

**Glyphosate and Other Prop 65* Herbicides
Used in CA Production Agriculture;
Reported by: CA Department of Pesticide
Regulation (CDPR) for 2015¹**

Preface: For those trying to change laws, ordinances and guidelines regarding pesticide use (especially glyphosate), independent, scientifically accurate guidance is needed. This “GLY Brief #1” is designed to provide basic information to legislators, city managers, community councils and others (including political candidates) in order to enhance informed decision-making.

Clearly, the more than 21 million pounds of *Prop 65* herbicides* that were reported for 2015 alone (see chart next page) is a staggering amount to be dumped on CA agricultural crops, commodities and sites. During application, these herbicides pollute the air, contaminate nearby non-target crops and other areas, and result in local unintentional exposures (contact, inhalation, ingestion) of humans and animals. Thereafter, soil, water and air continue to be contaminated, and some portion of these herbicides are consumed by humans and animals in food/feed; they also can be found in some common medications, vaccines, food supplements, and cotton products.

The quantities in the chart are *only* for reportable “production agricultural” applications of *Prop 65 herbicides*; that is, herbicides used in the production of a plant or animal agricultural product (food, feed, fiber, ornamental, or forest) or applied to production agricultural sites. There are many non-agricultural and other uses too, some of which are not reportable to any authority. Further, the numbers show *only* the quantity of active ingredients (A.I.) that target the pests (e.g., glyphosate ⇒ ‘weeds’); the applied quantity of finished, formulated products (including ingredients added primarily to enhance product performance) would be much greater. Another disturbing fact is that the pounds of Prop 65 herbicides given herein represent only 1/10th of *all* pesticide active ingredients (for *all* purposes) reported to CDPR for 2015².

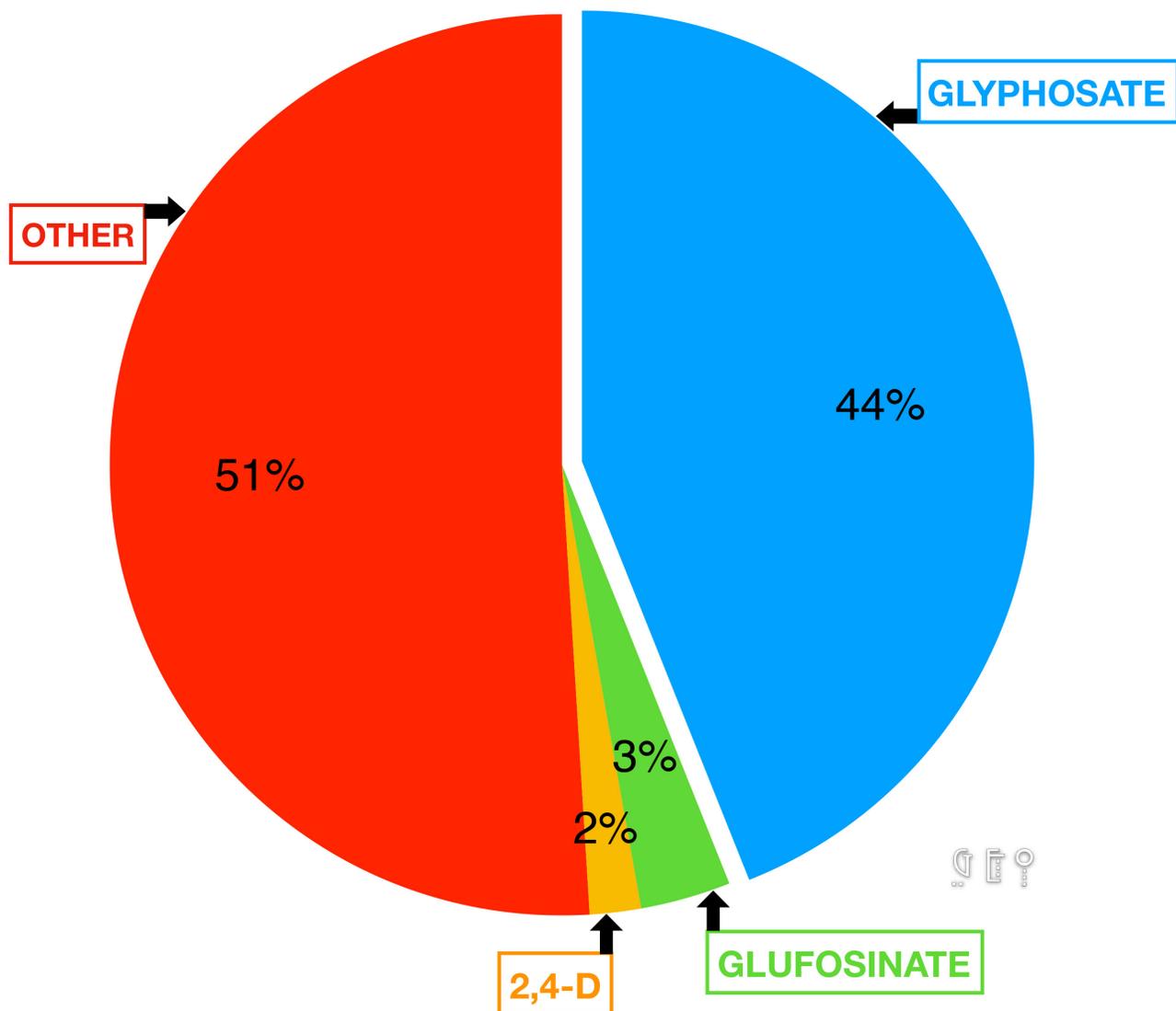
While all herbicides in the chart are related to cancer and/or reproductive toxicity, it is important to note that half of those used in 2015 were three very significant ones (mostly glyphosate at >9 million pounds A.I.) that can be substituted for an amino acid at the cellular level during protein synthesis, resulting in altered, misshaped proteins (e.g., structural collagen, digestive enzyme, etc.) that will no longer function as intended.

Prop 65* Herbicide Use in CA PRODUCTION AGRICULTURE
 Reported by CDPR for 2015

Herbicide	Ibs A.I.**			
Glyphosate - based	9,336,804			
Glufosinate - based	685,512			
2,4-D - based	388,688			
Other - based	10,825,825			
TOTAL A.I.	21,236,829			

* Prop 65 chemicals are known to the State of CA to cause cancer, birth defects, or other reproductive harm

** A.I. = active ingredients that target the pests



This phenomenon can result in a number of illnesses (including cancers) and other maladies as has been extensively reported for glyphosate in a series of publications by Anthony Samsel and Stephanie Seneff, e.g., see 2017³. Further aspects of glyphosate effects on health, environment and food contamination can be found in numerous publications, including: IARC⁴; Balbuena, et al.⁵; Benbrook⁶; Hoy, et al.⁷; Mitra⁸; Pleasants & Oberhauser⁹; and Quarles¹⁰. In the chart, the “Other-based” Prop 65 herbicides represent a group of 128 different active ingredients that are *not* based on glyphosate, glufosinate or 2,4-D.

A little discussed issue regarding glyphosate includes its impact on the climate crisis. That is, inundating the soil with an ecotoxic herbicide harms soil microbes, including bacteria and fungi, that are important in the carbon cycle. Damaged and destroyed soil organisms result in reduced carbon sequestration. This will be discussed more fully in a future brief; however, adding to its climate impact, glyphosate chemistry *per se* is fossil fuel in origin and is typically fossil fuel dependent for agricultural applications.

About 2500 years ago, Hippocrates said, *”Let thy food be thy medicine and thy medicine be thy food.”* Excluding organic/biodynamic food production, the current conventional and GMO agricultural food system is the antithesis of this Hippocratic charge. Hopefully, well-reasoned decision-making will be able to rectify this critical problem in favor of what is good for public health, animal health, and the environment.

* Prop 65 chemicals are known to the State of CA to cause cancer, birth defects, or other reproductive harm (<http://www.cdpr.ca.gov/docs/dept/factshts/prop65.htm>).

¹ All data are from “2015 CA Prop 65 List of Agriculture-use Herbicides”, the latest available and supplied by CDPR, Nov.30, 2017; glyphosate data for 2015 was added to the list in 2017.

² <http://www.cdpr.ca.gov/docs/pur/pur15rep/tables/table2.pdf>

³ Samsel A and S Seneff. 2017. Glyphosate pathways to modern diseases VI: Prions, amyloidoses and autoimmune neurological diseases. J Biol Phys & Chem. 17 (2017):8-32.

⁴ IARC. 2017. IARC Monograph 112: Some organophosphate insecticides and herbicides (Mar.2015 Working Group). WHO International Agency for Research on Cancer, Lyon, France. 452pp.

⁵ Balbuena MS, L Tison, ML Hahn, U Greggers, R Menzel and WM Farina.2015. Effects of sub-lethal doses of glyphosate on honeybee navigation. J Exper Biol:July 10, 2015 (doi:10.1242/dev.117291)

⁶ Benbrook, C.M. 2016. Trends in glyphosate herbicide use in the United States and globally. Envir. Sci. Eur. 28(3). (<https://doi.org/10.1186/s12302-016-0070-0>)

⁷ Hoy J, N Swanson and S Seneff. 2015. The high cost of pesticides: human and animal diseases. Poult Fish Wildl Sci. 2015, 3:132. (doi:10.4172/2375-446X.1000132)

⁸ Mitra T. 2017. Poison foods of North America: Guide to navigating the glyphosate mine field in our food web.(<https://www.amazon.com/POISON-FOODS-NORTH-AMERICA-navigating/dp/1520976429>)

⁹ Pleasants JM and KS Oberhauser. 2013. Milkweed loss in agricultural fields because of herbicide use: Effect on the monarch butterfly population. Insect Conserv Divers. 6(2):135-144. (DOI: 10.1111/j.1752-4598.2012.00196.x)

¹⁰ Quarles W. 2017. Glyphosate, GMO soybean yields and environmental pollution. IPM Pract 25(11/12):1-8.