

Glyphosate Isn't Even the Worst Thing in Roundup

Much of the uproar surrounding the herbicide has focused on the active ingredient, glyphosate. But for glyphosate to penetrate plant cells, it needs an adjuvant. If you're familiar with vaccine adjuvants like mercury or aluminum, you probably have a sinking feeling in your gut. And guess what?

You're right!

Say hello to polyethoxylated tallow amine or polyoxyethyleneamine (POEA). POEA is derived from tallow, or animal fat (usually beef or sheep). It's a detergent that constitutes 15% of Roundup formulations, and it's one of the reasons Roundup works as well as it does. When glyphosate-based products that don't contain an ethoxylated tallow amine (ETA) formulation are used, water is more easily able to wash the herbicide off the plant. This renders the formula 6% effective.

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So why would farmers have to do without that extra 6% effectiveness? Easy answer there – the European Union banned POEAs in 2016. In their scientific assessment, the European Food Safety Agency (EFSA) said,

Therefore the exposure assessment for operators, workers, bystanders, residents and consumers could not be performed. Compared to glyphosate, a higher toxicity of the POE-tallowamine was observed on all endpoints investigated."

Statement of EFSA

According to another study in 2004,

As a result, human poisoning with this herbicide is not with

the active ingredient alone but with complex and variable mixtures. Therefore, It is difficult to separate the toxicity of glyphosate from that of the formulation as a whole or to determine the contribution of surfactants to overall toxicity. Experimental studies suggest that the toxicity of the surfactant, polyoxyethyleneamine (POEA), is greater than the toxicity of glyphosate alone and commercial formulations alone."

Glyphosate Poisoning

To be clear, POEA and other similarly formulated adjuvants are more toxic than glyphosate, yet regulators have no way of measuring how much exposure you've had because it isn't the formula's active ingredient. Yet studies that were done on fish and aquatic animals have found that Roundup formulations are significantly more toxic than glyphosate alone. Original Roundup was 10-40 times more toxic than glyphosate alone in fish species and 10-50 times more toxic in frogs. A fruit fly study in January 2020 found that fruit flies exposed to less than lethal amounts of both Roundup Concentrate Plus and POEA had decreased fertility.

POEA isn't the active ingredient in Roundup, which is the reasoning used to explain why this substance has not been tested to the extent glyphosate has been. All that companies need to do is provide documentation saying an ingredient doesn't kill weeds or insects for regulating agencies to see no need to ask for safety studies. Much of media coverage of the dangers of Roundup has focused on glyphosate because it has been labeled a probable carcinogen by a major worldwide health organization. What would POEAs be labeled if regulators actually looked into it?

Sources:

- *Ignoring Adjuvant Toxicity Falsifies the Safety Profile of Commercial Pesticides – Frontiers in Public Health*

- *Ethoxylated adjuvants of glyphosate-based herbicides are active principles of human cell toxicity* – National Library of Medicine