

Weeds

There are different types of weeds growing in the public realm. This includes weeds in shrub beds, play areas, pavements, road side, verges, fencelines, street furniture and parks.

ANNUAL WEEDS

Annual weeds have a one season life cycle. This means that they complete their growing from seed to seed in one calendar year. Therefore controlling the weed before the seed is formed is critical to controlling the weed. Early flowering should be the latest time of treatment otherwise seeds can spread which will lead to a net increase in weed growth in an area. Eg. chickweed and annual meadow-grass.

BIENNIAL WEEDS

Biennial weeds live for two years. In the first year, instead of flowers, they produce a rosette – growing leaves and forming storage organs which store the food and energy needed for new growth. In year two, the plant flowers and produces seeds. They need treatment in the first year to help stop the storage organs forming as once they do, they become harder to kill. If in their second year of growth, aim to treat biennials before the Spring growth has started. If well-timed one treatment could be enough however due to variation in growth patterns across species – two treatments are likely to be necessary. Eg: hemlock and hogweed.

PERENNIAL WEEDS

Perennial weeds live for three or more years. Like with biennials – the plants storage organs need depleting in order to keep the plant from growing. This means killing the foliage and growing points is important and why perennial weeds need multiple treatments to control the plant. The later in the growth stage the plant is treated, the more treatments it will need to be brought under control. Eg: creeping thistle, grass

INVASIVE WEEDS

Invasive weeds tend to grow out of control and spread very quickly, effecting the surrounding environment. They can be both native and non-native to the location in which they are growing and are usually perennials. In order to gain control on invasive weeds, it is important to treat the vegetation and any new shoots at close intervals to stop the taking hold or new roots spreading. Repeat treatments are required in order to exhaust the storage organs. Eg: ivy, and bramble.

When it comes to treatment cycles and deciding on a plan for a site – it is important to identify which weeds are present. Approaches need to take into consideration all types of weeds that are present – and if it doesn't, making sure there are plans to take care of these separately. Ensuring all key variables have been duly considered will further help ensure the right approach is taken for the treatment site.

Glyphosate is a regulator approved herbicide, considered safe to use across the world and is used by local authorities all over the country. The EU re-approved it for use for another 10 years in December 2023. Many councils have been reviewing the use of chemical weed removal.

| Weed Control Options | Method | Pros | Cons | Suitable For |
|-------------------------------------|---|---|---|---|
| Good design | Reduce options for weeds to take hold | Limited weed growth in the first place | Doesn't apply to existing built infrastructure | New spaces |
| No Control | Leave weeds without any application or intervention outside of routine work | No cost. Provides wildlife benefits and biodiversity | Public perception of uncared for untidy spaces. Sight lines or obstructions to pathways. Damages highway infrastructure. | Everywhere |
| Pavement/kerb line machine sweeping | Purpose built mechanical sweeper (pavement or road) with a regular sweep min. 3-4 sweeps per year. | Frequent sweeping is effective at removing detritus and reducing weed growth. Non chemical. | Expense to purchase and run. Fuel and water. Frequency of emptying equates to high levels of non sweeping time. High emissions. | Pavement sweeper for pavements and alleyways. Road sweeper for road kerb lines. |
| Herbicides/glyphosate | Chemical mixed spray on to weeds (hand spraying, knapsacks, quad bikes) Controlled droplet application with an added wetter is a non traditional method using oil to help adherence to the plant rather than mist. | Effective and long lasting Resource efficient due to low manual labour when at scale. Can be used in a targeted way | Environmental impact particularly relating to contamination in water run off Inhibiting insect lifecycle on plants impacts on birds and insects Further studies required relating to impact on humans Requires certain weather conditions for optimum application | High volume treatment e.g. roads, pavements, paved areas |
| Foam stream/Hot foam | Patented foam. Active ingredient is the heat from hot water. The foam insulates the hot water ensuring heat covers the plant for long enough to kill or severely damage. | Can be used for other purposes that heat removal would benefit. Also sterilises surrounding spores/seeds. Backed by Soil Association Use in all weathers. Pesticide free. Can be used in all weather. Kills 95% of targeted weeds. | Can take several applications. Expensive to purchase and run. Technology still being refined. Additional cost of plant oil extract, water, diesel consumption (unless alternative power source is used). Does not kill roots. Two operatives required to use safely. Risk of scalding. | Targeted applications - weeds and moss on hard surfaces and play safety surfacing. Grass growth around trees, non chemical graffiti removal. |

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| Hot water | Machines heat water to 98 to kill weeds. Multevo. | Lower initial purchase cost | Requires multiple treatments as heat is not held. Diesel pollution. Does not kill roots. | Weeds in hard surfaces, play area surfacing. |
| Vinegar/Acetic Acid | Vinegar, salt and soap combined into an applied solution. | No license required. | Has been trialled but has not been effective. Strong smell.. Possibly worse for wildlife. | Weeds on hard surfaces |
| Burning/flame gun | Blow lamp lance | Effective for surface treatment. Huge cost if applied at scale. | Burning a gas – emissions. Higher risk and health and safety implications. | Spot killing e.g. invasive species |
| Hand weeding/scraping | Hand pull, scrape surfaces, mechanical brushes | Can be very effective if done well and repeatedly. Low set up costs excluding labour. | Time consuming. Requires significant labour inputs 6-9 months a year. Waste removal required. | Shrub beds/open spaces. Risks for hand working in roads/highway edges. |
| Intensive grazing | Animal led grazing | Wildlife friendly with sufficient control. | Not suitable for all ground conditions and can damage sensitive soils. Often requires fencing which can be contentious | Query suitability for an urban Parish. |
| Electrocution | Apply to plant | Wildlife friendly with sufficient control. | Very new technology not fully proven yet | Knotweed Control |
| Perlagonic acid (nonanoic acid) | | For the most part it has been deemed safe to use around people and animals. | Expensive and non residual. When using pelargononic acid to kill weeds, only the green parts of the plant are impacted, and much of the stem and root structure of the plant remains unaffected. For that reason it is believed to be a lesser means of weed control when compared to glyphosate/other chemical-heavy weed killers. | Weeds on hard surfaces and soil. Moss and Algae. Only affects green parts of a plant, it can cannot penetrate woody bark of a plant, so can be used under trees, bushes and hedges. Partial effectiveness. |

What West Swindon Parish Council is doing?

Minimal use of herbicides or pesticides is the Parish Council's 'first choice'. In the management of public open spaces, the Parish Council's approach is as follows:

- Shrub bed management – no weeding or spraying
- Occasional insurance mitigation spraying for SBC
- Play areas spot treatment applications of glyphosate where there is not a viable alternative
- Some splitter islands and roundabouts up to 2 treatments a year
- Occasional once only treatment if clearing a shrub bed for new planting
- Pavements – remove detritus/leaves in the winter where there are large or problematic accumulations
- Public open spaces, parks – no applications

We review new methods of non pesticide control as they become available, with a view to adopting these as soon as possible, where they offer a viable alternative to pesticide use. The majority (99%) of public open space in West Swindon Parish is herbicide/pesticide free all year round.

What are other Council's doing?

Many Councils have moved towards pesticide/herbicide free parks and open spaces. It is more challenging to find those that have gone chemical free for addressing weeds on higher volumes such as roads particularly as most contract this to an external contractor.

Brighton & Hove

Banned glyphosate in 2019 and shifted to manual removal of weeds. In 2024 it is reintroducing targeted use of glyphosate to get the weed control problem back under control. the treatment will only be applied where vegetation is visible and growing on hard surfaces and not the hard surfaces generally. A different method for application will be used - a controlled-droplet application of glyphosate to manage and remove weeds from hard surfaces. Mixing the glyphosate with an oil helps it stick to the weeds. It uses lower amounts of herbicide than traditional methods while reducing the risks to other plant species and wildlife. If there's no visible vegetation, the treatment will not be applied. 3 applications planned during 2024 followed by a review. Council has previously trialled mechanical equipment and gas burners but these did not prove to be efficient or cost effective. Treatment will not be applied to tree bases, - grass verges, - non-hard surfaced central reservations, - community gardens and orchards, - residential gardens and driveways, - basal tree sprouts, parks, gardens and green spaces.

Portsmouth City Council

Tested hot foam treatments, glyphosate, perlagonic acid, ascetic acid, hand weeding and wire weed brush to compare for cemetery maintenance. 1 hour 46 mins set up time including forklift to load machine on to a truck. Investigation concluded that all invertebrates, micro-organisms which come into contact with the treatment are harmed due to the high treatment temperatures. Heat of tools/machine had health and safety risks associated with it. It concluded that hot foam as an alternative was at relatively high cost and weed growth resurfaced within 4

weeks, combined with outdoor health and safety risks due to heat application and trip hazards and diesel emissions. The trial concluded that glyphosate represented the most economical method of weed control but there were alternatives. A summary table was produced as follows

| Weed control Methods evaluated | How quick was the method | Effectiveness of weed control method | Labour inputs | Cost | Number of treatments per annum |
|--------------------------------|--------------------------|--------------------------------------|---------------|--------|--------------------------------|
| Hot Foam | Slow | Partial | High | High | 4 |
| Glyphosate | Quick | Very good | Low | Low | 2 |
| Pelargonic Acid | Quick | Partial | Low | Medium | 3 |
| Acetic Acid | Quick | Partial | Low | Medium | 4 |
| Manual | Slow | Partial | High | High | 1 per month |
| Wire brush | Slow | Partial | High | High | 1 per month |

Lewes District Council

Trialled a number of systems including hot foam and hot water. Using a foamstream machine for hard surfaces in parks, open spaces and housing areas. Cost in region of £25,000. Continued use of herbicide in sports areas such as bowling greens, cricket squares and football pitches.

Waverley Borough Council

Large land holder. Mixed approach. Use of glyphosate where there is no viable alternative e.g. for highways, garages, hard surfaces. Promote pesticide free parks and green spaces.

Glastonbury Town Council

Trialled a number of alternative approaches. Determined that hot water treatments and hand weeding was not viable due to high costs of labour. Have switched to foam based treatment to create glyphosate free planting areas.

Wadebridge Town Council

Pesticide/insecticide free. Use a self-drive powered brush weeder, gas flame, strimmer and hand weeding. Only applies to 3 public parks, cemetery and town centre. Small scale.

Steps to minimise the spread of chemicals are accepted as follows:

- Use pesticides where there is no other suitable alternative is available
- Use a method that uses/applies the least amount of chemical, i.e. CDA (controlled droplet application), painting, plugs, targeted spraying
- Where possible, not apply a blanket cover of chemical
- Ensure that spare pesticides/containers are disposed of safely in an approved manner
- Ensure that spray equipment is washed out in a safe manner according to the approved method, to safeguard the environment
- Ensure that the application method is approved for the product used
- Leave a “pesticide free” buffer zone around environmentally sensitive areas where appropriate

Conclusion

For West Swindon Parish Council, looking ahead at possible expanded responsibilities, it has the following volume across its assets to consider

220 individual streets

724,383 m² of total road area

407,401 m² of total footways (including cycle tracks)

Effective weed control can have a number of different approaches and will depend on the organisation's resources and the extent of the problems it is seeking to address. Weed control across any regime or application requires routine, repeat and regular applications/visits in order to sustain a solution. Once weed prevention has been implemented, remedial solutions can be applied and potentially reapplied more sparingly.

For parks, open spaces and leisure areas, Council's are adopting a broader mix of approaches as these spaces are more contained and the cost of repeat applications or investment in equipment is lower than for the treatment to roads and pavements. The majority of Council's rely on a combination of regular road sweeping and chemical spraying to maintain minimal weed growth in roadside areas.

Generally, any Council will need to consider an approach for the removal of weeds and a follow up approach to deter growth/regrowth. Prevention is an underpinning principle to weed management/control. There are a range of machine types for pavement and road sweeping including some electric based models as well as single engine compact machines. The Council can consider purchase or lease options or tender for an external contractor.

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Further Reading:

[The evidence of human exposure to glyphosate: a review - PMC \(nih.gov\) \(2019\)](#)

[Exposure risk and environmental impacts of glyphosate: Highlights on the toxicity of herbicide co-formulants - ScienceDirect](#)

[Microsoft Word - Weed Control Trial Report \(draft 25-08-23\) \(portsmouth.gov.uk\)](#)

[Case Study: Pesticide-Free Glastonbury - Pesticide Action Network UK \(pan-uk.org\)](#)

[Step-by-step-local-council-guidance-to-becoming-pesticide-free.pdf \(naturecios.org.uk\)](#)