

Appendix 1

Alternative weed treatment review 2023

Paper by

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Overview

This paper reviews the use of Glyphosate by ODS to manage weeds on behalf of Oxford City Council. It was commissioned by the Cabinet Member for Citizen-Focused Services in 2022. The review, undertaken by the ODS Parks and Open Spaces team, sets out how Glyphosate is used in Oxford and looks in detail at the cost and effectiveness of alternative weed treatments being trialled in some other council areas across the UK.

The review found that significant care was taken in the way Glyphosate is used by ODS in Oxford to minimise negative impacts on wider biodiversity. It also found that all of the alternative weed treatments had a higher cost to apply and none had demonstrated the level of effectiveness of Glyphosate. The use of acetic acid created new risks to the insect population and to humans.

Officer Recommendation

Both City Council and ODS recommend the continued tightly controlled application of Glyphosate to tackle weed penetration of paved surfaces and invasive species such as Japanese Knotweed. This is in line with current DEFRA and Environment Agency guidance. This position should be kept under periodic review as herbicide manufacturers are working to improve the effectiveness of Glyphosate alternatives; and it possible that the regulatory environment may change at some future point.

Introduction

In 2022 Oxford the Citizen-Focused Services portfolio holder asked officers to review the Council's policies around the use of glyphosate – a non-selective, systematic herbicide that is the active substance in many generally available weed killers. This followed a decision by some other councils in England to end its use.

A UK ban on the chemical was set to come into effect on 15 December 2022, aligned with the recommendation from the European Commission. However, with the UK leaving the EU following Brexit, Britain now makes its own regulatory decisions. Glyphosate remains approved for use in the UK. On 13 October 2023, the European Parliament failed to back the European Commission's

recommendation for the removal of a licence for use for Glyphosate, and until the position is resolved, Glyphosate also remains approved for use across the EU.

According to the Plant Protection Production Regulations 2019 as part of the EU exit strategy, all products set to expire under EU legislation are granted a three-year extension. Glyphosate can now legally be used until at least 15 December 2025 in the UK. After this date, legislation may change to ban glyphosate herbicides, but the chemical remains legal for now.

This document highlights approaches being taken by different local authorities to help Oxford City Council to make an informed decision regarding the future use of glyphosate.

Oxford City Council's Current Approach

ODS Streetscene on behalf of Oxford City Council uses glyphosate (specifically Round Up) to control weeds on highways and streets and other paved areas across the city.

Currently glyphosate is applied three times a year across the city between April – September during the growing season. Treatment is applied to the back edges and kerb lines of footpaths and tennis courts, as well as car parking, garage areas and to hard standing in HRA flat sites. The purpose is to protect the integrity of hard paved areas which are damaged and eventually broken up by weeds growing up through cracks.

Glyphosate is *not* routinely in parks and open spaces (other than around the perimeter of tennis courts) – and hasn't been used in this way for at least 10 years in Oxford. It is not used to prevent weeds appearing - in other words if there are no weeds present then the courts are not sprayed. It is also used periodically to eradicate problem weeds like Himalayan Balsam and Japanese Knotweed – by injecting it into the stem (i.e. not sprayed). These vigorous invasive weeds are particularly difficult to eradicate. – currently the areas receiving this treatment are: John Allen Rec, Lockheart Crescent, Burgess Field, Court Place farm, Alex courts and Thames View Road Rec.

Considerable care is taken in its application. Glyphosate is applied topically to directly onto individual weeds rather than generally sprayed. It is not applied during windy conditions – due to the risk the chemical could impact other plants. ODS staff using the chemical are trained in its use and wear appropriate PPE. Glyphosate hasn't been used around trees, grass verges and in the city's parks and open spaces for the past decade.

Review findings

The comprehensive assessment of alternative methods for weed control and removal suggests that all other approaches are significantly more costly and substantially less effective than using glyphosate. Adopting one or more of the other approaches outlined in the document below would require a Budget bid, and the level of success in managing weeds would be in doubt. At the same time, the current careful management and targeted application of glyphosate by ODS staff is not thought to create a significant risk to biodiversity or human health.

Therefore the Head of Corporate Strategy, who has responsibility for biodiversity, the Head of Communities, who commissions ODS Streetscene, the ODS Parks and Open Spaces Manager and the ODS Director of Environmental Services are all in agreement that the Council should continue to use glyphosate for its current limited purposes – until such point Government changes its advise on use of this herbicide, or another viable, cost effective treatment emerges.

In undertaking the research, it also emerged that glyphosate is not being used in a couple of locations around the city of Oxford following requests from some individual ward councillors and local resident groups. This somewhat arbitrary approach is not appropriate or justified and so officers also advise that the use of glyphosate to manage weed intrusion in paved surfaces is delivered uniformly across the city.

Summary of other Councils' approaches to weed treatment

Glyphosate is still the preferred option of weed treatment for other councils. The trials referenced below have helped councils to finds ways of reducing the use of glyphosate e.g. number of applications, reducing areas of use etc. but not completely eliminating its use. This mirrors Oxford City Council's current approach.

The operational factors which need to be taken into account when considering alternative methods of weed treatment (as referenced in the attached report) are the financial investment in labour, machinery and chemicals and the effectiveness of the treatment on eliminating weeds.

Commissioning Authority (hyperlink leads to original document)	Approach trialled	Outcomes	Further info
York City Council 2021	Acetic Acid and Nonanoic Acid	<ul style="list-style-type: none"> • Areas treated with acetic acid and nonanoic acid showed less weed die back than glyphosate. • Several properties had large weeds growing where the pavement meets the property. The weeds had survived the treatment and continued to grow. Complaints from the test area were more frequent than non-test areas and visually the areas were weedier. • Acetic acid isn't recommend as it has health risks to both the applicant and the public. The recommend strength to kill weeds can also burn the skin. 	Recommendation after trial was that the principle treatment needs to remain as Glyphosate. This was approach was approved.
Bristol City Council 2017	Acetic Acid and hand weeding	<ul style="list-style-type: none"> • For acetic acid and hand weeding the weeds started to re-emerge within a month. Comparison sites treated with glyphosate weeds stayed low for five to six months. • Acetic acid can be as effective as glyphosate in removing the surface appearance of weeds if used more frequently. However the cost becomes prohibitive. • 3.6 times higher costs for acetic acid applications than glyphosate. 	<p>Estimated cost of each method is £60k per application for glyphosate, £216k per application for acetic acid and £392K per application for hot foam.</p> <p>Removing glyphosate completely at the moment, especially on hard surfaces and in control of invasive weeds, is not the right option.</p>
London Borough of Hounslow 2022	Clear all weeds manually without the use of chemical treatments, (except for Japanese knotweed) e.g. using hand tools and mechanical sweepers.	<ul style="list-style-type: none"> • Dedicated teams to focus on just this service. • Programme for 2023 starts earlier in the year and will extend into early November. • Extra teams on standby to support the weeding teams when required. • Main roads and high profile areas will be treated by mechanical sweepers. 	<p>The budget spent on glyphosate has been reused to employ more operatives to manually remove weeds.</p> <p>20 wards are visited once every two weeks March – November.</p>

London Borough of Hammersmith & Fulham 2017	Hot foam treatment across parks and estates and hot water treatment for roadside weeds.	<ul style="list-style-type: none"> Had to invest in completely new equipment and train staff on its correct use. Due to the size of some of the weeds, more than one treatment is required but teams also weed by hand to ensure unsightly weeds are kept to a minimum. 	
Cardiff City Council 2021	Three trialled: glyphosate(3xtimes a year) , acetic acid (4x a year) and hot foam herbicide (3x a year)	<ul style="list-style-type: none"> Across 18 different environmental impact categories, hot foam had the highest impact in all but one, with the environmental impact of glyphosate being lowest in all but two. Total product usage per season km was lowest, at 1.05 litres for glyphosate, compared to 16.25 litres of acetic acid (16 times more herbicide), and 22.9 litres of hot foam (22 times more than glyphosate) Hot foam required 2671 litres of water per kilometre - 65 times more water than glyphosate, which required 41 litres per season kilometre. Acetic acid required 33.75 litres per kilometre Applying glyphosate used less fuel - just 0.18 litres of diesel per km treated, compared to 0.19 litres for acetic acid, and 12.33 litres of diesel, plus 2.13 litres of petrol for hot foam – that’s 63 times more diesel and 100% more petrol than required for glyphosate It took 0.16 hours of labour to treat one kilometre with glyphosate, compared to 0.23 hours for acetic acid, and 4.89 hours for hot foam Glyphosate was also the product that worked best – generating only four complaints, compared to 22 for acetic acid, and 29 for hot foam 	Cardiff CC use WEEDit technology to apply glyphosate and has been for the past 20 years. As taken off WEEDit website: WEEDit uses infrared technology to intelligently detect and automatically spot-treat weeds resulting in: <ul style="list-style-type: none"> Vastly reduced (up to 80%) herbicide usage Minimised off-target spray drift Increased operator productivity Reduced number of complaints by the public Enables local authorities to meet the objectives of their environmental policies
South Lanarkshire Council 2021	4 methods trialled: Hot Foam Hot Steam New Way Spray Mankar Ultra Low Volume lance	<ul style="list-style-type: none"> Trials didn’t identify any suitable replacement that could be used across all land types. Hot Foam alternative while not applicable for widespread usage, found to be suitable for areas such as parks to reduce glyphosate use. The service, through discussions with local groups/individuals will look to progress the removal of herbicides from an agreed area during 2022 	Trial for four methods based on a 1-hectare area so costs, time taken etc weren’t monitored. New Way Spray (natural herbicide containing Acetic Acid) Mankar Ultra Low Volume lance (new handheld herbicide applicator)

<p>Brighton & Hove Council 2019</p>	<p>Clear all weeds manually without the use of chemical treatments</p>	<ul style="list-style-type: none"> • 26 seasonal staff normally take on to deal with the increased amount of weeding needed during the spring and summer months. • Use sweepers to help remove weeds • Made residents aware that weeds would be more visible • In 2022 the Council set up Weed Warrior : <p>Weed Warriors carry out a variety of weed management and vegetation control tasks on highways across the city.</p> <p>The scheme covers streets with 20mph speed limits or less and other hard landscaped public spaces.</p> <p>Volunteers asked to commit 15 minutes of weeding activities but encourage more if people are able to do so.</p>	<p>A lot of press interest in this approach as there has been a high number of complaints: https://www.hortweek.com/backlash-brighton-hove-asks-volunteers-help-clear-weeds/parks-and-gardens/article/1815247</p> <p>https://www.theguardian.com/uk-news/2021/aug/22/council-accused-of-taking-rewilding-too-far-as-weeds-take-root-in-brighton</p> <p>https://www.brighton-hove.gov.uk/news/2022/tackling-weeds-our-pavements</p>
<p>Cambridge City Council 2019</p>	<p>Stop treating weeds in certain areas of city e.g. parks and open spaces</p>	<ul style="list-style-type: none"> • Not using herbicides on the city's parks and open spaces. • Setting up a volunteer scheme in which residents can 'adopt' their street and, among other things, treat weeds without using herbicide. • Continue to use herbicides on streets elsewhere in the city, with the aim of further reducing its use in 2023. 	<p>Set up in 2023 - The Happy Bee Streets scheme, aim to improve biodiversity in neighbourhoods through community weeding. Council give support to groups with tools and advice to manage their pavements in ways that better support wildlife and public health.</p>
<p>APSE 2020</p>	<p>Network Query: Interested to hear from APSE Member councils that have successfully introduced new methods of weed control / treatment. Particularly from council's who have utilised brushes on sweepers as a means of weed control / management.</p>	<p>Cheltenham Borough Council: trialled foam, electric, strimming etc – no one solution seems to do it at the moment and manual clearance takes a lot longer than weed spraying.</p> <p>London Borough of Redbridge: still use a glyphosate based weed killer as treatment on the weeds. Only treat areas as needed, e.g. some areas only receive 2 treatments per year. In 2017 trialled a vinegar based treatment, called New Way Spray. Treatment did not fully kill off the weeds and ended up having to abandon the trial at the beginning of the second treatment and revert back to the glyphosate weed killer.</p> <p>Wirral Metropolitan Borough Council: Proactive in their approach to finding alternatives to Glyphosate and have trialled many methods:</p> <ul style="list-style-type: none"> • Alltec fully electric machine, uses heat to kill the cells in the vegetation, instantly see weeds wilt but they spring 	

		<p>back and this method has little effect on the removal of weeds.</p> <ul style="list-style-type: none"> • Maxwind Pedestrian steam with nylon brush, steam is used to kill the cells in the vegetation, little effect on killing weeds. • Johnston CN101 1m2 Sub-compact sweeper (carbon fibre brushes), had little effect on picking up larger weeds and only shreds the leave of the main stem. Using a nylon brush ensures that the infrastructure of the path aren't damaged. • Foam- requires considerable setup & running costs and heavy goods vehicle to transport. Slow, very little control of areas treated during application. Restricted to certain sites. • Manually -removing weeds, method is very time consuming and labour intensive, scraping weeds will not completely kill the weed as the root will still be in the ground and the weed will simply grow back. • Green Gobbler 30% Vinegar- following on from positive results from our contractors trials, now began a programme of testing on our highways. 	
Exeter	No treatment of weeds	<p>Devon County Council had previous contracted Exeter City Council to undertake glyphosate treatment of city pavements and highways to control weed damage. However, in March 2023 Devon County Council ended its funding for the work. The County Council says it will continue to deal with weeds as part of routine highways maintenance</p>	<p>Exeter City Councillors have expressed concern that there may now be a risk to the integrity of pavement surfaces across the city.</p>

Cost of implementation in Oxford City

Glyphosate alternatives	Method	Cost per km	Water use per km	Fuel use per km (doesn't include vehicle fuel/ machine use only)	Cost per application	Applications per year
Hot water	Hot water can be applied as a spot treatment for weeds in turf or cracks. The principle behind these machines is simple: hot water melts the waxy coating on weed leaves or breaks down the plant's cellular structures. Treated plants are unable to retain moisture and dehydrate within hours or a few days.	£133.33	3,500 litres of clean water per km	15litres	£203,461.58	3 applications a year
Hot foam	Kills unwanted vegetation, including weeds, moss and algae, using the precise application of hot water insulated by a specially formulated biodegradable and organic foam. The foam stops the heat from escaping to the atmosphere, keeping the heat on the plant for longer, ensuring a more effective kill than other alternative methods of commercial weed killer. As this method is vehicle mounted, traffic management and potential rolling lane closures will need to be factored in.	£221.46	3,500 litres of clean water per km	15litres	£337,947.96	3 concentrated applications a year
Acetic acid - Vinegar based treatment	"New Way Weed Spray" was applied as a spray application via a knapsack sprayer. This product carries the COSHH warning symbol, "corrosive" and on the latest label version to "Risk to non-target insects or other arthropods"	£58.26	Not required	N/A	£88,904.76	4 applications

Manual weed control	A pedestrian operated; self-propelled with a weed brush attachment. This will brush weeds from the pavement surface at surface level. Footpath closures may need to be in effect for public safety due to potential of flying debris. Also there may need to be parking suspensions in operation to clear gullies. Arisings will require removal from site and disposal to a suitable green waste transfer facility.	£133.19	Not required	6 litres	£203,247.94	Every 2 weeks, March -October
Current method - Glyphosate	Controlled Droplet Applicators (CDA) used to apply glyphosate. As this is a pedestrian operation, staff can walk along the footpaths, alleyways and verges without stepping into the carriageway, there is no need for traffic management.	£10.48	Not required	N/A	£15,992.48	3 applications a year

Notes

There is approx 1,526km of hard standing ODS manages within Oxford City

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