) of the European Chemicals Agency concluded by consensus that:

- There is no evidence to link glyphosate to cancer in humans, based on the available information
 - Glyphosate should not be classified as a substance that causes genetic damage or disrupts reproduction.
- 6.4 The same conclusion to the Risk Assessment Committee above was also reached by the following organisations:
- European Food Safety Authority (EFSA), supported by experts from 27 EU Member State competent authorities
 - National authorities outside the EU (e.g. Canada, Japan, Australia, New Zealand)
 - Joint Food and Agriculture Organisation of the United Nations – World Health Organisation Meeting on Pesticide Residues
- 6.5 The International Agency for Research on Cancer remains, therefore, the only agency expressing a potential concern regarding a link to cancer in humans.

7. Glyphosate Licence for Use

- 7.1 When the motion on glyphosate was discussed by Council on the 22nd June 2016 the European Commission licence for Glyphosate was due to expire on 1 July 2016. On 1st July 2016 the European Commission then adopted an extension of the approval of glyphosate for a limited period to allow the European Chemicals Agency to conduct its assessment of the potential carcinogenicity of glyphosate. This extension was limited to 6 months after the receipt of the European Chemicals Agency's opinion or 31 December 2017 at the latest.
- 7.2 The European Chemicals Agency sent its opinion to the European Commission on 15 June 2017 as set out above in paragraph 7.1.
- 7.3 On 27 November 2017 the European Commission renewed the approval of glyphosate for a period of 5 years from the 16th December 2017. The approval allows the continued use of glyphosate within the horticultural industry.

8. Summary

- 8.1 Glyphosate has had its licence renewed by the European Commission for use as a weed control herbicide for the next 5 years. Further research has been undertaken on the potential risk of glyphosate with the majority of published views stating there is no evidence to link glyphosate to cancer in humans.
- 8.2 The alternative trials undertaken by the Council demonstrate that glyphosate remains then most effective and cost-effective herbicide available to control weeds posing the least risk to soil, ground water and water courses. There are number of other weed control methods that by themselves would not eliminate the use of a herbicide weed control treatment, but are and can be used in conjunction with herbicides to control weed growth.

Implications of the Report

1. **Financial** - none
2. **HR & Organisational Development** - none
3. **Community Planning** –

Our Renfrewshire is safe – Renfrewshire’s weed control strategy consists of herbicide, mechanical and manual interventions to control weed growth. Herbicide applications are applied in accordance with European Commission licencing and manufacturers guidelines.

4. **Legal** – none
5. **Property/Assets** – none
6. **Information Technology** – none
7. **Equality & Human Rights** – none
8. **Health & Safety** - the Council will adhere to any further guidance issued by the European Union, or UK or Scottish bodies such as Department for Environment, Food & Rural Affairs and Food Standards Scotland.
9. **Procurement** – none
10. **Risk** -
11. **Privacy Impact** – none
12. **CoSLA Policy Position** – none

List of Background Papers

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