## Facts About Glyphosate Based Herbicides

## What do we know about the worlds most widely used agricultural chemical?

Since its introduction in 1974, Americans have applied 1.8 million tons of glyphosate to kill weeds on farms, roadsides, parks, schools, and in yards. Worldwide, 9.4 million tons of the chemical have been sprayed. Glyphosate is the most used agricultural chemical in the world.<sup>1</sup>

In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) unanimously determined that glyphosate is "probably carcinogenic to humans." It has been strongly linked to non-Hodgkin's lymphoma in the medical literature.

IARC also concluded that there was "strong" evidence for genotoxicity, both for "pure" glyphosate and for glyphosate formulations. Genotoxic denotes a substance that by damaging DNA may cause mutation or cancer.<sup>2</sup>

In 2018, jurors awarded a California school groundskeeper, suffering from non-Hodgkin's lymphoma who regularly used Roundup brand herbicide, millions of dollars in damages. The manufacturer was found to have acted with malice and oppression for failing to warn consumers about the product's cancer risk, and the jury ruled that Roundup exposure contributed to his non-Hodgkin's lymphoma.<sup>3</sup>

Internal court documents revealed the manufacturer of Roundup had ghostwritten scientific journal articles and colluded with EPA officials.<sup>4</sup>

Scientific research has also shown that glyphosate can disrupt the human endocrine system by interfering with the function and production of hormones in our bodies.<sup>5</sup>

Glyphosate has been found to be more persistent in soil than previously thought. Depending on conditions it can persist for months or even many years. One study reported a half-life of up to 22 years.<sup>6</sup>

- 1. Main, D., Newsweek, February, 26th 2016
- 2. IARC, Q&A on Glyphosate, March 1, 2016
- Dewayne Johnson v. Monsanto Company, California State Court, August 10, 2018
- Rosenblatt, J., Mulvainy, L., Waldman, P., Bloomberg, Monsanto Was Its Own Ghostwriter for Some Safety Reviews, Aug 9, 2017, EPA Official Accused of Helping Monsanto 'Kill' Cancer Study, Mar 14, 2017
- TEDX, The Endocrine Disruption Exchange, List of Potential Endocrine Disruptors, updated September, 2018
- Nomura, N.S., Hilton, H.W., The adsorption and degradation of glyphosate in five Hawaiian sugarcane soils. Weed Res. 1977. 17:113–121

