

# An Overview: Glyphosate



**With over 40 years of safe use, glyphosate is one of the world's most important tools for managing problematic weeds and a critical component of modern agricultural practices.**

## The Basics

- // **What:** Glyphosate is an effective and widely used herbicide that helps farmers around the world manage a variety of weeds, protecting crops and the land; it has a 40-year history of safe use.
- // **Why:** Weeds are the biggest factor affecting farm productivity, and farmers need multiple tools available to effectively manage them.
- // **How:** Glyphosate works as one tool as part of an integrated weed management program that also includes crop rotation, multiple effective herbicides and other practices.

Regulatory authorities routinely review all **approved pesticide products** and have consistently reaffirmed that



**glyphosate does not cause cancer.**<sup>1,2</sup>

## The Background

Worldwide, crops compete with some 30,000 weeds for space, nutrients, water and light, challenging farmers to realize their full potential of productivity. On average, a farmer loses one-third of their yield to weeds. In the past, controlling weeds had to be done by hand — an incredibly difficult and labor-intensive process. Modern crop protection tools made this process easier by allowing farmers to precisely spray weeds. First introduced in the 1970s, glyphosate is an extremely effective herbicide with a 40-year history of safe use. Its widespread adoption coincided with the introduction of crops genetically modified to tolerate glyphosate, allowing farmers to target weeds while protecting valuable crops. Today, glyphosate-based products are the most widely used weed control products in the world. This widespread adoption is due not only to the effectiveness and extensive economic and environmental benefits, but also due to the strong safety profile of these products.

## The Highlights

### **Glyphosate is a once-in-a-century product.**<sup>3</sup>

- // Glyphosate was commercialized over 40 years ago and is used in both agricultural and non-crop environments.
- // Glyphosate-based Roundup products have been used safely and successfully for over four decades worldwide.
- // Unlike most herbicides, glyphosate controls both grass and broadleaf weeds, making it one of the most important tools for weed management.
- // Some genetically modified crops have glyphosate-tolerance traits, contributing to the convenience and efficacy of using the product by allowing application over the top of the crop. Even in non-glyphosate tolerant crop varieties, glyphosate is often used before crops are planted or after they are harvested to prevent weed populations from rapidly growing out of control.
- // Scholars have referred to glyphosate as a “once-in-a-century” herbicide because of its high degree of efficacy and its positive safety profile.

#### References

1. Environmental Protection Agency (EPA). <https://www.epa.gov/ingredients-used-pesticide-products/draft-human-health-and-ecological-risk-assessments-glyphosate>
2. European Food Safety Authority (EFSA). <https://www.efsa.europa.eu/sites/default/files/170523-efsa-statement-glyphosate.pdf>

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## The Highlights

### Experts agree it is safe to use.

- // Glyphosate is one of the most studied herbicides in the world – and, like all crop protection products, it is subject to rigorous testing and oversight by regulatory authorities.
- // Regulatory authorities in the U.S., Europe, Canada, Japan, Australia, New Zealand, Korea, Brazil, and elsewhere routinely review all approved pesticide products and have consistently reaffirmed that glyphosate does not cause cancer.<sup>4,5</sup>
- // Evaluations spanning more than 40 years, and the overwhelming conclusion of experts and regulators worldwide, support the safety of glyphosate and glyphosate based-products.

### Glyphosate promotes biodiversity and environmental sustainability.

- // The environmental safety profile of glyphosate has been well-documented, including its minimal risk to non-target animals, such as honey bees, monarch butterflies, amphibians and many other wildlife species.<sup>6,7,8</sup>
- // By using glyphosate, farmers can ensure there are fewer weeds competing with crops for nutrients, water, sunlight and space, resulting in more productive harvests while using less land.
- // The use of glyphosate has allowed many farmers to reduce the need to plough, which saves them time and money.
  - // Ploughing less also allows organic material, nutrients and beneficial insects to build up in the soil. This helps protect soil fertility and reduce erosion and run-off, keeping moisture in the ground and available to crops.
  - // It leaves more crop residue (stems, leaves, seeds pods, etc.) on the surface, providing a useful habitat for some animals.
  - // Low-till soils have a greater capacity to retain carbon dioxide and require fewer tractor trips across the field.

### Farmers need an integrated approach to managing weeds.

- // Glyphosate is a key tool for successful weed management.
- // A fundamental component of integrated weed management is relying on multiple methods of weed control, including herbicides. No herbicide on the market today matches glyphosate's unique combination of efficacy, cost, and favorable health and safety profile.

## Key Things to Remember

- // For more than 40 years, farmers, gardeners, conservationists and other users have counted on glyphosate as a cost-effective tool that can be used safely to control a wide range of weeds.
- // Glyphosate is a breakthrough for modern agriculture, as it reduces the need for tilling fields, which saves time and costs for farmers, while also decreasing erosion and water loss to help keep soils healthy and reduce carbon emissions.
- // The U.S. Environmental Protection Agency (EPA), the European Food Safety Authority (EFSA) and other regulatory authorities in Canada, Japan, Australia, Korea, Brazil and elsewhere routinely review all approved pesticide products. When it comes to safety assessments, glyphosate is among the most extensively tested pesticides on the market.

#### References

4. Environmental Protection Agency (EPA). <https://www.epa.gov/ingredients-used-pesticide-products/draft-human-health-and-ecological-risk-assessments-glyphosate>
5. European Food Safety Authority (EFSA). <https://www.efsa.europa.eu/sites/default/files/170523-efsa-statement-glyphosate.pdf>
6. Growing Our Future. <https://glyphosateinfo.monsanto.com/how-glyphosate-is-helping-to-lower-co2-emissions/>
7. ECPA Infographic on glyphosate. [http://www.ecpa.eu/sites/default/files/ECPA\\_glyphosate\\_infographic\\_web\\_0.pdf](http://www.ecpa.eu/sites/default/files/ECPA_glyphosate_infographic_web_0.pdf)