

## Glyphosate

Glyphosate is a non-selective systemic herbicide that is applied directly to plant foliage, which when given in smaller quantitative can act as a plant growth regulator. It was first registered for use in the United States in the 1970s and is one of the most widely used herbicides in the US.

In 2019, a German Pharmaceutical Company, named Bayer, faced multiple lawsuits against its herbicide products which are based on Glyphosate. This herbicide is said to have cancer risks and has been banned in many parts of the world.

The [World Health Organisation \(WHO\)](#), in the year 2015 had published a research study, that stated **Glyphosate is probably carcinogenic to humans**. After this report, France, Italy, and Vietnam had banned the use of this herbicide.

### What is Glyphosate?

- The herbicides are based on a compound called glyphosate and are scientifically N-(phosphonomethyl) glycine under the International Union of Pure and Applied Chemistry (IUPAC) system of nomenclature
- Its molecular formula is  $C_3H_8NO_5P$
- Glyphosate is an active ingredient in weed killer products and is an odourless white powder
- It was first registered for use by the United States Environmental Protection Agency in 1974
- This herbicide is used in agriculture, forestry on lawns and gardens, and for weeds in industrial areas

### Glyphosate Usage in India

- The tea sector in India is the biggest consumer of glyphosate in the country. It is majorly used on tea planters
- The tea sector of West Bengal and Assam is a key market for the sales of Glyphosate
- This herbicide is highly consumed for the growth of sugarcane, maize and many fruit crops including mango, banana, grapes, pomegranate and citrus
- As per a bulletin released by the Indian Council of Agricultural Research (ICAR) in 2016, in India, this weedkiller goes by the name of Glycel, Roundup and Brake
- In India, Andhra Pradesh was the first state to ban the use of Glyphosate in September 2018. It was followed by Punjab, Kerala and Telangana, which had put some restrictions on the sale of this herbicide, however, not completely banned

### How is it harmful to Human Beings?

Glyphosate is said to be harmful to human beings as it has high risks of cancer. Since this herbicide does not evaporate into the atmosphere, if a person inhales it or eats something immediately after touching a disinfected plant, they may also consume Glyphosate, which is extremely harmful.

A person who has been exposed to products containing glyphosate may experience skin irritation, sore throat, nausea, vomiting, and diarrhoea and a burning sensation in the mouth.

### Can Glyphosate affect the environment or wildlife?

**Environment** - Glyphosate does not get into groundwater as it binds well into the soil. Based on the soil type and climate of a place, glyphosate can persist in soil for up to 6 months. It is then broken in the soil by bacteria.

**Wildlife** - Pure glyphosate is low in toxicity to fish and wildlife, but some products containing glyphosate may be toxic because of the other ingredients in them. Glyphosate may affect fish and wildlife indirectly because killing the plants alters the animals' habitat.