



Friends of Wimbledon Park

Glyphosate

This is a short note to provide a balance view on the use of glyphosates.

Health and Safety Executive

<https://www.hse.gov.uk/pesticides/using-pesticides/general/glyphosate-faqs.htm>

Glyphosate is the active substance in many herbicides (weed killers) and is widely used around the world. It is a non-selective, systemic herbicide /weedkiller and was first used in the UK in 1976. Glyphosate is 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. Since it is approved for use in many countries, it has been subject to extensive testing and regulatory assessment in the EU, USA and elsewhere, and by the World Health Organisation.

The risks associated with the use of pesticides in amenity areas such as parks are specifically considered as part of the authorisation process. 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.

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.

Gardening Which?

<https://gardening.which.co.uk/hc/en-gb/articles/360010137440-Glyphosate>

Q What is glyphosate and what is it used for?

- 1) **A** Glyphosate is an herbicide used in a lot of weedkiller products in the UK including Roundup. It is applied to the leaves of plants to kill both broadleaf plants and grasses. It is absorbed by the leaves and then travels to the growing parts of the plant. Once there, it prevents the plant from making proteins that are needed for growth. This means it kills the whole of the plant, including the roots, making good at dealing with perennial weeds, such as dandelions, where the plant will regrow if the root is not killed or removed entirely.

Q What are the concerns over its use?

- 1) **A** The main concern is that glyphosate can cause cancer. This view has been supported by the International Agency for Research on Cancer, the World Health Organisation's cancer agency, which reviewed a number of studies on glyphosate from around the world and concluded that it was "probably carcinogenic to humans" in 2015. In 2018 a man who claimed herbicides containing glyphosate had caused his cancer won £226m in damages from the company Monsanto who make glyphosate.
- 2) A second concern is the negative effect glyphosate use has on bee health. Studies from the US have shown that bees exposed to glyphosate lost healthy gut bacteria, which left them vulnerable to fatal infections.
- 3) Several countries including Colombia, the Netherlands, Sri Lanka and France have introduced bans or partial bans on its use. Germany is planning to end the use of glyphosate by 2023.

Q Is it legal to use products containing glyphosate in the UK?



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- 1) **A** The short answer is yes. The European Commission has said that the European Food Safety Authority, the European Chemicals Agency and other scientific bodies have also evaluated studies from around the world and found no link to cancer in humans. In 2017 the European Union extended the licence for use of glyphosate for five years. The UK was among the states in favour of glyphosate renewal.

Q What alternatives are there to using glyphosate?

- 1) **A** If you don't want to use chemicals, the best way to control perennial weeds is to dig them up, being careful to remove all the roots.

Garden Organic - Our views - Glyphosate - the Debate

<https://www.gardenorganic.org.uk/our-views/glyphosate-the-debate>

What is glyphosate? Should it be banned? And how can you manage weeds without it? Glyphosate is a toxic herbicide used to kill weeds. It is not acceptable in organic growing.

Here are 10 things you need to know about glyphosate.

1. Glyphosate is rarely used on its own, but as part of a chemical cocktail, for instance with the trade name Roundup or Weedol.
2. These formulations are potentially far more dangerous. Dr Robin Mesnage of Kings College London, writes "We know Roundup, the commercial name of glyphosate-based herbicides, contains many other chemicals, which when mixed together are 1,000 times more toxic than glyphosate on its own." [Recent research](#) has show these other chemicals include arsenic, chromium, cobalt, lead and nickel.
3. The European Food Safety Authority (EFSA) says that glyphosate is safe. However, most of their research is provided by the industry which created the herbicide. They haven't tested the various individual commercial formulations. And regulation safety tests on mammals cover a short period, maximum 90 days. No-one knows the effect of long term exposure to these toxic chemicals.
4. This is worrying, because independent research indicates that glyphosate is not only possibly [carcinogenic](#), but that it also affects the body's [endocrine system](#) – causing problems in the liver and kidneys. Industry testers dispute this, but interestingly have declined to reveal all the results of their safety tests. See [Corporate Europe](#) report.
5. Over [60% of wholemeal bread](#) contains traces of glyphosate, according to PAN UK. While not necessarily toxic in small amounts, this gradual and persistent intake could create a health risk.
6. This [recent paper](#) explores the effect of GBHs (glyphosate based herbicides) on the human gut. Interference with gut enzymes gives rise to many diseases such as gastrointestinal disorders, obesity and diabetes. Another paper reveals that glyphosate can [increase our antibiotic resistance](#) - a global health problem looming on the horizon.
7. Glyphosate is the most widely and heavily used [agricultural worldwide](#), in agriculture, parks, and amenities as well as in gardens.
8. [Recent research](#) shows that glyphosate formulations destroy the microorganisms in healthy soil, and affect [earthworms](#). (For a full review of the research on glyphosate on soil ecosystems, [see this 2016 report](#) from the [Soil Association](#).)
9. Glyphosate producers claim it is rapidly inactivated in the soil. However, the chemical is very persistent in soils and sediments, and in colder, seasonal climates, such as the UK, residues have been found in the soil for up to 3 years. It also inhibits the formation of nitrogen-fixing nodules on clover for up to 4 months after treatment.
10. Again, makers of glyphosate claim that it is unlikely to pollute the water (ground or surface). However, a recent review has shown high levels detected in ground water and in some cases



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above legal groundwater quality standards. Water contamination is probably a result of drift from spraying, or for soil runoff and erosion from both farming and domestic use.

So how does this toxic chemical work?

Glyphosate is absorbed through foliage, inhibiting the plant's ability to synthesize proteins. This causes it to sicken and die.

Monsanto has genetically engineered crops such as soya, corn and wheat, to be resistant to glyphosate, so that when sprayed they survive - but the weeds die. However, after years of use, this has created resistance in the weeds, so called 'super weeds'. Depressingly, it appears the only way to treat these resistant weeds is to use yet more chemicals.

Should glyphosate be banned?

Garden Organic strongly opposes the use of toxic chemicals ... to use glyphosate formulations, such as Roundup, is to poison the soil, the wildlife, and ourselves. It is totally contrary to our organic growing beliefs.

— Glyphosate - the debate

The [World Health Organisation](#) listed glyphosate as probably carcinogenic. Numerous other [independent research studies](#) have looked into the chemical's negative impacts. These include damage to the liver, kidney, and skin cells, as well as disruption to soil and aquatic life.

Recently there have been a number of court cases in the US, where Monsanto (now owned by Bayer) has been found guilty of suppressing information on the toxicity of its glyphosate product, Roundup. The link with non-Hodgkin's lymphoma is now undisputed. As one attorney put it, "Monsanto has never had any interest in finding out whether Roundup is safe. Instead of investing in sound science, they invested millions in attacking science that threatened their business agenda."

However, the European Food Standards Agency (EFSA) claims that "glyphosate alone is not dangerously toxic to humans or animals." [Their opinion](#) is based on a limited number of scientific studies, many of which are industry-led. Similarly, the UN's Food and Agriculture Organisation (FAO) found that the chemical was "unlikely to pose a carcinogenic risk to humans from exposure through the diet". This omits the effects of topical application of glyphosate for farmers, and those who live near sprayed fields and parks. Neither does it look at other illnesses potentially caused by the herbicide, nor does it examine the other chemicals mixed with glyphosate, which have greater toxicity, and are potential endocrine disrupters.

The licence for glyphosate use in the EU has recently been under discussion. After a long battle between the agrichemical industry, who wanted a full 15-year renewal, and concerned environmental NGOs and individuals, who wanted glyphosate banned - a licence has been granted. But only for 5 years. The EU Commission also added certain recommendations for its use: to ban the co-formulant, POE-tallowamine; to reinforce scrutiny of farmer's use of glyphosate just before harvest; and to minimise its use in specific areas, such as public parks and playgrounds. To date it is unclear if the UK government is prepared to accept these recommendations.

[See here for an analysis of the responses to this licence renewal.](#)

How to deal with weeds without a glyphosate cocktail

To grow organically is to cultivate plants without artificial chemicals - especially those that are toxic and damage wildlife.

However, some growers still feel the need to control weeds in their paths and hard surfaces by killing them with glyphosate. This is not an acceptable organic practice. So what advice can we give? From



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path preparation to mulches and organic weedkillers, here are some ideas below and our [Weed management](#) area is full of more advice.

Preventing weed growth on hard surfaces

Lay your paths and hard surfaces with an impenetrable foundation layer: a geotextile membrane or a substantial mix of hardcore rubble and sand, firmly flattened to exclude all light and reduce moisture. Cracks between pavers should be filled with mortar - not sand, which provides the ideal medium for weeds to germinate. Lime mortars are more environmentally friendly than cement mixes.

Existing hard surfaces with persistent weeds can be treated either by manual removal, boiling water, or by a thermal killer. These instruments provide directed intense heat to kill the plant shoots. It is effective, particularly on young weeds, and if used twice in the growing period.

[See a comparison of weed killer methods \(thermal, hot water, and Glyphosate\).](#)

Mulches for growing areas

Weeds will occupy an area of soil where nothing else is growing. To prevent this from happening, cover the soil between plants so that light cannot penetrate. This is called 'mulching'. Mulches can be made from a thick layer of organic matter (compost, shredded bark, cardboard, newspaper, straw etc) or from sheets of plastic textile. A compost mulch is ideal, as not only does it suppress weeds but it also feeds the soil beneath and improves its texture.

References and further reading:

- 1) Friends of the Earth, [The Environmental Impacts of Glyphosate 2013](#) report
- 2) [IARC report](#)
- 3) Pesticides Action Network [Fact sheet](#) and [Alternative Methods of Weed Management without glyphosate for farmers](#).
- 4) Organic Weed Control by Pauline Pears. Pauline's article is from the magazine The Organic Way (Autumn 2015, ed TOW214), available only to Garden Organic members. If you would like to become a member, phone Garden Organic on 02476 308210 or email membership@gardenorganic.org.uk.