

SABINO RISK ASSESSMENT: **CONTROLLING INVASIVE AFRICAN GRASSES, LIKE BUFFELGRASS, USING HERBICIDE**

The public is suspicious of chemicals

It is natural to be wary of chemicals. We all are. One survey found 65% of people think herbicides are unsafe when used as directed—even though life expectancy is going up and rates of cancer are going down.

But we can't rely on intuition—or scary news headlines—to accurately determine herbicide risk-level. Chemophobia and alarmism can have serious negative consequences on preserving public health and safety. Example: Because of scare-mongering about mercury in vaccines, 100,000 unvaccinated American children are at serious risk for contagious diseases.

There is a reason we should depend on science to determine relative risk levels.

Science should drive public policy

Saguaro National Park and US Forest Service scientists have studied the problem of invasive African grasses in southern Arizona. They have determined that using a herbicide is essential for controlling them and that a 5-percent solution of glyphosate—currently available at any store with a gardening aisle—is an effective, low-risk tool for control.

Why the concern with glyphosate—or Roundup—now?

Recently in the media: A San Francisco jury gave a \$300 million award to a man who said glyphosate caused his cancer. (A second judge subsequently reviewed the case and expressed serious reservations about whether the evidence showed a cancer-link or a manufacturer's conspiracy, as claimed, and reduced the award to \$78 million.)

What do public safety experts say about glyphosate?

There have been scores of studies over decades and the EPA, USDA, the National Institutes of Health and the World Health Organization have all consistently affirmed that glyphosate is unlikely to cause cancer or other health problems when used as directed.

Most recently, a 2017 NIH longitudinal study of 54,251 heavy glyphosate users

An extensive longitudinal study of glyphosate was conclusive. 54,251 agricultural workers who are Licensed Pesticide Applicators using glyphosate intensively in agricultural situations were assessed for lifetime risk of cancer in a study published in 2017 by the *Journal of the National Cancer Institute*. It found no statistically significant association between glyphosate and tumors or lymphoid malignancies.

How does glyphosate work?

Glyphosate blocks one specific metabolic pathway that only plants have. Other life forms, from insects to humans, don't have this metabolic pathway, which is one reason scientists and other experts consider it to be low-risk for both human applicators and the environment.

Glyphosate is not persistent or mobile

Glyphosate has none of the qualities that make other low-risk herbicides more problematic. Glyphosate is absorbed into target plants quickly and its life in the soil is only hours—not months or weeks. Because

glyphosate is not persistent in the environment, it is not mobile either, so it doesn't spread into surrounding non-target plants.

Why do newspaper headlines make glyphosate seem high-risk?

The recent scare began a couple of years ago with a statement put out by the International Agency for Research on Cancers (IARC), a small group within WHO. Using no new data, they went back over studies that did not prove glyphosate causes cancer and put that data into a different paradigm. IARC asked, "Does the data prove that glyphosate can't cause cancer?"

Of the more than 850 chemicals and situations IARC has reviewed science on using that paradigm, all—save one—they have subsequently labeled at least "possibly carcinogenic." This includes drinking hot beverages and working night shifts. Because IARC's only results from using that paradigm are basically either "possibly or probably carcinogenic," IARC's findings are not helpful in assessing risks in the real world. And still, IARC's parent organization, WHO, says glyphosate is unlikely to cause cancer.

Why are invasive grasses so risky to biodiversity and public safety in our desert home?

Invasive grasses are quickly crowding out native plants, depriving wildlife of food, shelter and nesting opportunities.

The Sonoran Desert ecosystem is not fire adapted. When Buffelgrass and other fire-adapted invasive grasses create monocultures in the foothills, parks and along roads, homes and property lose this natural protection from wildfires. Buffelgrass, for example, thrives on frequent fire and burns hot enough to melt metal.

We don't have the luxury of time. Buffelgrass doubles its footprint every two years, according to U. of A. scientists. Unchecked by the only proven method of control, these African invasive grasses will continue to destroy Sonoran Desert wildlife habitat and will further endanger homes and property.

Risk assessment

Failure to control Buffelgrass and other invasive grasses is a high-risk strategy. Glyphosate is scientifically proven to be an effective, low-risk tool for control.

—Mark Hengesbaugh
Certified Pesticide Applicator
Sabino Canyon Volunteer Naturalist