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Subject: Glyphosate Clips - getting ready for next week's release...

Glyphosate Clips

ABC News: EPA says no health risk from trace amounts of herbicide in breakfast cereals **(October 24, 2018)**

Agripulse: New federal report takes 'cautious' approach to effects of glyphosate **(April 10, 2019)**

Bloomberg Environment: Why Bayer Shares Are Facing Such Trials Over Roundup: QuickTake **(March 20, 2019)**

CNN: Dozens more breakfast foods test positive for trace amounts of weed killer, report says **(October 24, 2018)**

CNN: Jurors give $289 million to a man they say got cancer from Monsanto's Roundup weedkiller **(August 11, 2018)**

Courthouse News Service: Trial Over Roundup Cancer Claim Begins With Judge's Sanction Threat **(February 25, 2019)**

E&E News: Man awarded $80M in lawsuit claiming Roundup causes cancer **(March 28, 2019)**

E&E News: Purdue defends herbicide, calls any ban 'devastating' **(April 10, 2019)**

EcoWatch: Glyphosate Detected in Granola and Crackers, FDA Emails Show **(April 30, 2018)**

EcoWatch: Glyphosate Exposure Increases Cancer Risk Up to 41%, Study Finds **(February 14, 2019)**

Environmental Health News: NYC leaders join calls for ban on Monsanto herbicide **(April 18, 2019)**

Environmental Working Group: Monsanto Bullies EPA on Glyphosate Ruling **(April 24, 2018)**

Environmental Working Group: Roundup for Breakfast, Part 2: In New Tests, Weed Killer Found in All Kids' Cereals Sampled **(October 24, 2018)**

Fox News: Popular breakfast foods contain active ingredient found in roundup weed killer, study finds **(October 25, 2019)**

Genetic Literacy Project; Newsweek : Viewpoint: 'Native' calls for glyphosate ban threaten higher food prices, resurgence of more toxic pesticides; Monsanto, Roundup And Cancer: Cutting Chemicals From Agriculture Is A Cost We Can't Yet Afford: Opinion **(April 17, 2019)**

Greenmatters.com: The States That Use the Most Glyphosate – And What You Can Do About It **(April 10, 2019)**

The Guardian: Homebase to review sale of Monsanto weedkiller after US cancer verdict **(August 11, 2018)**

The Guardian: Weedkiller found in granola and crackers, internal FDA emails show **(April 30, 2018)**

The Guardian: Weedkiller 'raises risk of non-Hodgkin lymphoma by 41% **(February 14, 2019)**

Idaho Mountain Express: Take a stand against glyphosate **(April 17, 2019)**

Los Angeles Times: California jury awards $289 million to man who claimed Monsanto's Roundup pesticide gave him cancer **(August 10, 2018)**

New Times San Luis Obispo: Let's ban glyphosate **(April 11, 2019)**

NPR: As Weeks Outsmart the Latest Weedkillers, Farmers Are Running Out Of Easy Options **(April 11, 2019)**

NPR: The EPA Says Farmers Can Keep Using Weedkiller Blamed For Vast Crop Damage **(November 1, 2018)**

PoliticoPro: Perdue defends glyphosate again, attacking Vietnam's ban **(April 11, 2019)**

Reuters: EPA should revoke Monsanto weed killer approval, groups tell U.S. court **(August 29, 2018)**

Rolling Stone: Monsanto's EPA-Manipulating Tactics Revealed in $289 Million Case **(August 14, 2018)**

The Wall Street Journal: EPA Allows Farmers to Keep Using Bayer's Controversial Weedkiller **(October 31, 2018)**

The Washington Post: What's Next in Court for Bayer Toxic Chemical Claims **(February 25, 2019)**

ABC News
EPA says no health risk from trace amounts of herbicide in breakfast cereals
https://abcnews.go.com/Politics/trace-amount-herbicide-breakfast-cereals-concern/story?id=58697973
Anna Jackson, Stephanie Ebbs
Posted: 3:07pm, October 24, 2018

An environmental advocacy group reports it has found small amounts of a herbicide in consumer foods including breakfast cereals, saying there is cause for concern even though the amount is within limits allowed by the Environmental Protection Agency.

Just how much, if any, of the herbicide can be considered safe is a matter of long-running scientific and legal debate. The Environmental Working Group's standard for what's acceptable is, by far, the most conservative, beyond even that of California, which has the tightest regulation in the country.

The Environmental Working Group commissioned tests of popular breakfast products, including Quaker Oats Instant Oatmeal and other breakfast cereals and found low levels of glyphosate, a weedkiller sprayed on crops, in all 28 samples it tested. The group says companies should do more to eliminate chemicals from food products, even if the levels are within the limits of what the government considers safe.

Quaker insists its products are safe and called the EWG study "invalid."

Glyphosate is the active ingredient found in the weedkiller RoundUp and has been a source of controversy amid claims that it is connected to certain kinds of cancer. The company that makes RoundUp, Monsanto, says its research shows glyphosate is safe but a California jury recently ordered the company to pay $289 million to a man who argued his terminal Non-Hodgkin's lymphoma was connected to RoundUp.

Monsanto is in the process of appealing that case. A judge upheld the verdict this week but reduced the amount the company has to pay to $78 million, according to the Associated Press.
EWG released the results of an earlier set of tests in August. The group tested 45 samples of conventional granola bars and cereals and 16 organic products. It said it found some amount of glyphosate in three-fourths of the products with small amounts in five of the organic products.

Regulators like EPA and international groups say it's not likely glyphosate causes an increased risk of cancer in humans, but at least one agency connected to the World Health Organization listed it as a "probable carcinogen" in 2015. The California health office has also listed glyphosate as known to cause cancer and the state's recommended level is lower than that recommended by the EPA.

The EWG based its threshold on California's conservative guidelines, but it started with California's threshold for what's considered acceptable and reduced it by 100 times. They claim this is to account for what would be acceptable in drinking water samples and taking into account small children.

The EPA says consumers don't need to be concerned and that the levels are well within limits considered safe.

"EPA's review of available data does not support recent claims that glyphosate, the active ingredient of RoundUp, found in cereal (and other foods containing commodities like wheat and oat) is cause for concern," an EPA spokesman said in a statement.

The EPA's recommended limit on glyphosate in food is 30 parts per million, or 30,000 parts per billion, well above the levels found in the samples tested by the Environmental Working Group. EWG identified glyphosate in much lower levels of the 28 samples tested, with the highest at 2,837 parts per billion in Quaker Oatmeal Squares Cereal.

In a statement sent after this story originally published, a Monsanto spokesperson said that even at the highest result in the EWG testing, consumers would have to eat 81.5 pounds of cereal every day for the rest of their life for glyphosate levels to reach the EPA limit.

"The U.S. Environmental Protection Agency (EPA) sets daily exposure limits at least 100 times below levels shown to have no negative effect in safety studies. The levels sometimes found in food are not even remotely close to any level of concern," the company said in a statement. "Indeed, on Oct. 2, 2018, the Food and Drug Administration (FDA) published results of its annual residue testing program and concluded, "levels of pesticide residues in the U.S. food supply are well below established safety standards." The FDA was clear that the glyphosate levels "were below the tolerance levels set by the U.S. Environmental Protection Agency (EPA)."

The Food and Drug Administration recently tested for glyphosate and other herbicides in hundreds of crop samples, including grains and oats, but none of the samples violated EPA limits. The test did find some amount of glyphosate in a majority of corn and soybean samples.

Quaker strongly rebutted the EWG study in a statement to ABC News. The company said they stand by the quality of its products and that any amount of glyphosate left on the product after it is cleaned is well below the allowed limit.

"The EWG report artificially creates a "safe level" for glyphosate that is detached from those that have been established by responsible regulatory bodies in an effort to grab headlines, and has the potential to falsely alarm consumers, leading them to avoid consumption of many oat-based foods that are proven to be beneficial for the human diet," a Quaker spokesperson said in a statement.

"We believe EWG's approach is invalid, and we stand behind our statement that the Quaker products tested by EWG are safe. Producing healthy, wholesome food is Quaker's number one priority, and we've been doing that for more than 140 years."

EWG says it chose to test for a lower limit of glyphosate because it believes the EPA limit is too high, saying that "just because something is legal, doesn't mean it's safe."

"Our main goal here is that we really don't want parents to have to have this added risk or concern that this food they're serving their children could have a pesticide that's been linked to cancer in those products. So, ultimately we really want companies to take the initiative and the steps to remove glyphosate from their products," EWG toxicologist Alexis Temkin told ABC News.

The group tested 28 samples of products made with oats, and found the presence of glyphosate in 28 of them, with levels they considered unsafe in 26. They reported that any level greater than 160 parts per billion was not safe. EWG purchased the products in San Francisco and Washington, D.C.,-area grocery stores and they were analyzed at Anresco Laboratories in San Francisco.

Agripulse
New federal report takes 'cautious' approach to effects of glyphosate
https://www.agri-pulse.com/articles/12090-new-federal-report-takes-cautious-approach-to-effects-of-glyphosate
Steve Davies
Posted: 6:29am, April 10, 2019

A new federal report on glyphosate's toxicological effects likely will play a role in the ongoing debate — both in the court of public opinion and in courts of law — over the safety of the principal ingredient in Roundup.

The "toxicological profile" of glyphosate by the Agency for Toxic Substances and Disease Registry, part of the Centers for Disease Control and Prevention, summarizes studies on the herbicide's effects and recommends areas for further research.

But the part of the report that most people will probably turn to first, given the heated debate over Roundup's carcinogenicity, starts on page 53: Section 2.19-Cancer.

The conclusion of the health agency is open to interpretation. The profile said "most studies found no association between exposure to glyphosate-based products and risk of cancer," but "a possible association between exposure to glyphosate and risk of non-Hodgkin's lymphoma could not be ruled out, based on conflicting results."

Bayer spokeswoman Christi Dixon said, "We welcome another scientific perspective on what's the most studied substance of its kind, glyphosate. Our experts have not had the opportunity to fully review the ATSDR profile in full detail, but we support constructive dialogue and the scientific rigor that's inherent in the U.S. regulatory process."

The company will participate in the public comment period, submitting "many of the same studies you see on our transparency platform," Dixon said. On Monday, Bayer released 107 studies Monsanto had submitted to the European Food Safety Authority as part of the authorization process in Europe.

Dixon added, "We continue to have full confidence in the safe use of glyphosate and believe that the extensive body of science, 40 years of real-world experience and the conclusions of regulators, including the U.S. EPA, European Food Safety Authority (EFSA), European Chemicals Agency (ECHA), German BfR, and Australian, Canadian, Korean, New Zealand and Japanese regulatory authorities, as well as the Joint FAO/WHO Meeting on Pesticide Residues (JMPR), confirm that glyphosate-based products are safe when used as directed and that glyphosate is not carcinogenic."

Charles Benbrook, an ag economist who has quantified glyphosate use worldwide and believes there's enough evidence to show that exposure to glyphosate-based herbicides — especially at high levels — increases the risk of NHL and other cancers, says ATSDR "does a good job dancing around" the carcinogenicity question, but ultimately does not agree with EPA's determination last year that it is "not likely" to cause cancer.

Benbrook, who runs Benbrook Consulting in Troy, Ore., has testified for plaintiffs who are suing Monsanto (now owned by Bayer) in state and federal court in California, claiming exposure to Roundup was a substantial factor in causing their NHL. He is due to testify this week in the latest of those trials, *Pilliod v. Monsanto*, involving a husband and wife.

"ATSDR is extremely cautious," he says. "Is ATSDR closer to IARC or EPA? They're in between — they certainly did not support EPA's final evaluation."

Benbrook was referring to the International Agency for Research on Cancer, which concluded in 2015 that glyphosate is "probably carcinogenic to humans." In December 2017, however, EPA found that glyphosate is "not likely" to cause cancer in humans.

But there are some significant differences between the two documents. EPA said "oral exposure is considered the primary route of concern for glyphosate," while ATSDR said "dermal contact appears to be the major route of exposure to glyphosate for people involved in its application." The report also said for the general population, "the main routes of exposure to glyphosate … result from the ingestion of foods with residues of glyphosate and foods made from these crops, as well as dermal, ocular, or inhalation exposure from application of herbicides containing glyphosate."

The plaintiffs in the cases in California thus far have been a groundskeeper for a school district and a homeowner who used Roundup extensively on his property for more than 20 years. Dewayne Johnson won $289 million from a jury in state court before the judge knocked the award down to $78 million. The other plaintiff, Edwin Hardeman, won about $80 million from a six-person federal jury. Bayer is appealing the first verdict and is likely to appeal the second.

Benbrook says the ATSDR profile shows that people at greatest risk from glyphosate exposure are those who apply it directly, using a hand wand, backpack sprayer, or all-terrain vehicle, for example.

"It's a completely different exposure scenario" than you would find on a farm, where the applicator is enclosed in a cab, Benbrook said. "Most people are getting their most significant exposure at home" through application, not diet, Benbrook said.

But Val Giddings, a senior fellow at the Information Technology and Innovation Foundation who has written extensively about this topic, described Benbrook's comments as "speculative" and cited a Journal of the National Cancer Institute report showing glyphosate was not statistically significantly associated with cancer in a study of more than 50,000 applicators

"I am not aware of any general data on glyphosate exposure of different populations that support Benbrook's comments about exposure," Giddings added. "Farmers come into orders of magnitude greater contact with glyphosate than citizens."

And he pointed out that any "concerns" about exposure to glyphosate at any level "must start with a consideration of its toxicity, which data show is less than that of table salt, baking soda, ibuprofen, coffee, to say nothing of wine or beer."

Eliza Dunn, a medical doctor in toxicology at Bayer Crop Science, spent three hours deconstructing complex public health studies related to glyphosate and answering a broad range of questions from concerned ag leaders. Bayer, which now owns Monsanto, hosted the discussion at its West Sacramento facility this week.

On the Monsanto lawsuit: She described non-Hodgkin's lymphoma (NHL) as "about 30 to 60 different kinds of extraordinarily rare types of cancer." She said cancers caused from exposure involve a clear cause and effect seen over and over again and none of the NHL subgroups have shown that type of association.

In civil cases like this, convincing a jury over the empathy for a cancer victim is difficult. The jury would have to "sit through hours and hours and hours" of epidemiological and toxicological testimony, said Dunn, adding that a criminal case would be more thorough.

Another difference in the two documents: EPA says "dermal penetration has … been shown to be relatively low for human skin (<1%) indicating dermal exposure will only contribute slightly to a systemic biological dose." ATSDR says "available dermal studies indicate that only 3-4 percent of dermally applied glyphosate enters the blood."

ATSDR made a number of recommendations for further research:

- "Studies should be designed to evaluate respiratory effects in animals exposed to glyphosate by inhalation."
- "Additional studies should be designed ... to determine whether glyphosate or other ingredients in glyphosate formulations are involved in developmental effects on male reproductive organs.
- "Human and animal studies should be designed to evaluate airborne exposure levels and possible health effects from inhalation exposure. Additional animal studies should be designed to assess the toxic effects of exposure to a variety of glyphosate formulations and individual components suspected to be toxic."
- "Studies are needed to investigate human intake of glyphosate via food and water, such as total diet studies."
- "Monitoring of children's exposure to glyphosate would be useful, in combination with children's health and susceptibility information, to assess the potential risk for deleterious effects."

For more news, go to www.Agri-Pulse.com

Bloomberg Environment
Why Bayer Shares Are Facing Such Trials Over Roundup: QuickTake
https://news.bloombergenvironment.com/environment-and-energy/why-bayer-shares-are-facing-such-trials-over-roundup-quicktake
Joel Rosenblatt & Margaret Cronin Fisk
Posted: 12:22pm, March 20, 2019

Many Bayer AG investors didn't realize just how much litigation risk they were getting when the German company spent $63 billion in June 2018 to acquire Monsanto Co., the giant U.S. seed and herbicide maker. Since then, two adverse verdicts concerning Monsanto's blockbuster weedkiller, Roundup, have rocked Bayer's shares, which were down 38 percent as of March 20. With more than 11,000 Roundup cases still pending, along with a flood of lawsuits over waterways contaminated with PCBs and fresh cases emerging over another Monsanto herbicide, Dicamba, investors are left to ponder the final cost of Bayer's increased legal exposure.

1. Why is Roundup such a big target for litigation?

It contains the weed-killing chemical glyphosate, which has become widely used by commercial farmers and home gardeners. Over more than four decades, about 3.5 billion pounds of glyphosate was sprayed in the U.S. Glyphosate was declared a probable human carcinogen in 2015 by the International Agency for Research on Cancer, an arm of the World Health Organization, which prompted the lawsuits. However, like other regulators around the world, the U.S. Environmental Protection Agency said in 2017 that glyphosate isn't likely to be carcinogenic to humans at current exposure levels. Monsanto developed Roundup in the 1970s, and then created a multibillion-dollar business around seeds that it genetically modified to resist the chemical.

2. Why is the Roundup litigation so alarming to investors?

When Bayer sought to acquire Monsanto, much of the attention was focused on the regulatory obstacles of combining global makers of crop chemicals. The outlook changed in August 2018 when a San Francisco jury awarded $289 million to a groundskeeper, Dewayne Johnson, who blamed Roundup for his cancer. (Bayer has since won a ruling cutting that award to $78.6 million.) In the second case, a jury on March 19 found that a

man's decades-long use of Roundup on his property caused his non-Hodgkin's lymphoma; damages are still to be determined in another phase of the trial. Jonas Oxgaard, an analyst at Sanford C. Bernstein & Co., has estimated Bayer may face $5 billion in legal costs and plaintiff payouts as a result of its Monsanto acquisition, which would rank among the biggest ever by a company facing damage claims made by private individuals.

3. What's Bayer's strategy?

Bayer vowed after the Johnson verdict to step up its defense, emphasizing scientific research that shows no link between Roundup and cancer in humans. Even as it pursues an appeal to set aside that verdict, the company is concentrating on getting wins in federal court in San Francisco, where cases on behalf of more than 9,000 plaintiffs have been collected and the company may stand a better chance of success. The second trial was heard in that city by a judge who had expressed skepticism about the link between Roundup and cancer and was structured in a way that excluded some of the most damning material against Roundup. Bayer's loss in the case may show flaws in its strategy.

4. Where are the next trials happening?

A trial is set for March in state court in Oakland, California; another in San Francisco federal court in May; and at least one this summer in St. Louis, where Monsanto was headquartered for 117 years and Bayer now runs its North American crop-science business. Plaintiff lawyers have flocked to the circuit court for the city of St. Louis, which has produced some of the largest verdicts in U.S. product-defect claims. While the U.S. Supreme Court in 2017 made it harder to combine lawsuits in state courts by non-residents, Bayer, as a local defendant, has little chance of blocking the Monsanto trials in St. Louis given recent Missouri court decisions.

5. How big are Bayer's other Monsanto-related risks?

Some weeds are growing resistant to glyphosate. That's led to development of genetically modified seeds that can be used in conjunction with another weedkiller, Dicamba. However, Dicamba can vaporize after application and drift onto nearby fields of non-resistant crops. Scores of growers across the Midwest have sued Monsanto over alleged damage to soybeans, cotton, fruit trees and vegetable crops from spraying of its Dicamba product, known as Roundup Ready Xtend Crop System. In 2018, U.S. farmers sprayed Dicamba on about 50 million acres of soybean and cotton crops. Of that, about 1 million acres of soybeans were damaged by the herbicide. Should litigation further restrict Dicamba and related products, Bayer could lose $1 billion in annual sales from a business that is key to expanding the agrochemical businesses it acquired from Monsanto.

6. What's Bayer doing about Dicamba?

Before the takeover, Monsanto developed new formulations that it said would keep the weedkiller on the plants where it's been applied, preventing drift onto untreated crops. In October, Bayer won EPA renewal of the registration for its Dicamba-based product, XtendiMax with VaporGrip, albeit with restrictions on the chemical's use.

7. What is Bayer's problem with PCBs?

PCBs -- chemical compounds used in transformers, paints, sealants and multiple other products -- were prized for their fire-resistant properties, particularly by defense contractors. Production was banned in the U.S. in 1979 over environmental concerns. Pending lawsuits claim Monsanto knew that PCBs were toxic to humans and wildlife and could cause contamination far into the future, but hid the risk and continued to make the product. Plaintiffs include the states of Washington, Oregon and Ohio as well as the cities of San Diego, Portland and Seattle. Monsanto has countered that it never discharged PCBs into any waterways and isn't responsible for

dumping by third parties, and that the cities and states waited too long to sue. But several judges have rejected Monsanto's motions to dismiss. Monsanto spent $280 million in 2016 to settle lawsuits claiming personal injuries caused by PCB exposure.

--With assistance from Lydia Mulvany and Jef Feeley.

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CNN
Dozens more breakfast foods test positive for trace amounts of weed killer, report says
https://www.cnn.com/2018/10/24/health/breakfast-cereal-food-weed-killer-roundup/index.html
Arman Azad
Posted: October 24, 2018

(CNN) Dozens of common breakfast cereals and snack bars have trace amounts of a controversial herbicide found in the weed killer Roundup, according to a report released today by an environmental advocacy group.

The Environmental Working Group (EWG) found that 26 of the 28 products it tested had levels of Roundup's main ingredient, glyphosate, that were "higher than what EWG scientists consider protective of children's health." An earlier report found similar results in over thirty oat-based foods.
Manufacturers say their products are safe, but the EWG report argues that the vast majority of foods tested -- such as Honey Nut Cheerios and Quaker Simply Granola Oats -- have glyphosate levels that might pose a cancer risk with long-term consumption.
None of the foods violated EPA limits on the herbicide, but the EWG uses a far more conservative health benchmark. California's proposed glyphosate limit, which would be the most restrictive in the country, still allows for glyphosate levels that are over a hundred times higher than the EWG's threshold.

The environmental group says its lower threshold includes an added buffer for children, as "exposure during early life can have more significant effects on development later in life," according to Dr. Alexis Temkin, the lead scientist on EWG report.
But manufacturers dispute that threshold. Quaker said in a statement that the "EWG report artificially creates a 'safe level' for glyphosate that is detached from those that have been established by responsible regulatory bodies in an effort to grab headlines."
General Mills, whose products were also cited in the report, maintained that glyphosate levels in its foods do not pose any health risks. "The extremely low levels of pesticide residue cited in recent news reports is a tiny fraction of the amount the government allows," the company said in statement to CNN.
"Consumers are regularly bombarded with alarming headlines, but rarely have the time to weigh the information for themselves," the company said. "We feel this is important context that consumers should be aware of when considering this topic."
Herbicide manufacturer ordered to pay $78 million to cancer victim
In August, a jury in San Francisco ordered Roundup's manufacturer, Monsanto, to pay $289 million in damages to a school groundskeeper who argued that the glyphosate-based weed killer caused his cancer. A judge on Monday upheld that decision but slashed Monsanto's payout to $78 million.

Pharmaceutical giant Bayer recently purchased Monsanto and said in a statement that the company plans to appeal the court's decision. "Glyphosate-based herbicides have been used safely and successfully for over four decades worldwide," the company said in a statement to CNN.

Jurors give $289 million to a man they say got cancer from Monsanto's Roundup weedkiller

"There is an extensive body of research on glyphosate and glyphosate-based herbicides, including more than 800 rigorous registration studies required by EPA, European and other regulators, that confirms that these products are safe when used as directed."

The EPA concluded in 2017 that glyphosate "is not likely to be carcinogenic to humans," but a World Health Organization agency, the International Agency for Research on Cancer (IARC), determined in 2015 that glyphosate is "probably carcinogenic to humans."

Dr. Chensheng Lu, an associate professor of environmental exposure biology at Harvard's T.H. Chan School of Public Health, defended the WHO group, calling it "a world renowned and reputable academic and research institute in cancer epidemiology."

The EPA, in contrast, "is a regulatory agency, and in many ways a political agency," he said. "In 2018, I would not hold EPA's view on glyphosate as a fact."

Confusion abounds over glyphosate cancer risk

The IARC has vigorously defended its finding, but a separate WHO panel assessing pesticide residues determined in 2016 that "glyphosate is unlikely to pose a carcinogenic risk to humans from exposure through the diet," adding to a dizzying array of contradictory findings.

Puzzling conclusions like those are not uncommon in cancer research, according to Dr. Otis W. Brawley, the American Cancer Society's chief medical and scientific officer.

"IARC, I think, is very, very reasonable in their assessments," he said, "but IARC will sometimes make an assessment that is not satisfying to many of us."

He's dying of cancer. Now, he's the first patient to go to trial to argue Roundup made him sick

Brawley noted that the other commonly-consumed substances are also classified as potentially carcinogenic by the IARC. Based on limited evidence, for example, the IARC says that "drinking very hot beverages probably causes cancer of the esophagus in humans," yet hundreds of millions of people drink coffee every day.

"There are some groups that really want to alarm people and advocate for what's called the precautionary principle," Brawley said. "The precautionary principle, taken to its extreme, means you literally wouldn't get up in the morning."

Brawley said that parents should instead make sure their kids are eating fruits, vegetables, and getting the nutrition they need. More children "are definitely going to be harmed by inappropriate diets," he said, "than by a small amount of glyphosate in their oatmeal."

How much glyphosate is too much?

Glyphosate can make its way into processed foods after being used on farms that grow oats. "Most crops grown in fields use some form of pesticides and trace amounts are found in the majority of food we all eat," said General Mills in a statement.

"We continue to work closely with farmers, our suppliers and conservation organizations to minimize the use of pesticides on the ingredients we use in our foods," the company said.

Still, some experts are urging parents to be vigilant. "I think it's very important for people to realize how widespread exposure to glyphosate is," said Dr. Sarah Evans, an assistant professor at the Icahn School of Medicine at Mount Sinai.

You can cut your cancer risk by eating organic, a new study says

"There are things in the foods that they purchase that aren't listed on the label and that they probably don't want to be giving to their children," said Evans, who also works at Mount Sinai's Children's Environmental Health Center.

"I don't think that people should become hysterical," she said, "but people need to be really aware of where their food is coming from and what's getting into their foods."

And when dealing with children, Harvard's Lu believes that parents should err on the side of caution. "What is more scary?" he asked. "Choosing cereals between organic and conventional, or being told by your doctor that you or your children have cancer?"

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The EWG's earlier report found glyphosate in 5 of the 16 organic breakfast samples they tested, but none of those levels exceeded the group's health benchmark. Temkin, who was also lead author on that report, said that parents don't need to "throw out their half-eaten box of cheerios" just yet.
"We are talking about lifetime cumulative exposure," she said. "But if you do want to reduce your risk, we do know that organic oats and organic cereals are a better option."

CNN
Jurors give $289 million to a man they say got cancer from Monsanto's Roundup weedkiller
https://www.cnn.com/2018/08/10/health/monsanto-johnson-trial-verdict/index.html
Holly Yan
Posted: August 11, 2018

(CNN) San Francisco jurors just ruled that Roundup, the most popular weedkiller in the world, gave a former school groundskeeper terminal cancer.

So they awarded him $289 million in damages -- mostly to punish the agricultural company Monsanto.
Dewayne Johnson's victory Friday could set a massive precedent for thousands of other cases claiming Monsanto's famous herbicide causes non-Hodgkin's lymphoma.
Johnson's case was the first to go to trial because doctors said he was near death. And in California, dying plaintiffs can be granted expedited trials.
CNN reported last year that more than 800 patients were suing Monsanto, claiming Roundup gave them cancer.
Since then, hundreds more plaintiffs -- including cancer patients, their spouses or their estates -- have also sued Monsanto, making similar claims.
After three days of deliberations this week, the jury at the Superior Court of California in San Francisco awarded Johnson $250 million in punitive damages and about $39 million in compensatory damages.
It won't change the fact that Johnson's two sons might lose their dad soon. But it will help them live more comfortably, Johnson's attorney Timothy Litzenburg said.
"He's going to live the rest of that time in extreme comfort," Litzenburg said.
After the verdict, Monsanto issued a statement saying it stands by the studies that suggest Roundup does not cause cancer.
"We will appeal this decision and continue to vigorously defend this product, which has a 40-year history of safe use and continues to be a vital, effective and safe tool for farmers and others," Monsanto Vice President Scott Partridge said.
But Litzenburg said an appeal would be costly for Monsanto, since the company would have to pay interest on the damages while the case is being appealed. That's about $25 million a year, he said.
Lesions on much of his body
Johnson, 46, applied Roundup weedkiller 20 to 30 times per year while working as a groundskeeper for a school district near San Francisco, his attorneys said.
He testified that during his work, he had two accidents in which he was soaked with the product. The first accident happened in 2012.
Two years later, in 2014, he was diagnosed with non-Hodgkin's lymphoma.
On bad days, Johnson is too crippled to speak. Lesions cover as much as 80% of his body.
Litzenburg said the most heartbreaking part of Johnson's testimony was when the father of two described telling his sons that he had terminal cancer. Johnson's wife now works two 40-hour-per-week jobs to support the family, Litzenburg said.
How carcinogenic (or not) are Roundup and glyphosate?
The big questions at stake were whether Roundup can cause cancer and, if so, whether Monsanto failed to warn consumers about the product's cancer risk. The jury sided with Johnson on both.
In March 2015, the World Health Organization's International Agency for Research on Cancer (IARC) said the key ingredient in Roundup, glyphosate, is "probably carcinogenic to humans."
"For the herbicide glyphosate, there was limited evidence of carcinogenicity in humans for non-Hodgkin lymphoma," the report states.

But Monsanto has long maintained that Roundup does not cause cancer, and that the IARC report is greatly outnumbered by studies saying glyphosate is safe.
"More than 800 scientific studies, the US EPA, the National Institutes of Health and regulators around the world have concluded that glyphosate is safe for use and does not cause cancer," said Partridge, Monsanto's vice president of strategy.
He highlighted the Agricultural Health Study, which studied the effects of pesticides and glyphosate products on farmers and their spouses from 1993 to 2013.
"Many had already been using Roundup and other formulated products (since) it first came on the market," Partridge said.
A summary of that study said "no association was apparent between glyphosate and any solid tumors or lymphoid malignancies overall, including NHL (non-Hodgkin's lymphoma)."
"We all have sympathy for Mr. Johnson," Partridge said this week. "It's natural he's looking for answers. Glyphosate is not the answer."
But Litzenburg said glyphosate isn't the big problem -- Roundup is. He said the interaction between glyphosate and other ingredients in Roundup cause a "synergistic effect" that makes the product more carcinogenic.
Monsanto spokeswoman Charla Lord disputed that notion, saying regulatory authorities help ensure Roundup as a whole is safe.
"The safety of each labeled use of a pesticide formulation must be evaluated and approved by regulatory authorities before it is authorized for sale," she said.
But Litzenburg said Friday's verdict should be a huge wake-up call to the EPA.
Cancer patients claim an EPA official tried to help Monsanto
"I think it's going to make people sit up and make government agencies take a closer look at banning (Roundup)," Litzenburg said.

What did Johnson have to prove?

While it was medically impossible to prove Roundup caused Johnson's terminal illness, it's also impossible for Monsanto to prove Roundup did not cause his cancer.
"Cancer is a very difficult case to try," Litzenburg said. "You can't X-ray it or biopsy it and come back with what caused it."
In this case, Monsanto was not required to prove anything. The burden of proof was on Johnson, the plaintiff.
But that doesn't mean Johnson's attorneys had to prove Roundup was the sole cause of his cancer. All they had to prove was whether Roundup was a "substantial contributing factor" to his illness.
"Under California law, that means Mr. Johnson's cancer would not have occurred but for his exposure to Roundup," Monsanto spokeswoman Lord said.
She noted that it's possible his cancer could have developed from something unrelated to Roundup.
The majority of lymphoma cases are idiopathic -- meaning the cause is unknown, according to the American Cancer Society.
Litzenburg agreed that most non-Hodgkin's lymphoma cases have not been linked to one primary reason in the past. But he said the tide is starting to turn -- similar to how it took decades for people to learn that tobacco can be a big contributing factor for lung cancer.
"You can't take a lung cancer tumor and run a test that proves that tobacco caused that cancer. ... You're seeing the same thing here," Litzenburg said. "I think we're in the beginning of that era of this dawning on us as a country -- as a public -- the connection between these two things."

Thousands of cases to follow

Litzenburg said he and other attorneys have more than 4,000 similar cases awaiting trial in various state courts.
He estimates another 400 cases have been filed in federal multidistrict litigation, or MDL.
MDL is similar to a class-action lawsuit because it consolidates pre-trial proceedings for the sake of efficiency. But unlike a class-action lawsuit, each case within an MDL gets its own trial -- with its own outcome.
In other words, one MDL plaintiff might get a large settlement, while another plaintiff might get nothing.
No dates have been set for those MDL trials, Litzenburg said.
But one advantage of filing in state court -- as Johnson did -- instead of through MDL is that state courts sometimes produce outcomes faster. And that can be priceless for terminally ill patients.
Litzenburg said Friday's verdict is historic, especially since Roundup is the most widely used herbicide in the world.
"This is a big victory for human health worldwide," he said.

CNN's Phil Gast contributed to this report.

E&E News
Courthouse News Service
Trial Over Roundup Cancer Claim Begins With Judge's Sanction Threat
https://www.courthousenews.com/trial-over-roundup-cancer-claim-begins-with-judges-sanction-threat/
Helen Christophi
Posted: February 25, 2019

SAN FRANCISCO (CN) – On the first day of a federal jury trial over whether Monsanto's weed killer Roundup caused a California man's cancer, a San Francisco judge threatened to sanction the man's lawyer for discussing prohibited evidence in front of the jury.

Calling the attempts to discuss the prohibited evidence "deliberate," U.S. District Judge Vince Chhabria warned he would cut short attorney Aimee Wagstaff's opening statement if she continued to disobey orders to limit opening statements to the causes of non-Hodgkin lymphoma, the disease plaintiff Edward Hardeman has.

Minutes later, Chhabria issued a written order directing Wagstaff, of Andrus Wagstaff, to show cause by 8 pm Monday PST why she should not be sanctioned for "willfully and repeatedly violating the limitations on the subject matter" allowed in opening statements.

"Ms. Wagstaff, you have crossed lines so many times in opening statements that it's obvious it's deliberate," Chhabria told her, audibly angry. "EPA – totally inappropriate, totally inconsistent with everything we discussed over the last several months. One final warning. If you cross the line one more time in opening statements with respect to Phase 1, if you bring in material during your opening statement that is inadmissible in Phase 1, your opening statement will be over. I will tell you to sit down, I will tell you your opening statement is over and I will do it in front of the jury. Last chance; final warning."

In his 2016 complaint, Hardeman, 70, alleges he developed non-Hodgkin lymphoma after spraying Roundup for 26 years around his 56-acre property. The Northern California property sported hiking trails but was infested with poison oak, which Hardeman says required heavy Roundup use. Hardeman, who now lives an hour north of San Francisco in Santa Rosa, was diagnosed with non-Hodgkin lymphoma around Christmas of 2014 after waking up with a golf-ball sized lump on his neck. According to Monsanto, he has been in remission for four years following chemotherapy.

Monsanto counters that Roundup isn't a risk factor for non-Hodgkin lymphoma. The company, now owned by Bayer, contends most cases of non-Hodgkin lymphoma have no known cause, but points out that Hardeman ticks off four risk factors for the disease: he's over 60, has a higher than normal body mass index, was exposed to Hepatitis B and, most crucially to Monsanto's case, had a chronic Hepatitis C infection.

Because Hepatitis C is a risk factor for non-Hodgkin lymphoma, attorneys for both Hardeman and Monsanto discussed Hardeman's history with Hepatitis C Monday. But Wagstaff's attempts to go beyond causation, including an attempt to engender juror sympathy for Hardeman and to discredit the U.S. Environmental Protection Agency's findings that glyphosate is safe – swiftly drew Chhabria's ire.

Last December, Chhabria granted Monsanto's motion to split the three trials over which he is presiding into a causation phase addressing only whether Roundup and its active ingredient glyphosate can cause non-Hodgkin lymphoma and whether they caused the plaintiffs' non-Hodgkin lymphoma, and a second phase addressing Monsanto's liability and damages.

That means the plaintiffs can't address some of their key allegations – including that Monsanto has known for decades that Roundup is carcinogenic and that the EPA failed to adequately assess Roundup's carcinogenicity – until the trial is half over. If the causation evidence isn't strong enough to warrant a damages phase, the plaintiffs won't get to address those allegations at all.

Again reprimanding Wagstaff on Monday, Chhabria said he would block her attempt to admit into evidence a photograph of Hardeman's family displayed to the jury alongside the layout of his Northern California property.

"It was not designed to show the jury the property," Chhabria said. "It was designed to show the jury his family, and I'm not allowing that to come into evidence in Phase 1."

During opening statements, both Wagstaff and Monsanto attorney Brian Stekloff, of Wilkinson Walsh Eskovitz, discussed a controversial 2018 study that looked at data from 57,000 glyphosate users culled from the federal Agricultural Health Study [AHS] database.

The 2018 AHS study found no link between glyphosate and non-Hodgkin lymphoma, and due to its size and comprehensiveness, Monsanto contends it is the most "powerful" study in existence on the question of whether glyphosate causes cancer.

But Wagstaff told jurors Monday that plaintiffs' expert Beate Ritz, an epidemiologist at the University of California, Los Angeles, will testify that the 2018 study is flawed; that it "put quantity over quality" by looking at 50 different chemicals, improperly classified study participants, and used a technique called "imputation" to "guess" at the results of the 37 percent of participants who didn't respond to follow-up questionnaires.

"She's going to testify that imputation is not a bad method," Wagstaff said of Ritz.

"She's going to tell you that sometimes it's OK, but she's going to tell you it's not OK when you have this many people," she said. "At some point she will tell you that the test results show that glyphosate protects against cancer."

Stekloff countered Ritz's planned testimony during his own opening remarks. Ritz has called the 2018 study "beautiful," he told the jury, and she acted as an adviser on it "for years."

"She only started criticizing the Agricultural Health Study after she became an expert in this litigation," Stekloff said.

In 2015, the World Health Organization's International Agency for Research on Cancer deemed glyphosate a probable carcinogen, sparking a wave of lawsuits against Monsanto in the United States. Regulators in Europe, Canada and the United States, including the EPA, have concluded glyphosate is safe.

Roundup is the most widely used agrochemical in history. Monsanto introduced it in 1974, and its use exploded after the company introduced "Roundup-ready" seeds in 1996 engineered to resist glyphosate. More than 2.6 billion pounds of glyphosate was spread on U.S. farmlands and yards between 1992 and 2012, according to the U.S. Geological Survey.

The trial continues Tuesday and is expected to last about a month.

Man awarded $80M in lawsuit claiming Roundup causes cancer
https://www.eenews.net/greenwire/2019/03/28/stories/1060132507
Sudhun Thanawala
Posted: March 28, 2019

A U.S. jury yesterday awarded more than $80 million in damages to a California man who blamed Roundup weedkiller for his cancer, in a case that his attorneys say could help determine the fate of hundreds of similar lawsuits.

Edwin Hardeman proved that Roundup's design was defective; it lacked sufficient cancer warnings; and its manufacturer, agribusiness giant Monsanto, was negligent, the six-person jury in San Francisco found.

It awarded Hardeman more than $5 million in compensation and an additional $75 million in punitive damages. Hardeman, 70, put his arm around his wife, Mary, as the verdict was read and hugged his attorneys.

Monsanto says studies have established that glyphosate, the active ingredient in its widely used weedkiller, is safe. The company said it will appeal.

"We are disappointed with the jury's decision, but this verdict does not change the weight of over four decades of extensive science and the conclusions of regulators worldwide that support the safety of our glyphosate-based herbicides and that they are not carcinogenic," according to a statement from Bayer, which acquired Monsanto last year.

Hardeman said he used Roundup products to treat poison oak, overgrowth and weeds on his San Francisco Bay Area property for years. The same jury previously found that Roundup was a substantial factor in Hardeman's non-Hodgkin lymphoma.

"Today, the jury sent a message loud and clear that companies should no longer put products on the market for anyone to buy without being truthful, without testing their product and without warning if it causes cancer," said Jennifer Moore, one of Hardeman's attorneys.

A different jury in August awarded another man $289 million, but a judge later slashed it to $78 million. Monsanto has appealed.

Hardeman's trial may be more significant than that case. U.S. Judge Vince Chhabria is overseeing hundreds of Roundup lawsuits and has deemed Hardeman's case and two others "bellwether trials."

The outcome of such cases can help attorneys decide whether to keep fighting similar lawsuits or settle them. — *Sudhin Thanawala, Associated Press*

NPR

The EPA Says Farmers Can Keep Using Weedkiller Blamed For Vast Crop Damage

https://www.npr.org/sections/thesalt/2018/11/01/662918255/the-epa-says-farmers-can-keep-using-weedkiller-blamed-for-vast-crop-damage

Dan Charles

Posted: November 1, 2018

For months, farmers from Mississippi to Minnesota have been waiting for the Environmental Protection Agency to make up its mind about a controversial weedkiller called dicamba. Some farmers love the chemical; other farmers, along with some environmentalists, consider it a menace, because it's prone to drifting in the wind, damaging nearby crops and wild vegetation.

This week, on Halloween evening, the EPA finally announced its decision. Calling dicamba "a valuable pest control tool," it gave farmers a green light to keep spraying the chemical on new varieties of soybeans and cotton that have been genetically modified to tolerate dicamba. The approval is for two years; the EPA will consider the issue again in 2020.

A coalition of environmental groups that had filed a lawsuit against the EPA's original approval of dicamba blasted the decision to keep it on the market. Paul Achitoff from Earthjustice said in a statement that "EPA's disregard of both the law and the welfare of ... species at risk of extinction is unconscionable."

The decision is likely to boost sales of dicamba-tolerant seeds next year. Some farmers, in fact, say that they'll be forced to plant them. Otherwise, their crops could be damaged by dicamba fumes drifting in from neighboring fields.

Dicamba has been a huge success for Monsanto, the company that sells both dicamba-tolerant seeds and a version of the herbicide that's specially formulated for use on them. This past year, dicamba-tolerant seeds were planted on some 40 million acres, representing close to half of all soybeans and cotton in the United States. Bayer, the German company that now owns Monsanto, expects that total to grow to 60 million acres in 2019. Farmers turned to dicamba because glyphosate, their previous favorite weedkiller, isn't working so well anymore. Important weeds like Palmer amaranth have become immune to it.

Yet controversy erupted as soon as farmers started using dicamba in this new way. Despite new formulations of dicamba that were supposed to eliminate this problem, the chemical didn't stay where it belonged. In 2017, there were thousands of reports of damage to non-dicamba tolerant soybeans, vegetables, and orchards. In 2018, the number of complaints decreased, but according to estimates compiled by university researchers, about a million acres of crops still showed ill effects from dicamba drift.

The EPA did impose some additional restrictions on dicamba spraying. Starting next year, only certified pesticide applicators will be allowed to spray the chemical, and spraying will have to end by 45 days after planting in the case of soybeans, and 60 days after planting cotton.

Independent weed scientists, however, were unimpressed by those changes. Bob Hartzler, a specialist on weeds at Iowa State University, wrote on his web site, "I don't think that these new restrictions will have a significant impact on the problems we've seen the past two years."
Some states, including Arkansas, Missouri and Minnesota, had already imposed tighter restrictions on dicamba spraying — tighter, in fact, than the EPA's new rules. Arkansas took the toughest line, banning the use of dicamba after April 15. A group of farmers in Arkansas has filed a formal petition with the state's regulators, asking the state to relax that restriction. "There are several balls still in the air," says Larry Steckel, the University of Tennessee's top weed scientist. "It'll be interesting to see what some of the states do."
Meanwhile, a federal court still has not ruled on the lawsuit that seeks to overturn the EPA's original approval of dicamba.

Two of the country's best-known independent sellers of soybean seed, Beck's Hybrids and Stine Seed, urged the EPA last summer to set much tighter restrictions on dicamba use. They argued that dicamba drift was preventing farmers from being able to choose freely between different types of seeds. Many farmers, they said, were afraid to buy anything but dicamba-tolerant seed because of worries that other crops could be damaged by dicamba fumes.
David Thompson, the national marketing and sales director for Stine Seed, told The Salt that about half of the farmers who buy Stine's dicamba-tolerant seed are doing it partly because of worries that their crops could be exposed to dicamba drift.

E&E News
Purdue defends herbicide, calls any ban 'devastating'
https://www.eenews.net/eedaily/stories/1060151629/search?keyword=EPA
Marc Heller
Posted: April 10, 2019

Agriculture Secretary Sonny Perdue yesterday predicted dire results for farmers if the weed killer glyphosate is banned because of fears that it causes cancer.

"I think it'd be devastating," Perdue told the House Agriculture Appropriations Subcommittee at a hearing, as the farm chemical sold under the brand name Roundup faces a series of lawsuits.

In March, a San Francisco jury ordered Bayer AG, which owns Roundup maker Monsanto Co., to pay $80 million in damages to a plaintiff who said the chemical caused his non-Hodgkin's lymphoma.

Perdue, testifying on his agency's budget request for the fiscal year beginning Oct. 1, said glyphosate is largely responsible for exponential increases in crop production in recent years and its continued use is critical to feeding a growing world population.

Glyphosate's potential role as a carcinogen has sparked one of the most intense debates in agriculture. A panel of the World Health Organization has said it's a probably carcinogen, but that finding is at odds with many other scientists, including at the National Institutes of Health and at EPA, which regulates its use.

The chemical is used widely on farms, and Monsanto has designed genetically modified corn that's bred for resistance.

Perdue addressed the issue in response to questions from Rep. Andy Harris (R-Md.), who said glyphosate is "exceedingly important" to farmers to maintain crop yields by killing weeds.

"I'm worried that it may disappear," Harris said.

If glyphosate did disappear, that would satisfy environmental and other groups that have been fighting for its demise. Groups complain that residue turns up in food.

The Environmental Working Group and organic food manufacturers have petitioned the Trump administration to sharply limit the amount of glyphosate residue allowed on oats and to block its use as a drying agent before oats are harvested.

In addition, a third glyphosate trial is underway in federal court, raising the prospects of more verdicts against the company and more monetary damages ordered. Agribusinesses that sell glyphosate may choose to stop doing so, Harris said, amid the legal controversy.

The farm chemical's troubles affect trade, as well, especially in Europe, where pressure to ban it is greater than in the United States.

Perdue said he calls the European Union a "technology-free zone" for its skepticism on technology and agriculture and added, "They will pay the price for this in the future."

On budget issues, Perdue faced bipartisan skepticism regarding the administration's proposal to cut discretionary spending at USDA by 21 percent compared to fiscal 2019. Bishop called the proposed cuts "wholly unacceptable," but Perdue said he views them as USDA sharing fiscal responsibility with other agencies.

Bishop directed much of his questioning at Perdue's moves to relocate the National Institute of Food and Agriculture and the Economic Research Service out of the nation's capital.

The department hasn't provided lawmakers with a cost-benefit analysis to justify the relocation, which would affect several hundred employees later this year.

A location, as well as more solid numbers, would be available once the list is whittled down, Perdue said.

The relocation will save money on rent and help recruit employees by putting offices in a lower-cost area, Perdue said — an assertion that hasn't convinced Democrats on the subcommittee.

"We don't see the problem," Bishop said.

EcoWatch
Glyphosate Detected in Granola and Crackers, FDA Emails Show
https://www.ecowatch.com/glyphosate-foods-fda-tests-2564658591.html
Lorraine Chow
Posted: April 30, 2018

Scientists with the U.S. Food and Drug Administration (FDA) have found traces of a ubiquitous and controversial weedkiller in granola, crackers and other everyday foods, according to internal documents obtained by The Guardian through a freedom of information request.

The FDA has tested food samples for glyphosate for "two years, but has not yet released any official results," Carey Gilliam reported in The Guardian article. Gilliam is an author, investigative journalist and research director for U.S. Right to Know.

"I have brought wheat crackers, granola cereal, and corn meal from home and there's a fair amount in all of them," FDA chemist Richard Thompson emailed to colleagues in January 2017.

He noted that broccoli was the only food he tested that "does not have glyphosate in it."

In other emails, FDA chemist Narong Chamkasem found "over-the-tolerance" levels of glyphosate in corn, detected at 6.5 parts per million, which is over the legal limit of 5.0 parts per million.

Gilliam observed, "An illegal level would normally be reported to the Environmental Protection Agency (EPA), but an FDA supervisor wrote to an EPA official that the corn was not considered an 'official sample.'"

Chamkasem has also found glyphosate in numerous samples of honey and in oatmeal products. But the FDA temporarily suspended testing after those findings, and Chamkasem's lab was "reassigned to other programs," FDA documents show. An FDA spokesperson said those tests were not considered part of the official glyphosate residue "special assignment," which only looks for traces in corn, soy, eggs and milk.

Glyphosate is the active ingredient in Monsanto's top-selling product, RoundUp. The chemical is the world's most widely used weedkiller and has been sprayed on agricultural fields and home gardens for decades. Other tests have found glyphosate in many common food products including "all-natural" Quaker Oats, alcoholic beverages and, consequently, human urine and breast milk.

The widespread use of glyphosate is also creating environmental problems, including herbicide-resistant weeds.

Scrutiny has surrounded the chemical ever since the World Health Organization's International Agency for Research on Cancer classified it as a probable human carcinogen in 2016.

Even though the U.S. Department of Agriculture (USDA) and the FDA routinely test thousands of food samples for residues of commonly used pesticides, the regulators have refused for decades to test for glyphosate because the government says it considers it safe.

In 2014, the Government Accountability Office criticized both agencies for the failure to test regularly for glyphosate.

As safety concerns continued to mount, the FDA began in 2016 its own limited testing program—its so-called "special assignment"—for glyphosate residues. The USDA was moving forward with its own glyphosate testing program in 2017 but quietly dropped the effort.

Monsanto has vehemently defended its product and the safety of glyphosate. The EPA and other international scientific bodies, including the Food and Agriculture Organization and the European Food Safety Authority, say that glyphosate is not likely to be carcinogenic to humans.

When asked about the emails, an FDA spokesperson told The Guardian that the FDA has not found any illegal levels in corn, soy, milk, or eggs, which it considers part of the "special assignment." The spokesperson did not address the FDA scientists' unofficial findings.

EcoWatch
Glyphosate Exposure Increases Cancer Risk Up to 41%, Study Finds
https://www.ecowatch.com/glyphosate-cancer-2628948966.html
Lorraine Chow
Posted: 12:36pm, February 14, 2019

A new meta-analysis of glyphosate suggests that people who are highly exposed to the popular herbicide have a 41 percent increased risk of developing non-Hodgkin lymphoma (NHL).

Glyphosate, the active ingredient in Roundup, is the world's most widely used weedkiller and has been surrounded by controversy ever since the International Agency for Research on Cancer classified it as "probably carcinogenic to humans" in 2015.

The latest paper is a comprehensive review of epidemiologic studies published between 2001 and 2018, including last year's large Agricultural Health Study that tracked the health of tens of thousands of agricultural workers and determined no firm association between exposure to the pesticide and cancer, including NHL, as Reuters reported then.

Even with the Agricultural Health Study's assessment, the authors of the new paper still found "a compelling link" between glyphosate exposure and an increased risk of non-Hodgkin lymphoma, and makes an even stronger case of the link compared to previous reports.

For each study that was reviewed, the researchers focused on the groups that were the most highly exposed to the chemical.

"This research provides the most up-to-date analysis of glyphosate and its link with non-Hodgkin lymphoma, incorporating a 2018 study of more than 54,000 people who work as licensed pesticide applicators," study co-author Rachel Shaffer, a University of Washington doctoral student in the Department of Environmental & Occupational Health Sciences, in a press release.

She added their findings aligned with the classification from the International Agency for Research on Cancer.

The meta-analysis was published this week in the journal Mutation Research/Reviews in Mutation Research, whose editor-in-chief is U.S. Environmental Protection Agency (EPA) genetic toxicologist David DeMarini, GM Watch noted.

"Overall, in accordance with evidence from experimental animal and mechanistic studies, our current meta-analysis of human epidemiological studies suggests a compelling link between exposures to GBHs [glyphosate-based herbicides] and increased risk for NHL," the study states.

This conclusion contradicts the results of previous scientific assessments and international governmental bodies, including the EPA, which declared in 2017 that the controversial chemical is "not likely to be carcinogenic to humans."

Pharmaceutical giant Bayer—which bought glyphosate-maker Monsanto—has adamantly rejected any cancer claims and said the new study is "flawed" and uses "cherry-picked data" in a statement to Carey Gillam, a journalist and researcher for US Right to Know, who wrote about the new findings in the Guardian.

Bayer is facing more than 9,000 U.S. lawsuits from people who believe the chemical causes NHL.

The research was conducted by scientists from the University of Washington, the University of California, Berkeley and the Icahn School of Medicine at Mount Sinai, New York.

As noted by GM Watch, three of the five researchers are part of an EPA scientific advisory panel on glyphosate and have publicly stated that the agency failed to follow proper scientific procedures in determining the herbicide has no link to cancer.

Senior author Lianne Sheppard, a professor in the UW departments of Environmental & Occupational Health Sciences and Biostatistics, told the Guardian that the EPA evaluation is wrong.

"It was pretty obvious they didn't follow their own rules," she said to the publication. "Is there evidence that it is carcinogenic? The answer is yes."

In a comment to the Guardian, an EPA spokesperson said: "We are reviewing the study."

Funding for the new study was provided by the National Institutes of Environmental Health Sciences and the University of Washington Retirement Association Aging Fellowship.

"Our analysis focused on providing the best possible answer to the question of whether or not glyphosate is carcinogenic," Sheppard said in the press release. "As a result of this research, I am even more convinced that it is."

Environmental Health News
NYC leaders join calls for ban on Monsanto herbicide
https://www.ehn.org/monsantos-herbicide-defense-falling-on-deaf-ears-as-nyc-leaders-join-calls-for-ban-2634974362.html
Carey Gillam
Posted: April 18, 2019

Two New York City council members introduced legislation today that would ban city agencies from spraying glyphosate-based herbicides and other toxic pesticides in parks and other public spaces.

The move is the latest in a groundswell of concern over pesticide use, particularly exposures to weed killing products developed by Monsanto, which is now a unit of Bayer AG. Cities, school districts and suppliers across the U.S. are increasingly halting use of the pesticides.

It is also a further sign that a growing number of people – consumers, educators, business leaders and others - are rejecting assurances from Monsanto and Bayer that glyphosate herbicides such as Roundup are safe for widespread use.

Bayer has recently taken out large advertisements in the Wall Street Journal and The New York Times and has been running television and Internet ad campaigns to defend the safety of its weed killing products. But concerns continue to mount.

"Parks should be for playing not pesticides," said New York City council member Ben Kallos, a co-sponsor of the measure. "All families should be able to enjoy our city parks without having to worry that they are being exposed to toxic pesticides that could give them and their families cancer."

The New York City measure would prohibit the application of synthetic pesticides within 75 feet of a natural body of water. And it would encourage city agencies to move to the use of biological pesticides, which are derived from naturally occurring substances rather than synthetic substances.

Glyphosate is commonly used in New York City, sprayed hundreds of times a year onto public greenspaces to treat weeds and overgrowth. Kallos told EHN he fears letting his young daughter play in famed Central Park because of the dangers of pesticide exposure.

Science, public awareness grow

Glyphosate is the world's most widely used herbicide and is the active ingredient in not only Roundup brands but also hundreds of others sold around the world.

Since patenting glyphosate as a weed killer in 1974, Monsanto has always asserted it does not cause cancer and is much safer for people and the environment than other pesticides.

But scientific research developed over the last several decades has contradicted those corporate claims. Concerns escalated after the International Agency for Research on Cancer classified glyphosate as a probable human carcinogen in 2015.

More than 11,000 cancer victims are suing Monsanto alleging exposure to Roundup and other glyphosate products the company sells caused them to develop non-Hodgkin lymphoma.

The lawsuits also claim the company has long known about the cancer risks but has worked to keep that information from the public, in part by manipulating scientific data relied on by regulators.

The first two trials have ended in unanimous jury verdicts in favor of plaintiffs. A third trial is underway in California now.

Kallos is hoping that public awareness generated by the trials will drive support for his bill. A similar measure introduced in 2015 failed to gather enough support to pass.

"The science gets stronger and stronger every day, and public interest around the issue is getting stronger," said Kallos.

Latest effort to limit or ban

The effort in New York is just one of many around the United States to ban or limit applications of glyphosate products and other pesticides.

City commissioners in Miami voted in favor of a ban on glyphosate herbicides in February. In March, the Los Angeles County Board of Supervisors issued a moratorium on glyphosate applications on county property to allow for a safety evaluation by public health and environmental experts.

The list of school districts, cities and home owners groups that have banned or limited the use of glyphosate and other similarly hazardous pesticides includes many in California where the state's Office of Environmental Health Hazard Assessment (OEHHA) lists glyphosate as a known carcinogen.

This week, a group of Leesburg, Virginia, residents called on the town's officials to stop using glyphosate along area stream banks.

Some large suppliers have also started backing away from glyphosate products. Harrell's, a Florida-based turf, golf course and agricultural product supplier, stopped offering glyphosate products as of March 1.

Harrel's CEO Jack Harrell Jr. said the company's insurance provider was no longer willing to provide coverage for claims related to glyphosate, and the company was unable to secure adequate coverage from other insurers.

Costco has stopped selling Roundup—a corporate spokesperson says that they've removed the product from inventory for 2019. Salespeople at various stores contacted confirmed that they no longer offer the products.

And large independent garden center company Pike Nurseries in Georgia said earlier this month it is not restocking Roundup supplies due to declining sales.

On trial

The shunning of Monsanto's products has not been helped by global publicity surrounding the first three Roundup cancer trials, which have placed internal Monsanto emails and strategic planning reports into the public spotlight and elicited testimony about the company's handling of sensitive scientific concerns about perceived hazards of its herbicides.

In the trial currently underway, a case brought by a husband and wife who both have non-Hodgkin lymphoma they blame on their use of Roundup, evidence was introduced last week about the ease with which the weed killer can absorb into human skin.

Evidence was also laid out showing that Monsanto worked closely with the Environmental Protection Agency to block a toxicity review of glyphosate by a separate government agency.

The current trial, and the two previous trials, have all included evidence that Monsanto engaged in ghostwriting certain scientific papers that concluded glyphosate products were safe; and that Monsanto spent millions of dollars on projects aimed at countering the conclusions of the international cancer scientists who classified glyphosate as a probable carcinogen.

Bayer's annual shareholders meeting is set for April 26 and angry investors are calling for answers from Bayer CEO Werner Baumann who drove the acquisition of Monsanto, closing the $63 billion deal just before the first Roundup cancer trial started last June.

The company maintains glyphosate herbicides are not carcinogenic and it will ultimately prevail.

But Susquehanna Financial Group analyst Tom Claps has warned shareholders to brace for a global settlement of between $2.5 billion and $4.5 billion. "It's not a matter of 'if' Bayer will reach a global Roundup settlement, it is a matter of 'when,'" Claps told investors in a recent report.

U.S. District Judge Vince Chhabria has ordered Bayer to enter into mediation, to discuss just such a potential settlement of the Roundup litigation.

Carey Gillam is a journalist and author, and a public interest researcher for US Right to Know, a not-for-profit food industry research group. You can follow her on Twitter @careygillam

Environmental Working Group
Monsanto Bullies EPA on Glyphosate Ruling
https://www.ewg.org/news-and-analysis/2018/04/monsanto-bullies-epa-glyphosate-ruling
Violet Batcha
Posted: April 24, 2018

The Environmental Protection Agency is seeking public input on the health impacts of glyphosate, the active ingredient in Monsanto's Roundup herbicide. But despite mounting evidence, the EPA continues to ignore glyphosate's hazards, and it looks like Monsanto's under-the-table influence may be a reason why.

Monsanto has launched a campaign to pressure the EPA into declaring glyphosate safe. It is terrified of losing the profits from selling this ubiquitous herbicide.

Tell the EPA to stand up to Monsanto and protect human health.

The use of glyphosate on U.S. farmland has exploded in recent years. A recent **study**found that Americans' exposure to the pesticide has increased fivefold since it was first introduced more than 20 years ago.

As use of glyphosate has increased, so have concerns about its health hazards.

In 2015, the International Agency for Research on Cancer classified glyphosate as a probable human carcinogen. Earlier this year, California added glyphosate to the state's Proposition 65 registry as a chemical known to cause cancer. A 2018 **study** out of Indiana University linked glyphosate to shorter pregnancy, which can increase a child's risk of chronic diseases later in life.

California's Proposition 65 listing would require cancer warning labels on Roundup. A group of Big Ag lobbyists, backed by Monsanto, has taken action to stop the labeling rule from taking effect.

Meanwhile, **unsealed court documents** have revealed Monsanto's efforts to collude with the EPA to cover up glyphosate's cancer risks. In **lawsuits against Monsanto by cancer victims,** an EPA official who was in charge of evaluating the herbicide's cancer risk has been accused of aiding the company's efforts to kill the agency's investigation.

The EPA's draft safety assessment reviewed 14 cancer studies of glyphosate in animals. Eight of the studies reported elevated cancer rates in at least one organ or tissue. But the agency dismissed the findings, contending

that glyphosate is "unlikely to cause cancer," which means that American children will continue ingesting glyphosate through their everyday foods.

But now we have a chance to make our voices heard. We can urge the EPA not to cave to Monsanto's pressure and to review *all* the science linking glyphosate to cancer. But we only have until April 30 to flood the EPA with comments.

Make sure EPA chief Scott Pruitt knows you're watching. Tell him to stand up to Monsanto and protect public health.

Environmental Working Group
Roundup for Breakfast, Part 2: In New Tests, Weed Killer Found in All Kids' Cereals Sampled
https://www.ewg.org/release/roundup-breakfast-part-2-new-tests-weed-killer-found-all-kids-cereals-sampled
Alex Formuzis
Posted: October 24, 2018

WASHINGTON – A second round of tests commissioned by the Environmental Working Group found the active ingredient in Monsanto's Roundup weed killer in every sample of popular oat-based cereal and other oat-based food marketed to children. These test results fly in the face of claims by two companies, Quaker and General Mills, which have said there is no reason for concern. This is because, they say, their products meet the legal standards.

Yet almost all of the samples tested by EWG had residues of glyphosate at levels higher than what EWG scientists consider protective of children's health with an adequate margin of safety. The EWG findings of a chemical identified as probably carcinogenic by the World Health Organization come on the heels of a **major study** published in JAMA Internal Medicine that found a significant reduction in cancer risk for individuals who ate a lot of organic food.

The tests detected glyphosate in all 28 samples of products made with conventionally grown oats. All but two of the 28 samples had levels of glyphosate above EWG's health benchmark of 160 parts per billion, or ppb.

Products tested by Anresco Laboratories in San Francisco included 10 samples of different types of General Mills' Cheerios and 18 samples of different Quaker brand products from PepsiCo, including instant oatmeal, breakfast cereal and snack bars. The highest level of glyphosate found by the lab was 2,837 ppb in Quaker Oatmeal Squares breakfast cereal, nearly 18 times higher than EWG's children's health benchmark.

Glyphosate, the most widely used herbicide in the world, is classified by the International Agency for Research on Cancer as **"probably carcinogenic"** to people. The IARC has **steadfastly defended that decision** despite ongoing attacks by Monsanto.

In 2017, glyphosate was also listed by the California Office of Environmental Health Hazard Assessment as a chemical **known to the state to cause cancer**.

"How many bowls of cereal and oatmeal have American kids eaten that came with a dose of weed killer? That's a question only General Mills, PepsiCo and other food companies can answer," said EWG President Ken Cook. "But if those companies would just switch to oats that aren't sprayed with glyphosate, parents wouldn't have to wonder if their kids' breakfasts contained a chemical linked to cancer. Glyphosate and other cancer-causing chemicals simply don't belong in children's food, period."

Results of the new tests come two months after EWG's first series of tests found glyphosate in all but two of 45 samples of foods made with conventionally grown oats, and in about one-third of the 16 products made with organic oats. About two-thirds of the samples of conventional foods had levels of glyphosate above EWG's health benchmark.

Following release of the first batch of tests, General Mills and the Quaker Oats Company went on the defensive, noting that glyphosate levels found were within regulatory limits set by the Environmental Protection Agency.

But just because something is legal doesn't mean it's safe. Federal government standards for pesticides in food are often outdated, not based on the best and most current science. The EPA's standards for pesticides and other chemicals are also heavily influenced by lobbying from industry.

Studies regularly find that the legal limits on contaminants in food, air, drinking water and consumer products fall short of fully protecting public health, particularly for children and other people more sensitive to the effects of toxic chemicals. The EPA's legal limit for glyphosate on oats, 30 parts per million, was set in 2008, well before the cancer findings of the IARC and California state scientists.

EWG does not believe chemicals linked to cancer belong in children's food. Our recommended maximum daily intake of glyphosate in food is 0.01 milligrams. For a 60-gram portion of food, this daily intake limit translates to a safety standard of 160 ppb of glyphosate. This health benchmark is based on the risks of lifetime exposure, because small, repeated exposures can add up if someone eats food containing glyphosate every day.

After sitting on data from its own glyphosate tests for more than a year, the Food and Drug Administration finally made the results public last month. The FDA found glyphosate on about two-thirds of corn and soybean samples. But it did not test any oats or wheat, the two main crops on which glyphosate is used as a pre-harvest drying agent.

More than 156,000 people have signed a petition from EWG and Just Label It calling on General Mills, Quaker and Kellogg's to get glyphosate out of their products. Last month EWG – joined by companies including MegaFood, Ben & Jerry's, Stonyfield Farm, MOM's Organic Market, Nature's Path, One Degree Organic Foods, Happy Family Organics, Patagonia, PCC Community Markets and Amy's Kitchen – petitioned the EPA to sharply limit glyphosate residues allowed on oats and prohibit its use as a pre-harvest drying agent.

"Once again, our message to General Mills, Quaker and other food companies is that you can take the simple step of telling your oat farmers to stop using glyphosate," said Cook. "You can hide behind an outdated federal standard, or you can listen to your customers and take responsibility for cleaning up your supply chain. It's your choice."

EWG sent letters today to General Mills and PepsiCo asking each company if it had conducted similar analyses for the presence of glyphosate. And, if any tests have been done, we asked if the companies to inform the public when the testing began and what they found.

Fox News

Popular breakfast foods contain active ingredient found in Roundup weed killer, study finds

https://www.foxnews.com/health/popular-breakfast-foods-contain-active-ingredient-found-in-roundup-weed-killer-study-finds

Madeline Farber

Posted: October 25, 2018

At least 28 samples of popular oat-based cereals and snack bars made by popular household names — General Mills and Quaker — contained glyphosate, an active ingredient used in Monsanto's Roundup weed killer, the Environmental Working Group (EWG) discovered in a new study released this week.

The EWG, a nonprofit advocacy group, said Wednesday it "detected glyphosate in all 28 samples of products made with conventionally grown oats," noting all but two of the 28 samples tested "had levels of glyphosate above EWG's health benchmark of 160 parts per billion, or ppb."

Out of the 28 products tested, Quaker Oatmeal Squares breakfast cereal had the highest level of the herbicide, which the advocacy group said was "nearly 18 times higher than EWG's children's health benchmark."

NEWBORN CONTRACTED FATAL HERPES VIRUS FROM KISS, MOM WARNS

That said, it's important to note the levels of glyphosate found in the products — which include Quaker Instant Oatmeals Apples & Cinnamon, Quaker Breakfast Squares Soft Baked Bars Peanut Butter and a variety of Cheerios flavors, such as Chocolate, Apple Cinnamon and Very Berry, among others — were within acceptable limits, as dictated by the the U.S. Environmental Protection Agency and the U.S. Food and Drug Administration, CBS News reported.

"But just because something is legal doesn't mean it's safe," the EWG argued. "Federal government standards for pesticides in food are often outdated, not based on the best and most current science. The EPA's standards for pesticides and other chemicals are also heavily influenced by lobbying from industry."

The findings come after the EWG announced in August it found trace amounts of the ingredient in "all but two of 45 samples of products made with conventionally grown oats," the organization said at the time. Some of the items included Quaker Old Fashioned Oats and popular breakfast cereals made by General Mills, such as Cheerios and Lucky Charms.

The World Health Organization, in a 2015 report, said the herbicide glyphosate, along with insecticides malathion and diazinon, are "probably carcinogenic to humans," adding there was "limited evidence of carcinogenicity in humans for non-Hodgkin lymphoma and prostate cancer" for malathion. "Limited evidence," in reference to the World Health Organization's report, means researchers have determined there is a "positive association" between exposure to glyphosate and cancer, but said, "other explanations for the observations (called chance, bias, or confounding) could not be ruled out."

In 2017, the California Office of Environmental Health Hazard Assessment announced glyphosate "would be added to the list of chemicals known to the state to cause cancer."

However, following the August report, many health professionals said consumers should remain calm and encouraged more research before cutting out some of these popular foods.

"Whenever you see a one-off article like that, you have to do more investigation," Scott Goldstein, a pediatrician at the Northwestern Children's Practice, told the Chicago Tribune at the time.
"When the EPA or the American Academy of Pediatrics, or Centers for Disease Control talks about taking away Cheerios, then my ears would perk up," he added.

Paul Pharoah, a professor of cancer epidemiology at the University of Cambridge in Britain, previously told NBC News evidence suggesting glyphosate raises the chances of developing non-Hodgkin lymphoma is "very weak."
In August, both General Mills and the Quaker Oats Company responded to the findings by saying the "levels of glyphosate remain within the regulatory levels set by the Environmental Protection Agency," EWG wrote in a statement at the time.
Both companies echoed these sentiments in statements to Fox News on Thursday.

"We proudly stand by the safety and quality of our Quaker products," a Quaker spokesperson said in a statement in reference the findings released this week. The spokesperson added the company does not "add glyphosate during any part of the milling process" and noted the herbicide is commonly used by farmers prior to harvest.

"Once the oats are transported to us, we put them through our rigorous process that thoroughly cleanses them (de-hulling, cleaning, roasting and flaking)," the spokesperson said. "Any minimal levels of glyphosate that may remain in finished products where oats are an ingredient are significantly below regulatory limits and well within compliance of the safety standards set by the Environmental Protection Agency (EPA), the California Office of Environmental Health Hazard Assessment, Health Canada and the European Food Safety Authority (EFSA) as safe for human consumption."

TANNING HABIT LEFT MOM WITH HOLE IN FACE AFTER SKIN CANCER DIAGNOSIS

"We believe EWG's approach is invalid, and we stand behind our statement that the Quaker products tested by EWG are safe. Producing healthy, wholesome food is Quaker's number one priority, and we've been doing that for more than 140 years."

A General Mills spokesperson said in a statement the company's "top priority is food safety and has been for over 150 years," copying Quaker in saying glyphosate is commonly used by farmers.

"The extremely low levels of pesticide residue cited in recent news reports is a tiny fraction of the amount that the government allows. Consumers are regularly bombarded with alarming headlines, but rarely have the time to weigh the information for themselves," the statement continued.

Genetic Literacy Project / Newsweek
Viewpoint: 'Native' calls for glyphosate ban threaten higher food prices, resurgence of more toxic pesticides / Monsanto, Roundup and Cancer: Cutting Chemicals From Agriculture Is A Cost We Can't Yet Afford: Opinion
https://geneticliteracyproject.org/2019/04/17/viewpoint-naive-calls-for-glyphosate-ban-threaten-higher-food-prices-resurgence-of-more-toxic-pesticides/
https://www.newsweek.com/monsanto-cancer-chemicals-agriculture-needed-1378101
Henry Miller, Stuart Smyth
Posted: April 17, 2019
There has been intense attention focused on the safety of agricultural chemicals over the past year, following two successful lawsuits against the Monsanto Company (which merged with Bayer in 2018) that claimed the herbicide glyphosate (Roundup®) caused the plaintiffs' cancers.But jury verdicts are not the same as scientific conclusions, and the data and the judgements of experts worldwide lead to different conclusions from those of the jurors.

In January 2019, Health Canada was the most recent regulatory entity to weigh in on the safety of glyphosate, observing, "[n]o pesticide regulatory authority in the world currently considers glyphosate to be a cancer risk to humans at the levels at which humans are currently exposed."
The recent lawsuits claiming injuries from glyphosate have led to increased calls by activists for a ban on the chemical. But such a ban would impose enormous costs on food production and consumers, and also on the environment, as older, more toxic chemicals would reappear.

Regulation of chemicals

Herbicides and other agricultural chemicals are heavily regulated. Prior to their approval for use, scientific risk-assessments are performed by national regulatory bodies, using all available data. From such assessments, an acceptable safe residue level on or in food products is established which is often six orders of magnitude—one-millionth—of levels that could be harmful. The U.S. EPA has established tolerances for glyphosate on a wide range of crops, including corn, soybean, oilseeds, grains, and some fruits and vegetables, ranging from 0.1 to 310 parts per million. In practice, these levels are seldom exceeded.
According to the Extension Toxicology Network, operated by several prestigious universities, the single-consumption lethal acute dose of glyphosate necessary to kill 50% of tested rats (LD 50) is 5,600 mg/kg (5600 ppm) . Translated to a 100 kg (220 pound) man, the LD 50 would be massive – about a pound and a quarter of the chemical, or 167 percent greater than the amount usually applied to an acre of farmland.
What, then, has prompted the concern and disagreement over glyphosate? In short, a single anomalous outlier: In 2015, glyphosate was classified as a "probable carcinogen" by the United Nations' International Agency for Research on Cancer (IARC). Their *hazard* assessment failed to take into consideration dose or exposures and has also been criticized for the corruption of the process. Using this failed paradigm—performing assessments

of hazard, rather than risk—IARC placed glyphosate in the same hazard category as red meat and hot beverages, things most of us consume frequently.
Health Canada's statement that not a single chemical regulatory agency in the world considers glyphosate to be a human health risk echos the excellent infographic just published by the Genetic Literacy Project. Although science can never prove a negative—such as that something is 100 percent safe—this consensus is about as definitive a health safety statement as can possibly be made by government entities.

The importance of farm chemicals

As any farmer or home gardener knows, weeds are obstinate. They germinate earlier, grow faster, and produce far more seeds than seeded crops, making weed control essential for successful farming. Evolution has ensured that weeds know how to thrive and to ensure a successful next generation. For example, palmer amaranth, a particularly noxious weed in the southern U.S., produces one million seeds per plant. Kochia, a common weed in Western Canada is capable of producing 25,000 seeds per plant.

By comparison, a good yielding variety of wheat typically produces 25-30 kernels per plant, with 40 kernels being exceptional. With weeds producing 1,000 to 25,000 times more seeds than a crop plant, it doesn't take long for poor weed control practices to become a big problem for farmers.

Inadequate weed control lowers crop yields in all production situations. Africanstudies show the devastating effects on crop yields of uncontrolled or sub-optimally controlled weeds. Poor weed control is the single biggest contributor to low corn yields for African smallholder farmers. Female hand-weeding is a common practice in developing nations, and the number of times it is necessary to weed following planting has been identified as the principal limiting factor to the size of African farms. Yield losses of 20-80 percent are common in parts of sub-Saharan Africa when proper weed control practices are not followed.
Unlike modern agriculture in developed nations, much of the agriculture of developing countries lacks the technologies and access to practices necessary for weed control. Fortunately, herbicide-tolerant, genetically engineered (GE) crops are slowly being introduced, offering producers access to effective and efficient means to control weeds. Research on three seasons of small-landholder adopters of GE crops in South Africa found that female farmers growing herbicide-tolerant GE corn spent 10-12 fewer days per season in the field doing arduous weed-pulling and hoeing than counterparts who planted conventional corn. With two crop seasons per year, these female farmers saved three weeks of field labor, a benefit which they reported allowed them to have larger vegetable gardens and to spend more time with their children.

The costs of prohibiting farm chemicals

Calls from various environmental organizations to ban the use of chemicals in food production are naïve.
One study has estimated that the costs associated with a global ban on glyphosate, the most commonly used herbicide, would be $6.76 billion annually. This would result from lower production of the primary glyphosate-resistant, GE crops like soybeans, corn and canola, which would put upward pressure on food prices. In addition, the loss of availability of glyphosate would force farmers to use large amounts of other, less effective chemicals, resulting in increased chemical use by 1.7 percent, or 8.2 million kilograms, of chemical active ingredient. This would cause a 12.4 percent *greater* environmental impact, the study found.
The additional chemical applications would reduce carbon sequestration, due to the rise of tillage to control weeds, and increase greenhouse gas emissions. That would be the equivalent of putting 11.8 million more cars on the roads. Moreover, banning one chemical would simply result in the increased use of others that have greater environmental impacts, set back efforts to mitigate climate change, and increase food insecurity and food prices.

One study that has calculated the environmental costs of not adopting herbicide-tolerant crops found that they were significant. The assessment, of Australia's moratorium on genetically engineered canola, estimated that the environmental impacts during 2004-2014 included:

- Additional use of 6.5 million kilograms of chemicals;
- Seven million additional field passes, requiring 8.7 million liters of diesel;
- the release of 24 million kilograms of greenhouse gases (equivalent to 5,000 cars being driven for one year); and
- 14 percent higher negative environmental impacts, due to the additional chemicals applied.

The future of chemical use

Exploiting advances in technology, weed control is evolving in much the same way that air-dropped munitions have gone from carpet-bombing in the last century to "smart bombs" today. Blue River Technology has developed a technology that promises to revolutionize chemical applications. This company has developed a program for a sprayer's computer to identify weeds and to turn on the appropriate nozzle, providing a small, short blast of chemical spray on an individual weed. Currently, sprayers used in bulk commodity fields spray the entire field to control weeds. If this precise technology were widely adapted to sprayers applying herbicides to bulk commodity fields, it could reduce the use of chemicals by 80 to 90 percent.
In an ideal world, farmers would not need to use chemicals to produce our food and fiber, but the reality is that without the ability to apply herbicides to control weeds, yields would decrease and farmers would be less profitable. The lower yields would result in higher food prices, an increased environmental footprint, and in cases of extreme environmental stresses, famine. Those are costs we can't afford.

Greenmatters.com
The States That Use the Most Glyphosate – And What You Can Do About It
https://www.greenmatters.com/p/states-with-most-glyphosate
Sophie Hirsh
Posted: April 10, 2019

The herbicide glyphosate has been the subject of some major lawsuits over the past few years. ***Weed Killer Crisis***, a website dedicated to documenting the "unfolding legal and health crisis" surrounding pesticides and herbicides, recently compiled government data on glyphosate and other agricultural chemicals around the country into easy-to-read visuals, to inform the public on pesticide use in their states.

It's pretty interesting to see the statistics, which reveal the states with the highest (and lowest) concentrations of possibly carcinogenic glyphosate. And while seeing your state towards the top of the list may make you feel a bit hopeless, there are luckily plenty of ways to combat the use of glyphosate in your state.

For the visuals, *Weed Killer Crisis* got its data from the **U.S. Geological Survey**'s (USGS) 2016 Estimated Annual Agricultural Pesticide Use report. The visuals measure (in kilograms) which states use the most glyphosate across the nation, and found that Illinois came out on top, using more than 11 million kilograms a year. The midwestern state is followed by Iowa, Nebraska, Kansas, and North Dakota. The state with the least glyphosate use by kilogram is Rhode Island, followed by New Hampshire, Massachusetts, Maine, and Connecticut.

The Guardian
Homebase to review sale of Monsanto weedkiller after US cancer verdict
https://www.theguardian.com/business/2018/aug/11/homebase-to-review-sale-of-monsanto-weedkiller-after-us-cancer-verdict-roundup
Patrick Greenfield
Posted: August 11, 2018

One of the UK's largest DIY retailers is reviewing the sale of Roundup weedkiller products amid mounting concerns about their use, after a US jury found that the herbicide had caused a terminally ill man's cancer.

The manufacturer of the weedkiller, Monsanto, has insisted that British consumers are safe to continue using Roundup products, which are widely sold at DIY stores and used by British farmers. But a spokesperson for Homebase said it would be reviewing its product range after the ruling in California.

A spokesperson for B&Q said it had already been undertaking a broader review of all garden products in an attempt to manage the range responsibly.

On Friday, Dewayne Johnson, a 46-year-old former groundskeeper, was awarded $289m (£226m) in damages from Monsanto after a jury ruled that Roundup had caused his terminal blood cell cancer and the company had failed to warn him of the health risk from exposure.

The jury also found that Monsanto had "acted with malice or oppression" and ruled that it knew or should have known the weedkiller was dangerous. During the trial, the court heard that Johnson may have just months to live and his wife had been forced to work two jobs to help pay for his treatment for non-Hodgkin's lymphoma.

Monsanto's vice-president, Scott Partridge, said on Friday that hundreds of studies had shown that glyphosate, one of the world's most widely used herbicides and a key ingredient of Roundup, does not cause cancer. Monsanto would be appealing against the jury's verdict, he added.

"It is completely and totally safe, and the public should not be concerned about this verdict. It is one that we will work through the legal process to see if we can get the right result. The science is crystal-clear," he said.

"The jury made a decision, but the decision that a jury or a judge makes has to be based on the weight of the evidence, and the overwhelming weight of the evidence that went in the trial was that science demonstrates glyphosate is safe; there's no credible evidence to the contrary."

The German pharmaceutical group Bayer, which owns Monsanto, said: "Bayer is confident, based on the strength of the science, the conclusions of regulators around the world and decades of experience, that glyphosate is safe for use and does not cause cancer when used according to the label."

The scientific world, however, has raised doubts about glyphosate. A ruling in 2015 by the World Health Organization's international agency for research on cancer (IARC) classified glyphosate as "probably carcinogenic to humans".

Campaigners are now calling for a review of pesticide regulations in the UK after the case, saying that glyphosate poses a risk to public health, soils and the environment.

More than 2m hectares (5m acres) of farmland across Britain are treated with glyphosate annually, according to a study of government data by Oxford Economics.

Emma Hockridge, head of policy at the Soil Association, described the ruling as a "dramatic blow" to the pesticide industry. "This is a landmark case, which highlights not only the problems caused by glyphosate, but also the whole system of pesticide use. We need to urgently change our systems of weed control to stop relying on herbicides," she said.

But the National Farmers' Union (NFU) said use of the pesticide should not be reviewed after the court ruling. Glyphosate's licence was extended for five years in Europe by the EU last November, despite a petition by 1.3 million EU citizens calling for a ban.

The NFU's deputy president, Guy Smith, who is also an active livestock and arable farmer, said: "We're in the same place as when they ruled it was safe to use. We don't think the opinion of a Californian jury should change that.

"Its most common use in UK farming is to kill weeds in the autumn before seeds are planted. On my land right now, I'm spraying it today. Without glyphosate, I would have to plough and cultivate the land. That would use extra diesel, which is bad for the soil and the environment."

A spokesperson for B&Q said: "We continually aim to manage our garden products responsibly and have a record of acting ahead of legislation where appropriate; we led the way in removing three pesticides in 2013 and neonicotinoids from our flowering plants in 2018. We offer alternatives to glyphosates, and we are currently undertaking a broader review of all our garden products."

A spokesperson for Wilko said it was not reviewing Roundup products, but added that it was "watching the situation carefully and will respond appropriately."

The Department for Environment, Food and Rural Affairs, which is responsible for pesticide regulation, said: "Decisions on the use of pesticides should be based on a careful scientific assessment of the risks."

The Guardian
Weedkiller found in granola and crackers, internal FDA emails show
https://www.theguardian.com/us-news/2018/apr/30/fda-weedkiller-glyphosate-in-food-internal-emails
Carey Gillam
Posted: April 30, 2018

US government scientists have detected a weedkiller linked to cancer in an array of commonly consumed foods, emails obtained through a freedom of information request show.

The Food and Drug Administration (FDA) has been testing food samples for residues of glyphosate, the active ingredient in hundreds of widely used herbicide products, for two years, but has not yet released any official results.

But the internal documents obtained by the Guardian show the FDA has had trouble finding any food that does not carry traces of the pesticide.

"I have brought wheat crackers, granola cereal and corn meal from home and there's a fair amount in all of them," FDA chemist Richard Thompson wroteto colleagues in an email last year regarding glyphosate.

Thompson, who is based in an FDA regional laboratory in Arkansas, wrote that broccoli was the only food he had "on hand" that he found to be glyphosate-free.

That internal FDA email, dated January 2017, is part of a string of FDA communications that detail agency efforts to ascertain how much of the popular weedkiller is showing up in American food. The tests mark the agency's first-ever such examination.

"People care about what contaminants are in their food. If there is scientific information about these residues in the food, the FDA should release it," said Tracey Woodruff, a professor in the University of California San Francisco School of Medicine. "It helps people make informed decisions. Taxpayers paid for the government to do this work, they should get to see the information."

The FDA is charged with annually testing food samples for pesticide residues to monitor for illegally high residue levels. The fact that the agency only recently started testing for glyphosate, a chemical that has been used for over 40 years in food production, has led to criticism from consumer groups and the Government Accountability Office (GAO). Calls for testing grew after the International Agency for Research on Cancer (IARC) classified glyphosate as a probable human carcinogen in 2015.

Glyphosate is best known as the main ingredient in Monsanto Co's Roundup brand. More than 200m pounds are used annually by US farmers on their fields. The weedkiller is sprayed directly over some crops, including corn, soybeans, wheat and oats. Many farmers also use it on fields before the growing season, including spinach growers and almond producers.

Thompson's detection of glyphosate was made as he was validating his analytical methods, meaning those residues will probably not be included in any official report.

Separately, FDA chemist Narong Chamkasem found "over-the-tolerance" levels of glyphosate in corn,detected at 6.5 parts per million, an FDA email states. The legal limit is 5.0 ppm. An illegal level would normally be reported to the Environmental Protection Agency (EPA), but an FDA supervisor wrote to an EPA official that the corn was not considered an "official sample".

When asked about the emails and the agency's testing, an FDA spokesman said only that the FDA had not found any illegal levels in corn, soy, milk or eggs, the four commodities it considers part of its glyphosate "special assignment". He did not address the unofficial findings revealed in the emails.

The FDA's official findings should be released later this year or early in 2019 as part of its 2016 annual residue report. The reports typically are released two to two and a half years after the data is collected.

Along with glyphosate, the agency has been trying to measure residues of the herbicides 2,4-D and dicamba because of projected increased use of these weedkillers on new genetically engineered crops. The FDA spokesman said that the agency has "expanded capacity" for testing foods for those herbicides this year.

Other findings detailed in the FDA documents show that in 2016 Chamkasem found glyphosate in numerous samples of honey. Chamkasem also found glyphosate in oatmeal products. The FDA temporarily suspended testing after those findings, and Chamkasem's lab was "reassigned to other programs", the FDA documents show. The FDA has said those tests were not part of its official glyphosate residue assignment.

Pesticide exposure through diet is considered a potential health risk. Regulators, Monsanto and agrochemical industry interests say pesticide residues in food are not harmful if they are under legal limits. But many scientists dispute that, saying prolonged dietary exposure to combinations of pesticides can be harmful.

Toxicologist Linda Birnbaum, who is director of the US National Institute of Environmental Health Sciences (NIEHS), said that current regulatory analysis of pesticide dangers does not account for low levels of dietary exposures.

"Even with low levels of pesticides, we're exposed to so many and we don't count the fact that we have cumulative exposures," Birnbaum said.

The US Department of Agriculture was to start its own testing of foods for glyphosate residues in 2017 but dropped the plan.

The lack of government residue data comes as Monsanto attempts to bar evidence about glyphosate food residues from being introduced in court where the company is fighting off allegations its Roundup products cause cancer.

In a case set for trial on 18 June, San Francisco superior court judge Curtis Karnow recently denied the company's motion to keep the jury from hearing about residues in food. The judge said that although Monsanto worries the information "will inflame the jury against Monsanto based on their own fear that they may have been exposed", such information "should not be excluded".

- *Carey Gillam is a journalist and author, and a public interest researcher forUS Right to Know, a non-profit food industry research group*

The Guardian
Weedkiller 'raises risk of non-Hodgkin lymphoma by 41%
https://www.theguardian.com/business/2019/feb/14/weed-killing-products-increase-cancer-risk-of-cancer
Carey Gillam
Posted: February 14, 2019

A broad new scientific analysis of the cancer-causing potential of glyphosate herbicides, the most widely used weedkilling products in the world, has found that people with high exposures to the popular pesticides have a 41% increased risk of developing a type of cancer called non-Hodgkin lymphoma.

The evidence "supports a compelling link" between exposures to glyphosate-based herbicides and increased risk for non-Hodgkin lymphoma (NHL), the authors concluded, though they said the specific numerical risk estimates should be interpreted with caution.

The findings by five US scientists contradict the US Environmental Protection Agency's (EPA) assurances of safety over the weed killer and come as regulators in several countries consider limiting the use of glyphosate-based products in farming.

Monsanto and its German owner Bayer AG face more than 9,000 lawsuits in the US brought by people suffering from NHL who blame Monsanto's glyphosate-based herbicides for their diseases. The first plaintiff to go to trial won a unanimous jury verdict against Monsanto in August, a verdict the company is appealing. The next trial, involving a separate plaintiff, is set to begin on 25 February , and several more trials are set for this year and into 2020.

Monsanto maintains there is no legitimate scientific research showing a definitive association between glyphosate and NHL or any type of cancer. Company officials say the EPA's finding that glyphosate is "not likely" to cause cancer is backed by hundreds of studies finding no such connection.

The company claims the scientists with the International Agency for Research on Cancer (IARC) who classified glyphosate as a probable human carcinogen in 2015 engaged in improper conduct and failed to give adequate weight to several important studies.

But the new analysis could potentially complicate Monsanto's defense of its top-selling herbicide. Three of the study authors were tapped by the EPA as board members for a 2016 scientific advisory panel on glyphosate. The new paper was published by the journal Mutation Research /Reviews in Mutation Research, whose editor in chief is EPA scientist David DeMarini.

The study's authors say their meta-analysis is distinctive from previous assessments. "This paper makes a stronger case than previous meta-analyses that there is evidence of an increased risk of NHL due to glyphosate exposure," said co-author Lianne Sheppard, a professor in the Environmental and Occupational Health Sciences department at the University of Washington. "From a population health point of view there are some real concerns."

Sheppard was one of the scientific advisers to the EPA on glyphosate and was among a group of those advisers who told the EPA that it failed to follow proper scientific protocols in determining that glyphosate was not likely to cause cancer. "It was wrong," Sheppard said of the EPA glyphosate assessment. "It was pretty obvious they didn't follow their own rules. "Is there evidence that it is carcinogenic? The answer is yes."

An EPA spokesperson said: "We are reviewing the study." Bayer, which bought Monsanto in the summer of 2018, did not respond to a request for comment about the study.

A Bayer statement on glyphosate cites the EPA assessment and says that glyphosate herbicides have been "extensively evaluated" and are proven to be a "safe and efficient weed control tool".

The study authors said their new meta-analysis evaluated all published human studies, including a 2018 updated government-funded study known as the Agricultural Health Study (AHS). Monsanto has cited the updated AHS study as proving that there is no tie between glyphosate and NHL. In conducting the new meta-analysis, the researchers said they focused on the highest exposed group in each study because those individuals would be most likely to have an elevated risk if in fact glyphosate herbicides cause NHL.

Looking only at individuals with real-world high exposures to the pesticide makes it is less likely that confounding factors may skew results, the authors said. In essence – if there is no true connection between the chemical and cancer then even highly exposed individuals should not develop cancer at significant rates.

In addition to looking at the human studies, the researchers also looked at other types of glyphosate studies, including many conducted on animals.

"Together, all of the meta-analyses conducted to date, including our own, consistently report the same key finding: exposure to GBHs are associated with an increased risk of NHL," the scientists concluded.

David Savitz, professor of epidemiology in the Brown University School of Public Health, said the work was "well conducted" but lacking "fundamentally new information".

"I would suggest it sustains the concern and need for assessment but doesn't put the question to rest in any definitive sense," Savitz said.

In a statement Bayer later said" "[The study] does not provide new epidemiology data; instead, it is a statistical manipulation that is at odds with the extensive body of science, 40 years of real world experience and the conclusions of regulators."

It added: "[The study] provides no scientifically valid evidence that contradicts the conclusions of the extensive body of science demonstrating that glyphosate-based herbicides are not carcinogenic."

Carey Gillam is a journalist and author, and a public interest researcher for US Right to Know, a not-for-profit food industry research group

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Idaho Mountain Express
Take a stand against glyphosate
https://www.mtexpress.com/opinion/letters_to_editor/take-a-stand-against-glyphosate/article_9fe25810-606a-11e9-ae88-9b6b65543c1d.html
William Pereira
Posted: April 17, 2019

The McClure Center and Sun Valley Institute hosted a discussion regarding local agriculture (called Policy Pub: The Future of Food). My question to Amy Mattias, panelist and representative of the Sun Valley Institute, was disappointingly unanswered. Question: Considering the recent California State Supreme Court decisions Hardeman v. Monsanto and Dewayne Johnson v. Monsanto and the findings that glyphosate represents a probable carcinogen and that Monsanto is guilty of negligence in selling the product, what is Sun Valley Institute's position on the use of glyphosate, aka Roundup herbicide, in the cities of Sun Valley, Ketchum, Hailey and Bellevue? And what is its position on glyphosate use on locally grown foods?

The mission statement of the institute is to foster a resilient community and to foster local food-sourcing capability. The answer I received was, "We can't afford the staffing." My follow-up question, which I was not allowed to ask, would have been, "Taking a position against a known cancer causer and the most widely used herbicide in the world takes no more than taking a position. It doesn't require additional staffing. Just a yes or no, do you or don't you condemn the use of glyphosate in the production of our local foods?"

Forty-seven American cities and counties have moved to ban the use or curtail the use of glyphosate.

Los Angeles Times
California jury awards $289 million to man who claimed Monsanto's Roundup pesticide gave him cancer
https://www.latimes.com/business/la-fi-roundup-verdict-20180810-story.html
Geoffrey Mohan
Posted: August 10, 2018

A San Francisco jury on Friday found Monsanto liable for a school groundskeeper's lymphoma that he said developed after years of applying the company's trademarked Roundup weed killer.

The $289-million verdict in San Francisco County Superior Court is certain to add momentum to a multi-front battle to ban Roundup's main active ingredient, glyphosate. The compound is applied to millions of acres of crops, many of which have been genetically modified to withstand the herbicide.

The jury deliberated three days before awarding $39 million in compensatory damages and $250 million in punitive damages to groundskeeper DeWayne Lee Johnson, 46. He claimed that years of applying Monsanto's Roundup and Ranger Pro to school properties in a Bay Area suburb of Benicia caused his incurable non-Hodgkin's lymphoma.

Activists, who have long battled to ban glyphosate, lauded the decision in the closely watched trial.

"Monsanto made Roundup the OxyContin of pesticides, and now the addiction and damage they caused have come home to roost," said Ken Cook, president of Environmental Working Group. "This won't cure DeWayne Lee Johnson's cancer, but it will send a strong message to a renegade company."

The verdict "signals a turning tide," said Linda Wells, Midwest organizing director for Pesticide Action Network. "It's time to get carcinogenic pesticides off the market, and fight for the protective regulations we all deserve," Wells said.

Monsanto, which continues to be run independently after merging earlier this year with German agro-industrial giant Bayer AG, said in a statement that it will appeal the verdict.

"We are sympathetic to Mr. Johnson and his family," said Scott Partridge, Monsanto's vice president of global strategy. "Today's decision does not change the fact that more than 800 scientific studies and reviews — and conclusions by the U.S. Environmental Protection Agency, the U.S. National Institutes of Health and regulatory authorities around the world — support the fact that glyphosate does not cause cancer, and did not cause Mr. Johnson's cancer."

Nationwide, growers have used an estimated 1.8 million tons of the chemical since it was introduced in the mid-1970s, according to government and industry estimates.

The bulk of glyphosate was sprayed on tens of millions of acres of corn and soy in the Midwest. But California growers also applied it to more than 200 crops across 4 million acres, including 1.5 million acres of almonds, making it their most widely used herbicide, according to the California Department of Pesticide Regulation.

Having inherited a company long vilified by environmental activists as "Monsatan," Bayer faces high potential liabilities from hundreds of similar lawsuits, along with a battle over adding a cancer warning label on products sold in California.

A U.S. District Court judge earlier this year temporarily halted moves by California to require a cancer warning label under Proposition 65, the Safe Drinking Water and Toxic Enforcement Act, passed by voters in 1986.

California's decision to include glyphosate on its list of chemicals linked to cancer followed a 2015 ruling by the Europe-based International Agency for Research on Cancer that the chemical is a "probable" carcinogen.

The U.S. EPA as well as its counterpart agencies in the European Union have disagreed with the conclusion reached by that panel, which is part of the World Health Organization. Last December, the U.S. EPA ruled that glyphosate was "not likely" to cause cancer.

California's Office of Environmental Health Hazard Assessment, the agency that listed the chemical as a probable carcinogen, is finalizing its regulation establishing a "safe" threshold under which glyphosate products would be exempt from the Proposition 65 warning provisions.

New Times San Luis Obispo
Let's ban glyphosate
https://www.newtimesslo.com/sanluisobispo/lets-ban-glyphosate/Content?oid=8217004
Ethel Landers, Arroyo Grande
Posted: April 11, 2019

Remember, as a child, how we delighted when we saw dandelions in the lawn? Possibly our parents gave us an allowance if we pulled them with a tool. Remember how weeds would pop up in the sidewalk and we'd use a knife to clear them from the cracks? It took time. We had to bend over. We had to use a tool. It took labor and we burned calories.

Then, in the 1970s (and to the demise of health and the possible death of untold people and animals), Monsanto convinced us they had a better idea. Roundup, aka glyphosate, became our savior. Why do manual labor when we can spray Roundup—glyphosate? Why hire laborers to till or hoe when you can hire far fewer laborers to spray Roundup—glyphosate?

Around 2000, Monsanto's patent expired, and now glyphosate is ubiquitous and marketed under numerous names. Glyphosate is now estimated to be throughout our food chain, in every brand of California wine, and now seeping into our water supply. Poison now penetrates our systems and causes untold negative results.

In early April, Los Angeles County supervisors placed a moratorium on the use of glyphosate until the effect on health is better understood. It's time for San Luis Obispo and Santa Barbara counties to do the same. Poison kills weeds, animals, people—our earth.

NPR
As Weeks Outsmart the Latest Weedkillers, Farmers Are Running Out Of Easy Options
https://www.npr.org/sections/thesalt/2019/04/11/710229186/as-weeds-outsmart-the-latest-weedkillers-farmers-are-running-out-of-options
Dan Charles
Posted: 5:12am, April 11, 2019

There was a moment, about 20 years ago, when farmers thought that they'd finally defeated weeds forever.

Biotech companies had given them a new weapon: genetically engineered crops that could tolerate doses of the herbicide glyphosate, also known by its trade name, Roundup. Farmers could spray this chemical right over their crops, eliminate the weeds, and the crops were fine.

Stanley Culpepper remembers that moment. He'd left his family's farm to study weed science at North Carolina State University. "I was trained by some really, really amazing people," he says, "and I was even trained that there would never be a weed that was resistant to Roundup."
These scientists believed that plants couldn't become immune to Roundup because it required too big of a change in a plant's biology.

In 2005, though, Culpepper reported that he'd found some weeds that Roundup could not kill. They were growing in a field in Georgia. And this was not just any weed. It was a kind of monster weed called Palmer amaranth, or pigweed.
Over the following years, these glyphosate-resistant pigweeds spread like a plague across America's farmland. They're practically everywhere in the South now and increasingly common in the Midwest.

"The impact is just unbelievable," Culpepper says. "We've invested over $1.2 billion, just in the cotton industry, for control of glyphosate-resistant Palmer amaranth since we first discovered it."

So biotech companies rolled out a new answer: new genetically engineered varieties of soybeans and cotton that can tolerate two other herbicides, called dicamba and 2,4-D. Farmers can plant these crops and then spray those chemicals, often in addition to glyphosate, to kill their weeds.
There's a lot riding on these new products, for farmers and for pesticide companies. Dicamba-tolerant crops, in particular, have provoked controversy. But now, even before they've been fully launched, there's evidence that this weed-killing tactic may be starting to fail.
The evidence is sitting in a greenhouse at Kansas State University, carefully tended by Chandrima Shyam, a graduate student there.
"These are plants that were sprayed with 2,4-D. And these are the resistant plants," she says. "You can see that the resistant plants are pretty vigorous."
I see trays and trays of green, flourishing pigweeds. They are the offspring of weeds that another Kansas State scientist, Dallas Peterson, noticed last summer in a field where he conducts research. They seemed to survive every chemical he threw at them.
"We were just not able to control or kill those weeds following those herbicide applications," he says.

He called in a colleague who specializes in research on herbicide resistance, Mithila Jugulam, who in turn enlisted Shyam's help.

"So we went to the field. We dug out the whole plants, brought them to the greenhouse and kept them in isolation," Shyam says.

They grew 10 Palmer amaranth plants until they produced seeds, then replanted those seeds to produce new generations of plants in order to study them. They found that these pigweeds can survive sprays of 2,4-D. Some plants also appear to be immune to dicamba, although that still needs to be confirmed. The plants probably are resistant to glyphosate as well.

Basically, they're a farmer's nightmare. And if they showed up in one field, they're probably in other fields, too.

Culpepper, at the University of Georgia, says he's not surprised. Nobody should be surprised anymore by the superpowers of pigweed, he says. "I'm telling you, as a weed scientist, it's just an absolutely fascinating plant," he says. "You have to respect it, and the first thing to respect it is, [know that] this plant will outsmart me if I do the same thing over and over again."

Culpepper tells farmers that they still can control this superweed, but they need to use a bunch of different tools. That means deploying multiple chemicals, alternating the crops that they plant, and planting extra "cover crops" in the off season to cover the soil and make it harder for weeds to emerge.
Matt Coley, a farmer in Vienna, Ga., says most growers learned a lot from their experience losing Roundup as a cure-all for weeds. "As long as we continue to follow the recommendations not to rely just on one chemistry, I think we'll continue to be able to manage pigweed," he says.

But dicamba and 2,4-D are among the herbicides he uses on his cotton crop, and he admits it's a little unsettling to hear about Palmer amaranth plants that these chemicals won't kill. He's hoping for new weapons in his arsenal. "The industry, the manufacturers — for them to be in business, they've got to have farmers," he says. "Hopefully they're utilizing their research and development to continue to provide us with products that will help us control our pests in our crops."

The arsenal is running out, though. And that's what worries Culpepper the most. "We haven't had a new way to kill a weed with a herbicide since 1984," he says.

Meanwhile, weeds like Palmer amaranth and ryegrass have been defeating one chemical after another. "This is a monumental challenge we're facing. Is dicamba- and 2,4-D-resistant pigweed surprising? No," he says. "[But] the overall issue with resistance is flat-out overwhelming."

PoliticoPro
Perdue defends glyphosate again, attacking Vietnam's ban
https://subscriber.politicopro.com/article/2019/04/perdue-defends-glyphosate-again-attacking-vietnams-ban-3068253
Liz Crampton
Posted: 10:25am, April 11, 2019

Agriculture Secretary Sonny Perdue stepped up his defense of glyphosate today by condemning Vietnam's ban of the herbicide, saying the move will "have devastating impacts on global agricultural production."

Vietnam's Ministry of Agriculture and Rural Development this week decided to forbid use of glyphosate based on some scientific studies that suggest the chemical used to fight weeds in farms and lawns causes cancer. Two juries in California have also recently issued multimillion-dollar verdicts against Bayer, the manufacturer of the popular weedkiller Roundup, which contains glyphosate.

Earlier this week, Perdue told members of the House Appropriations agriculture panel that it would be "devastating" if Bayer decides to pull glyphosate from the market. Bayer has insisted that the chemical is safe, citing numerous studies from public health authorities such as the EPA.

"This ban flies on the face of that scientific evidence," Perdue said about Vietnam's decision. The decision goes into effect 60 days from the announcement and will ban imports of herbicides containing glyphosate.

"Vietnam also needs to look at the potential ramifications for its own farmers," he continued. "In addition to the immediate effect of slowing the development of Vietnamese agricultural production, there's the very real risk that Vietnam's farmers will turn to unregulated, illegal chemical products in place of glyphosate."

Bayer's shares have dropped in the aftermath of the U.S. verdicts, angering some investors that say the company didn't fully account for the legal risk of purchasing Monsanto, the developer of Roundup.

One of Bayer's largest shareholders, Deka, publicly criticized the merger this week, saying Bayer underestimated the legal exposure it would face. Thousands more federal and state cases claiming glyphosate is to blame for cancer are awaiting their turn in court.

Reuters
EPA should revoke Monsanto weed killer approval, groups tell U.S. court
https://www.reuters.com/article/us-usa-pesticides-dicamba/epa-should-revoke-monsanto-weed-killer-approval-groups-tell-u-s-court-idUSKCN1LE2G2
Tina Bellon
Posted: August 29, 2018

(Reuters) - Environmental groups argued in federal appeals court on Wednesday the U.S. Environmental Protection Agency failed to analyze the risks Bayer AG (BAYGn.DE) Monsanto's dicamba-based weed killer posed to nearby crops before approving it in 2016.

The groups, which filed a lawsuit in February, want the court to force the EPA to vacate its approval of XtendiMax, arguing it not only harms nearby crops and plants but wildlife as well. It is not clear whether the court has the authority to revoke an EPA approval.

The United States has faced a weed-killer crisis caused by the new formulations of dicamba-based herbicides, which farmers and weed experts say have harmed crops because they evaporate and drift away from where they are applied.

"The EPA's declaration that XtendiMax would have no effect on plants and animals was arbitrary and capricious," Paul Achitoff, a lawyer for non-profit Earthjustice told a three-judge panel at the 9th U.S. Circuit Court of Appeals in Seattle during a hearing.

The arguments come at a critical time for Monsanto and other agrochemical companies that developed dicamba-based products, such as BASF SE's (BASFn.DE) Engenia and DowDuPont Inc's (DWDP.N) FeXapan. The EPA is currently deciding whether to renew dicamba's sales license, which expires on Nov. 8, for the next growing season.

Monsanto, a unit of Bayer, urged the court to dismiss the lawsuit.

Dicamba is used in part to destroy weeds that have become resistant to glyphosate, another herbicide developed by Monsanto. Monsanto denies crop damage was caused by XtendiMax and says drift occurred because farmers illegally applied older dicamba formulations or failed to follow instructions.

Bayer Chief Executive Werner Baumann during an analyst call last week said his company was in discussions with the EPA about the sales license renewal and expects the agency to decide by October.

Environmental groups, including the National Family Farm Coalition, Center for Food Safety, Center for Biological Diversity and Pesticide Action Network North America, say the EPA failed to conduct its own analysis and instead relied on statements by Monsanto executives and lawyers.

The EPA in 2016 approved new XtendiMax uses for soybean and cotton fields, concluding dicamba would have "no effect" on animals or their habitat.

But U.S. Appeals Court Judge William Fletcher questioned whether the EPA indeed relied on sufficient studies to make its decision.

"After all, you guys turned out to be wrong," Fletcher said, referring to the more than 3 million acres, or 4 percent of the U.S. soybean crop, that was destroyed by dicamba drift during the 2017 planting season, according to a university study.

Rolling Stone
Monsanto's EPA-Manipulating Tactics Revealed in $289 Million Case
https://www.rollingstone.com/politics/politics-features/monsanto-cancer-710902/
Tessa Stuart
Posted: August 14, 2018

For years, DeWayne "Lee" Johnson drove a truck with a 50-gallon tank of Monsanto's Ranger Pro pesticide mounted on top. A groundskeeper for the Benicia Unified School District in Solano County, California, north of San Francisco, Johnson went through hundreds of gallons of the stuff every week between the truck and his backpack sprayer. When it was windy, the pesticide would coat his body in a fine chemical mist. One day, the tank's hose broke, soaking him from head to toe. A few months later, he developed a rash on his knee. A few months after that, the rash spread across his body. In 2014, Johnson was diagnosed with non-Hodgkin lymphoma.

On Friday, a California jury found that Monsanto's products likely caused Johnson's cancer, and ordered the company to pay the terminally-ill groundskeeper $289 million. As the first of an estimated 5,000 similar suits pending against Monsanto, the judgement is a harbinger of trouble for the company. After the decision was announced, the stock price of Monsanto's parent company, Bayer, nosedived on concerns Monsanto may be liable for *billions* more in damages. But the product the jury believes caused Johnson's cancer is still on the market. That's because the EPA, as recently as November 2017, declared the chemical harmless to humans. At trial, Johnson's legal team was able to demonstrate, via internal emails, just how deeply Monsanto was involved in getting the EPA to reach that conclusion.

Three months after receiving his prognosis, Johnson called Monsanto to ask if there might be a connection between his cancer and the chemicals he worked with every day. "He was told no, there is no connection," Johnson's lawyer, Timothy Litzenburg, tells *Rolling Stone*. Monsanto's medical director was alerted to the call; he was supposed to call Johnson back to get more information; Johnson says he never heard from the man. He kept spraying.

A few months later, in March 2015 — the same month the World Health Organization announced its analysis that glyphosate, the active ingredient in both Ranger Pro and Roundup, the most widely used pesticide in the world, was a "probable carcinogen" — Johnson called the Missouri Regional Poison Control Center. (The center has a contract with Monsanto to consult with anyone who contacts the company with health concerns.) "Instead of saying 'The WHO says it causes cancer, we disagree,' he was just told no, it doesn't cause it," Litzenburg says. Johnson kept spraying.

He had no reason to think he ought to stop because, according to the U.S. government, glyphosate is "not likely to be carcinogenic to humans." Jurors in Johnson's case, however, were not only persuaded there was overwhelming scientific evidence glyphosate can cause certain types of cancer, they were convinced that Monsanto was aware of the risk, and made concerted efforts to distort both scientific research and public opinion about it.

Plaintiff Dewayne Johnson reacts after hearing the verdict to his case against Monsanto at the Superior Court Of California in San Francisco, California, on August 10th, 2018.

Internal documents produced in court indicated Monsanto had reason to believe glyphosate was dangerous as early as 1983, when a study conducted by the company discovered a statistically-significant increased risk of cancer in mice who were treated with glyphosate. The EPA was alarmed by the finding, but Monsanto dismissed the results, saying it wasn't definitive because a single mouse who was *not* exposed to the pesticide also developed a tumor. The agency wanted the study replicated, but Monsanto refused. "They fought over that one mouse's kidney for years, spent millions of dollars on experts, instead of just doing the test again," Litzenburg says. "The EPA even offered a compromise — let's just do a kidney and liver test. Monsanto said 'no.' It's amazing how often they're able to say no to the EPA."

The reason the company was able to say 'no' to the agency ostensibly charged with regulating its products, says Nathan Donley, a senior scientist at the Center for Biological Diversity, is because the pesticide companies quite literally bankroll the EPA's pesticide office. Under the Pesticide Registration Improvement Act, pesticide manufacturers are required to pay registration fees, and those fees amount to about a third of the office's operating budget.

The system was originally conceived as a way to make sure the companies who profit from the products pay for the costs associated with regulating those products, rather than the taxpayers. But, in Donley's view, the plan has backfired spectacularly. "If industry is paying for 30-to-40 percent of the operating cost — the salaries — of the pesticide office, who are they working for?"

One thread of emails revealed in court demonstrated that precise dynamic, to damning effect. A matter of weeks after WHO declared glyphosate a probable cancer-causer, emails flew as Monsanto planned its response. In one, employees discuss "approaching EPA and… ask if there is anything that would help them defend the situation?" Ultimately, the Monsanto employees settled on a plan to enlist the help of Jess Rowland, who served as deputy division director in the health effects division of the EPA's Office of Pesticide Programs at the time. In emails, Rowland, who also chaired the committee reviewing the safety of glyphosate, assured Monsanto officials he was in control of the process.

Rowland's word appeared good enough for one Monsanto executive, who later wrote in an internal email, "We know, but cannot say, the EPA's Office of Pesticide Program scientists strongly feel the glyphosate does not cause cancer and have defended their written determination internally for months." In another email, Dan Jenkins, in charge of regulatory affairs at Monsanto, wrote Rowland and told him about a planned study of glyphosate — not at the EPA, but at the Agency for Toxic Substances and Disease Registry, overseen by an entirely different government agency. Rowland, Jenkins said in an email to his colleague, told him, "If I can kill this I should get a medal." (The study has not been conducted.)

In May 2016, two weeks before the European Union was set to vote on whether or not to allow the use of glyphosate-based pesticides, the report produced by Rowland's committee declaring glyphosate safe

mysteriously appeared online. The EPA quickly took the document down, saying its assessment was not yet completed, but not before Monsanto put out a statement declaring the agency had issued an "official classification" that glyphosate was safe. Rowland was placed on administrative leave a few days later. He left the EPA shortly thereafter and now works as a consultant. (The EPA's inspector general is currently investigating his conduct.)

Nevertheless, the EPA, under the Trump administration, ultimately came to the conclusion Monsanto was looking for, announcing in November 2017 its belief that glyphosate is not a carcinogen.

In the absence of government intervention, more and more people who, like Johnson, developed cancer after using glyphosate-based pesticides like Roundup are turning to civil arbitration. Johnson's was the first judgement of an estimated 5,000 lawsuits currently pending against Monsanto concerning glyphosate.

"The courts are really the last line of defense," Donley says.

Courts, though, can be slow. Monsanto is planning to appeal the jury's decision, which means Johnson, who doctors believe has only matter of months left, will probably die before his family sees a cent from the corporation. In the meantime, Monsanto is paying in other ways. When trading opened Monday after the jury's decision, shares for Bayer, which acquired Monsanto in June, fell 11 percent. (An Australian company that manufacturers a similar product also fell 17 percent on the news.)

"The amount of money they lost on the stock market today would have taken care of all of our clients long ago," Litzenburg says.

The Wall Street Journal
EPA Allows Farmers to Keep Using Bayer's Controversial Weedkiller
https://www.wsj.com/articles/epa-allows-farmers-to-keep-using-bayers-controversial-weedkiller-1541040054
Jacob Bunge
Posted: October 31, 2018

The Environmental Protection Agency will continue to allow farmers to spray crops with a controversial weedkiller, while tightening restrictions, the agency said.

The EPA extended by two years its approval of XtendiMax, a version of the herbicide dicamba made by Bayer BAYRY -0.20% AG, which some farmers and researchers have blamed for damaging millions of acres of crops over the past two years.

The decision is a win for Bayer, which also markets soybean and cotton seeds genetically engineered to survive the chemical. Bayer this year acquired U.S. seed and pesticide giant Monsanto, which in 2018 sold about 50 million acres' worth of dicamba-tolerant soybean and cotton seeds to farmers while training them how to spray the herbicide and avoid damaging other crops.

"EPA understands that dicamba is a valuable pest control tool for America's farmers," said acting EPA administrator Andrew Wheeler.

For Bayer, the EPA's approval will preserve an estimated $159 million in profits from dicamba in 2019, according to Bernstein analysts. The EPA will require new buffer zones and limit the hours farmers are allowed to apply the spray, in an effort to prevent it from drifting.

Monsanto began marketing XtendiMax after initial EPA approval in late 2016. The company pitched it as a way to stop weeds resistant to glyphosate, the herbicide Monsanto markets as Roundup. Dicamba, the main ingredient in XtendiMax, historically has been prone to drifting.

Monsanto said its new version of dicamba was far less prone to drift. But some farmers and weed scientists blamed dicamba for hundreds of damaged fields. Monsanto officials attributed the vast majority of harmed fields to farmers spraying on windy days and other errors.

University of Missouri researchers in July estimated 1.1 million acres of soybeans were affected this year, including 500,000 acres in Illinois, the top soybean-producing state.

Corrections & Amplifications

A previous version of this article was incorrectly accompanied by a photograph of a crop duster. The dicamba herbicide discussed in the article isn't applied from the air.

The Washington Post
What's Next in Court for Bayer Toxic Chemical Claims
https://www.washingtonpost.com/business/whats-next-in-court-for-bayer-toxic-chemical-claims/2019/02/25/2963a284-391e-11e9-b10b-f05a22e75865_story.html?utm_term=.3325881a8d21
Joel Rosenblatt, Margaret Cronin Fisk
Posted: February 25, 2019

Many Bayer AG investors didn't realize just how much litigation risk they were getting when the German company spent $66 billion in June to acquire Monsanto Co., the giant U.S. seed and herbicide maker. A San Francisco jury's August 2018 award of $289 million to a groundskeeper who blamed Monsanto's blockbuster weedkiller, Roundup, for his cancer sent shares down the most since 2001. While Bayer won a ruling to cut the award to $78.6 million, more than 8,500 additional plaintiffs are making similar claims. And with a flood of pending lawsuits over waterways contaminated with PCBs and fresh cases emerging over another Monsanto herbicide, dicamba, investors are left to ponder the final cost of Bayer's increased legal exposure.

1. Why is Roundup such a big target for litigation?

It contains the weed-killing chemical glyphosate, which has become widely used by commercial farmers and home gardeners. Over more than four decades, about 3.5 billion pounds of glyphosate was sprayed in the U.S. The lawsuits were filed after glyphosate was declared a probable human carcinogen in 2015 by the International Agency for Research on Cancer, an arm of the World Health Organization. However, like other regulators around the world, the U.S. Environmental Protection Agency said in 2017 that glyphosate isn't likely to be carcinogenic to humans at current exposure levels. Monsanto developed Roundup in the 1970s, and then created a multibillion-dollar business around seeds that it genetically modified to resist the chemical.

2. Why was the San Francisco case so alarming to investors?

When Bayer sought to acquire Monsanto, much of the attention was focused on the regulatory obstacles of combining global makers of crop chemicals. But the Aug. 10 verdict in the groundskeeper's case put a spotlight on the potential risk of litigation sparked by Roundup and other potentially harmful chemicals. Jonas Oxgaard, an analyst at Sanford C. Bernstein & Co., has estimated Bayer may face $5 billion in legal costs and plaintiff payouts as a result of its Monsanto acquisition, which would rank among the biggest ever by a company facing damage claims made by private individuals.

This is on top of the litigation of its own that Bayer must contend with, including more than 16,000 lawsuits brought by women who claim they were injured by the company's Essure birth control device.

3. What's Bayer's strategy for limiting its exposure?

Bayer vowed after the Johnson verdict to step up its defense, emphasizing scientific research that shows no link between Roundup and cancer in humans. Even as it pursues an appeal to set aside the Johnson verdict, the company is concentrating on getting wins in federal court in San Francisco, where cases on behalf of more than 9,000 plaintiffs have been collected and the company may stand a better chance of success. U.S. District Judge Vince Chhabria has expressed skepticism about the evidence linking Roundup to cancer, and has structured the second trial in a way that excludes some of the most damning material from a crucial first phase of the proceeding.

4. Where are the next trials happening?

The second trial is scheduled for Feb. 25 in San Francisco federal court. There's another trial set for March in state court Oakland, California, and one in June in city court in St. Louis, where Monsanto was headquartered for 117 years and Bayer now runs its North American crop-science business. Bayer can't count on a hometown advantage. Plaintiff lawyers have flocked to the circuit court for the city of St. Louis, which has produced some of the largest verdicts in U.S. product-defect claims. While the U.S. Supreme Court in 2017 made it harder to combine lawsuits in state courts by non-residents, Bayer, as a local defendant, has little chance of blocking the Monsanto trials in St. Louis given recent Missouri court decisions.

5. How big are Bayer's other Monsanto-related risks?

While Bayer expects glyphosate to remain the world's biggest herbicide for years, some weeds are growing resistant to the chemical. That's led to development of genetically modified seeds that can be used in conjunction with another weedkiller, dicamba. However, dicamba can vaporize after application and drift onto nearby fields of non-resistant crops. In 2017, an Arkansas farmer was shot and killed by his neighbor in a dispute over dicamba damage. Scores growers across the Midwest have sued Monsanto over its dicamba product, known as Roundup Ready Xtend Crop System. The farmers are demanding compensation for soybeans, cotton, fruit trees and vegetable crops damaged by dicamba spraying, and they are seeking class-action status for thousands of claims. At least one trial is scheduled for October 2019 in Missouri federal court.

6. What's Bayer doing about dicamba?

Before the takeover, Monsanto developed new formulations that it said would keep the weedkiller on the plants where it's been applied, preventing drift onto untreated crops. In October, Bayer won EPA renewal of the registration for its dicamba-based product, XtendiMax with VaporGrip, albeit with restrictions on the chemical's use. In 2018, U.S. farmers sprayed dicamba on about 50 million acres of soybean and cotton crops. Of that, about 1 million acres of soybeans were damaged by the herbicide. Should litigation further restrict dicamba and related products, Bayer could lose $1 billion in annual sales from a business that is key to expanding the agrochemical businesses it acquired from Monsanto.

7. Why are PCBs that Monsanto made decades ago a problem?

More than a dozen U.S. states, cities or port authorities allege the company is responsible for contaminating their waterways with PCBs, chemical compounds used in transformers, paints, sealants and multiple other products. PCBs were prized for their fire-resistant properties, particularly by defense contractors, but production was banned in the U.S. in 1979 over environmental concerns. The pending suits claim Monsanto knew that PCBs, polychlorinated biphenyls, were toxic to humans and wildlife and could cause contamination far into the future, but hid the risk and continued to make the product. Plaintiffs include the states of Washington, Oregon and Ohio as well as the cities of San Diego, Portland and Seattle.

8. What's at stake in the PCB cases?

The ultimate bill for these lawsuits, should the plaintiffs prevail, is unknown. The state of Oregon asked for more than $100 million, but the others haven't provided estimates of damages, including cleanup and rehabilitation costs. The first of seven scheduled trials will probably be in February 2020 in a lawsuit brought by the city of Spokane, Washington. Monsanto has countered that it never discharged PCBs into any waterways, isn't responsible for dumping by third parties, and that the cities and states waited too long to sue. The plaintiffs contend the PCB contamination is a continuing nuisance, so their claims aren't time barred. Several judges have agreed, rejecting Monsanto's motions to dismiss. The lawsuits aren't claiming any personal injuries caused by PCB exposure. The company settled those cases in 2016 for $280 million.

--With assistance from Lydia Mulvany and Jef Feeley.

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To contact the editors responsible for this story: Elizabeth Wollman at ewollman@bloomberg.net, Steve Stroth, Laurence Arnold

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From: Strauss, Linda
Sent: Monday, April 22, 2019 2:12 PM
To: Mack, Sara <mack.sara@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>
Subject: RE: clips on EPA glyphosate

If you can, back to Feb 28, 2018. That is when we released the human health risk assessment. Thank you, Sara!

From: Mack, Sara
Sent: Monday, April 22, 2019 1:58 PM
To: Grantham, Nancy <Grantham.Nancy@epa.gov>
Cc: Strauss, Linda <Strauss.Linda@epa.gov>
Subject: RE: clips on EPA glyphosate

Hi,

Working on this now – how far back should I go?

Thanks!
Sara

From: Grantham, Nancy
Sent: Monday, April 22, 2019 1:45 PM
To: Mack, Sara <mack.sara@epa.gov>
Cc: Strauss, Linda <Strauss.Linda@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>
Subject: FW: clips on EPA glyphosate

Hi Sara,

Could you pull these clips this afternoon for Linda in OCSPP

Thanks ng

From: Strauss, Linda
Sent: Monday, April 22, 2019 1:42 PM
To: Grantham, Nancy <Grantham.Nancy@epa.gov>
Cc: Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: clips on EPA glyphosate

Exactly. Would be awesome.

From: Grantham, Nancy
Sent: Monday, April 22, 2019 1:41 PM
To: Strauss, Linda <Strauss.Linda@epa.gov>
Cc: Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: RE: clips on EPA glyphosate

So previous clips? Thanks ng

From: Strauss, Linda
Sent: Monday, April 22, 2019 1:34 PM
To: Grantham, Nancy <Grantham.Nancy@epa.gov>
Cc: Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: Re: clips on EPA glyphosate

But meeting with Alex tomorrow and might be good to have the clips.

Sent from my iPhone

On Apr 22, 2019, at 1:29 PM, Grantham, Nancy <Grantham.Nancy@epa.gov> wrote:

> Yes .. next week? Thanks ng
>
> ---
>
> **From:** Strauss, Linda
> **Sent:** Monday, April 22, 2019 1:17 PM
> **To:** Grantham, Nancy <Grantham.Nancy@epa.gov>
> **Cc:** Drinkard, Andrea <Drinkard.Andrea@epa.gov>
> **Subject:** clips on EPA glyphosate
>
> Possible for Sarah to pull clips on this?