What is glyphosate?

Glyphosate is an herbicide used to control weeds in agriculture, forestry, residential and commercial environments. First introduced in the 1970s, glyphosate helped revolutionize food production, making farming more productive and sustainable.

Globally, farmers lose between 30 and 40% of their crops to weeds, insects and disease. Without herbicides and other crop protection tools, these losses could double.

Did you know?

Globally, farmers have to compete with

30,000

different species of weeds.

An herbicide is a pesticide used to control unwanted plants, or weeds that would otherwise out-compete crops for vital nutrients, space, water and sunlight.

Benefits of glyphosate in agriculture:

Glyphosate helps farmers effectively and efficiently control weeds and reduce crop losses. Preventing crop losses is critically important to keeping food available and affordable.

Glyphosate has also helped farmers adopt conservation tillage practices, which means that rather than removing weeds mechanically, they do so with a herbicide.

This has resulted in significant improvements to soil health and has reduced the greenhouse gas emissions from plowing their fields, which makes it a valuable tool in support of sustainable agriculture.

How does it work?

Glyphosate works by inhibiting a specific enzyme pathway, preventing plants from making proteins needed for growth. This pathway can only be found in certain plants and microbes, it is not found in humans or animals.

Glyphosate has become a popular tool for farmers because it can be used to control a broad range of weeds while having an excellent safety profile and low toxicity.

Is glyphosate safe?

Glyphosate is one of the most thoroughly studied pesticides in the world. Health Canada's Pest Management Regulatory Agency (PMRA) leads the rigorous process to ensure the safety of any pesticide that makes it to market, including glyphosate.

Health Canada has confirmed that glyphosate does not pose any unacceptable health risks.

Regulatory agencies like Health Canada evaluate whether something poses an unacceptable risk by looking at hazard and exposure. In the case of glyphosate, its low level of toxicity coupled with the low levels at which consumers are exposed to it means it can be safely used by farmers to help grow food.

Hazard

Naturally-occurring arsenic in apple seeds has the potential to cause harm.

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Exposure

The quantity of arsenic in an apple seed is not such that it would negatively impact health. Apple seeds are not usually consumed.

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Risk

The risk of harm is low. Arsenic in apple seeds has the potential to cause harm, but they are not consumed at high enough levels for this to occur.

Glyphosate and cancer

Health Canada and every major regulatory agency in the world, including the European Food Safety Agency, has concluded that glyphosate does not cause cancer. These evaluations assess **risk**, meaning they consider hazard and potential exposure.

The International Agency for Research on Cancer (IARC) has assessed glyphosate to be a "probable carcinogen" using a **hazard-based** assessment. This means they evaluate the potential to cause cancer **without** considering exposure.

Since the distinction between risk and hazard is often misunderstood, IARC classifications can be used to falsely portray relatively safe products as dangerous.

According to the IARC other probable carcinogens include working night shifts, being a hairdresser, and drinking hot beverages.

What about residues on food?

The Canadian Food Inspection Agency (CFIA) says that glyphosate residues on food do not pose a health risk to Canadians. Residue testing done by the CFIA shows no trace of pesticide residue on 89.9% of Canadian fruit and vegetables and 99.97% compliance with maximum residue limits (MRLs).

In instances where there are trace amounts of pesticide residues that remain on food they are at levels well below those that would pose any safety concern. Just because a chemical is detectable, does not mean it will have an impact on health.

Maximum Residue Limits (MRLs): The maximum amount of pesticide residues that are allowed to remain on a crop when the product is used according to label directions. They are generally set 100 times or more below a level that would pose any safety concern.