Forest LANDOWNER

GLYPHOSATE: CAUSE FOR CONCERN?

DEATH TAX: FLA'S ONGOING FIGHT

SPECIAL REPORT:
COST AND TRENDS FOR FORESTRY PRACTICES IN THE SOUTH


KILLS THE ROOTS
GUARANTEED
Roundup
READY-TO-USE
WEED & GRASS KILLER III
• RAINPROOF IN 10 MINUTES
• VISIBLE RESULTS IN 3 HOURS
KILLS THE ROOTS GUARANTEED
Mantener Fuera del Alcance de los Niños
PRECAUCIÓN
ACTIVE INGREDIENTS
OTHER INGREDIENTS
TOTAL
NET 24 FL OZ (1 PT, 8 FL OZ/709ml)

ROUNDING UP THE EVIDENCE

A FOREST SCIENTIST EXAMINES THE RECENT GLYPHOSATE LAWSUITS AND EXPLAINS WHY THE POPULAR FOREST HERBICIDE IS SAFE WHEN USED AS DIRECTED, ECHOING EPA AND OTHER REGULATORY AUTHORITIES.

BY DAVID COYLE

Roundup causes cancer! Join the class action lawsuit! If you've seen the news lately, you might think that glyphosate, the commonly used active ingredient in many herbicide formulations, including Roundup, is a cancer-causing agent.

Heck, a simple Google search turns up a slew of different law offices, all of which are waiting and eager to help you in your quest against Monsanto and Roundup. Verdicts from high-profile lawsuits in California have gone in favor of the plaintiffs – the folks suing Monsanto – asserting that their long-term use of Roundup caused their cancer.

Admittedly, I'm no toxicologist. Nor am I an oncologist. Heck, I'm not even a lawyer. And I definitely don't work for any chemical company. I'm an extension specialist and faculty member at a land-grant university, which means I take data and make recommendations.

I am also a scientist, and as one of those I look at everything very objectively. I examine data, statistics, and experimental designs. I check to see if the science was done appropriately to make the conclusions that are made. We'll come back to this, but first, why are we even talking about glyphosate?

Controlling unwanted vegetation is vital to nearly all facets of forest management. Do you want to maximize timber production? Then you've got to control competing vegetation. Do you want to create the best deer habitat possible? Then get rid of vegetation that's bad or unattractive for deer. Do you want to have a beautiful forest for hiking and

This forest understory in Huntsville, Alabama, is dominated by invasive honeysuckle, which is typically controlled by glyphosate..

camping? Then eliminate the invasive species that can turn your scenic woods into a dense, green carpet.

There are several ways to eliminate unwanted vegetation. Prescribed fire can help in some cases, but this tactic is not feasible in all areas. Hand pulling or other mechanical methods can work, but these are generally high in cost and effort, and may not be appropriate methods for certain forest types.

Goats are being used more commonly, especially in environmentally or socially sensitive areas such as greenspaces in cities, or steep embankments near water. Just put up a temporary fence, turn them loose, and watch as a herd of adorable goats munches away at any and all vegetation. While these management strategies all have their place, probably the most common way land managers deal with unwanted vegetation is with herbicides.

Herbicides are chemical formulations that interfere with plant growth. These herbicides commonly have trade names like Garlon, Arsenal, or Roundup; part of the herbicide formulation is an active ingredient (AI), such as triclopyr, imazapyr, or glyphosate.

Active ingredients disrupt or interfere with cell growth in some form. Triclopyr, for example, mimics a plant growth hormone called auxin, and when sprayed on a plant causes the plant to undergo disorganized, uncontrolled growth, which leads to the death of the plant. Imazapyr halts the production of a critical amino acid plants need to grow. Each herbicide and active ingredient on the market is made to target a specific process in plants.

Glyphosate is one such active ingredient. Commonly known as Roundup, this chemical was discovered to have herbicidal properties in 1970 by Dr. John Franz, who at the time was a chemist working for what was then the Monsanto Company (Bayer acquired Monsanto in 2018 and eliminated the Monsanto brand; it's now just Bayer).

Glyphosate works by blocking the activity of an enzyme in one of the biochemical processes in plants. This process, called the shikimic acid pathway, only occurs in plants and is essential for plant growth – without it functioning properly, the plant

cannot grow – hence why glyphosate is effective.

Monsanto marketed glyphosate as Roundup in 1974 and held the patent on the chemical until 2000 – meaning from 1974 to 2000, the only place you could get glyphosate was in Roundup herbicide, which was made by Monsanto. When the patent expired, it became legal for any company to produce glyphosate and many companies did just that.

Today glyphosate can be purchased as many different trade names (i.e. Accord, Rodeo, Touchdown, or any number of generic names like Gro-Chem Glyphosate 360). It can be ordered from agricultural specialty dealers or purchased off the shelf of big box stores, and it's marketed to both professionals and homeowners. It is a widely used and effective herbicide in forestry and is used on countless acres annually to control unwanted vegetation.

This wall of privet, blooming in Broken Bow, Oklahoma, could be controlled with an application of glyphosate.

It should be noted that every chemical active ingredient used for any pesticide goes through an assessment by the U.S. Environmental Protection Agency (EPA). Glyphosate has gone through this review, and lest some suggest there's a political aspect to this sort of thing, it's worth pointing out that the EPA under Presidents Clinton, Bush, Obama, and Trump all found glyphosate, when used according to label directions, posed no risk to human health and was not a carcinogen.

That's 36 years and four Presidential administrations (two Democrat, two Republican) all coming to the same conclusion. To me, as a scientist, that's pretty strong data and conclusions.

In April, the U.S. Environmental Protection Agency (EPA) reiterated that "there are no risks to public health when glyphosate is used in accordance with its current label and that glyphosate is not a carcinogen. The agency's scientific findings on human health risk are consistent with the conclusions of science reviews by many other countries and other federal agencies."

The key point in those conclusions comes down to six words: "when used according to label directions." In the United States. the pesticide label is the law. The label dictates how to apply the pesticide, how to mix the pesticide, what sort of personal protective equipment to wear, and under what conditions the pesticide should be applied.

In looking at some of these recent verdicts, one particular couple admitted they never wore any protective clothing. So by the letter of the law, they're using glyphosate illegally. Does this then make the manufacturer liable for damages? Further, it's nearly impossible to determine what exactly caused a particular cancer. In some cases the cause is more easily ascertainable, but in the case of non-Hodgkin's lymphoma (the cancer the aforementioned couple had) scientists do not know what causes it. If scientists who study cancer don't know what causes cancer, is it likely that a jury (comprised of mostly non-scientists) can make that determination?

So why should those of in forestry be concerned with glyphosate trials and verdicts? Because if we lose glyphosate as a management tool, we'll lose an important, affordable, and effective tool in the management of unwanted (and often invasive) plants.

Yes, there are other herbicides, but none are like glyphosate. It's broad-spectrum (works on all types of plants), becomes inactive in soil, breaks down in sunlight, and poses little danger to the environment. And if glyphosate gets banned, what's next?

Invasive vegetation has taken over a young pine stand in Nacogdoches, Texas. Glyphosate is an effective weapon for forest landowners against invasives.

Let's be clear: a dangerous product should not be on the market. But there is no scientific evidence to suggest glyphosate is dangerous when used appropriately. Yes, there are risks in using pesticides. There are also risks from driving an automobile and excess sun exposure. It's all about minimizing that risk and taking proper precautions.

Anti-glyphosate folks will point to a 2015 report from the International Agency for Research on Cancer (IARC) that classifies glyphosate (along with red meat and coffee) as "probably carcinogenic to humans" (of note, things classified as "known human carcinogens" include processed meat like bratwurst, alcohol, and sunlight).

Scientifically, their analysis is flawed, their interpretations of data are questionable, and the conflicts of interest with this group are many. Since this report, many additional evaluations and reports have happened. For example, in 2017 the European Chemicals Agency determined glyphosate not to be a carcinogen, and in 2018 the European Food Safety Authority determined that current exposure levels of glyphosate are not expected to pose a risk to human health.

So the next time someone tells you something will cause cancer and/or should be banned, please take a moment to consider the source and the data. If you're not comfortable doing this, get ahold of a forestry professional or your local university extension agent. It's our job to interpret data and help you – the landowner – make informed decisions.

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