From: Heather Spalding
Sent: Wednesday, May 03, 2017 12:17 PM
To: Pesticides
Subject: A few other articles for next BPC meeting packet

Hello again folks at Maine's BPC office,

I would like to submit the following materials for inclusion in the upcoming meeting packet.

https://psmag.com/inside-the-academic-journal-that-corporations-love-a1dbe48cca1c

https://mobile.nytimes.com/2017/03/14/business/monsanto-roundup-safety-lawsuit.html?_r=2&referer=

http://www.huffingtonpost.com/entry/usda-drops-plan-to-test-for-monsanto-weed-killer-in_us_58d2db4ee4b062043ad4af84

https://www.sciencedaily.com/releases/2017/04/170426093454.htm

https://www.washingtonpost.com/news/speaking-of-science/wp/2017/04/05/iowa-scientists-find-first-evidence-of-popular-farm-pesticides-in-drinking-water/?utm_term=.4bd2fe99c34f

http://www.foe.org/news/news-releases/2017-05-walmart-and-true-value-to-phase-out-bee-killing-pest

Thanks very much,

Heather Spalding
Deputy Director
MOFGA

Pacific Standard Follow
Stories from the staff of—and contributors to—the award-winning Pacific Standard.
Mar 28 · 7 min read

Inside the Academic Journal That Corporations Love

A recent Monsanto lawsuit opens a scary window into the industry of junk science.

By Paul D. Thacker

(Image: Mike Mozart/Flickr)

A recent lawsuit against Monsanto offers a clear and troubling view into industry strategies that warp research for corporate gain. In a lawsuit regarding the possible carcinogenicity of the pesticide Roundup, plaintiffs' lawyers suing Monsanto charge the company with ghostwriting an academic study finding that Roundup's active ingredient, glyphosate, is not harmful. Glyphosate is the world's most widely used weed killer and is critical for successful cultivation of genetically modified crops such as corn and soybean, which are resistant to the pesticide.

Ghostwriting remains pervasive in some areas of academic research; in 2010, I helped author a Senate report on the matter. Studies drafted by corporations and then published in scientific journals with academic authors have been used to sway government decisions, court cases, and even medical practice. A host of universities have been caught in ghostwriting scandals, including Harvard University, Brown University, Stanford University, and Emory University.

The study currently under scrutiny appeared in 2000 in *Regulatory Toxicology and Pharmacology*, the journal of the International Society of Regulatory Toxicology and Pharmacology. On closer inspection, the ghostwriting charges seem unconvincing , and *Science* magazine reports that officials at one university have investigated and rejected the charges.

Monsanto has also strenuously denied the ghostwriting allegations and defends the integrity of the study on a blog: "The paper also underwent the journal's rigorous peer review process before it was published."

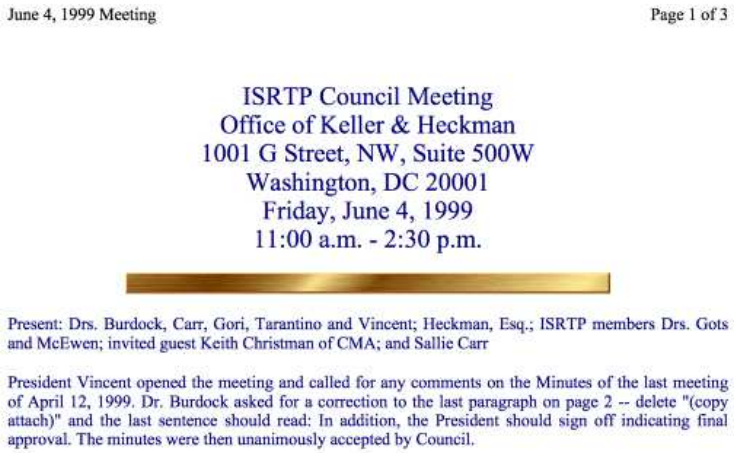
But the term "rigorous" is hardly an accurate description for the journal. Indeed, a glance into the journal's history offers a telling window into the industry of creating and packaging junk science with the appearance of academic rigor.

"*Regulatory Toxicology and Pharmacology* is a vanity journal that publishes mercenary science created by polluters and producers of toxic chemicals to manufacture uncertainty about the science underlying public-health and environmental protections." says David Michaels, professor of environmental and occupational health at the George Washington University School of Public Health. (Michaels recently returned to this position after serving as the administrator of the United States Occupational Safety and Health Administration.)

The problem is that it's not just Monsanto, and it's not just this one journal. Corporations regularly buy academics to do their bidding, recasting industry talking points to create the beginnings of an alternative scientific canon.

The history here is long, and damning. In 2002, several academics and public-health activists sent a letter to Elsevier complaining that the journal lacked transparency and a conflicts-of-interest policy, and that it could not demonstrate editorial independence from corporate sponsors. A couple of years later, I began studying the ISRTP's membership and journal, and combing through the minutes of the society's meetings.

The year before the journal published the Roundup study, the society held its June 1999 council meeting in the Washington, D.C., office of Keller and Heckman, the chief law firm for the chemical industry. In a recent court case, for example, Keller and Heckman represented the Vinyl Institute in a lawsuit to roll back 2012 regulations from the Environmental Protection Agency limiting toxics emitted during PVC production. Keller and Heckman also bills itself as the premier law firm for the tobacco and e-vapor industries. The minutes from the June meeting note a member of Keller and Heckman attending along with representatives of several chemical industry trade associations. Minutes from February 2002 also record the meeting taking place in Keller and Heckman's D.C. office and state that future meetings will also be held at the law firm.



June 4, 1999 Meeting Page 1 of 3

ISRTP Council Meeting
Office of Keller & Heckman
1001 G Street, NW, Suite 500W
Washington, DC 20001
Friday, June 4, 1999
11:00 a.m. - 2:30 p.m.

Present: Drs. Burdock, Carr, Gori, Tarantino and Vincent; Heckman, Esq.; ISRTP members Drs. Gots and McEwen; invited guest Keith Christman of CMA; and Sallie Carr

President Vincent opened the meeting and called for any comments on the Minutes of the last meeting of April 12, 1999. Dr. Burdock asked for a correction to the last paragraph on page 2 -- delete "(copy attach)" and the last sentence should read: In addition, the President should sign off indicating final approval. The minutes were then unanimously accepted by Council.

(Image: Paul D. Thacker)

"[I]t is unusual to see a regulatory toxicology journal run out of a law practice office!" says Dr. Lynn Goldman, dean of the Milken Institute School of Public Health at George Washington University and one of the signatories on the 2002 letter.

"Having its meetings hosted by a corporate law firm is so obviously inappropriate—unless you aren't so much a scientific society as a faux-science outlet for the corporate clients and funders of the journal's authors," says Jennifer Sass, a senior scientist who specializes in chemical policy at the Natural Resources Defense Council and is another of the 2002 letter signatories. After reviewing the Roundup study published in 2000, Sass says it doesn't appear to be "what we normally call ghostwriting." The study's acknowledgement section, which is hidden behind the journal's paywall, clearly notes Monsanto's heavy involvement in the study's science.*

"These people wouldn't be able to stuff the scientific literature so successfully—muddying the waters and creating the false impression of controversy—if they didn't have their go-to journals like *Reg Tox Pharm*," she adds.

Examining the journal's editorial board, Sheldon Krimsky, a professor at Tufts University who studies conflicts of interest and corporate influence on science, notes that industry consultants litter the journal's masthead. Indeed, the journal's editor is Gio Gori, a former consultant for the tobacco industry. In 1998, Gori partnered with

Steven J. Milloy of JunkScience.com in a letter to *Science* magazine criticizing a story about tobacco consultants. I later outed Milloy in the *New Republic* for being on the payroll of the tobacco companies while writing articles for FoxNews.com that disparaged the science of second-hand smoke. And, in 2007, Gori published an op-ed in the *Washington Post* calling the science of second-hand smoke "bogus."

Gori's work for tobacco, Krimsky says, "places his credibility down at the bottom."

Other controversial members of the journal's editorial board include Michael L. Dourson and Dennis J. Paustenbach. Dourson is the president of TERA, a scientific consulting firm that was the subject of a 2014 investigation by Inside Climate News and the Center for Public Integrity highlighting the group's cozy ties to industry. Documents made public during tobacco litigation note Dourson's work for the industry.

When questioned about his tobacco consulting, Dourson said: "Jesus hung out with prostitutes and tax collectors. He had dinner with them." He continued, "We're an independent group that does the best science for all these things. Why should we exclude anyone that needs help?"

In 2005, the *Wall Street Journal* ran a front-page story questioning the role of Paustenbach and his company ChemRisk in a case that became the basis for the movie *Erin Brockovich*. According to the *Journal*, ChemRisk was hired to reanalyze data from a study that found chromium-contaminated groundwater linked with a range of public-health illnesses. Chemrisk's reanalysis of data was then published in a new study under the names of two Chinese researchers without any mention of ChemRisk's involvement, and was promoted for the next decade in court cases and regulatory filings. After the *Journal* article,

the study was retracted, and environmental groups sought to have Paustenbach censured by the Society of Toxicology.

Seven years later, the *Chicago Tribune* wrote an investigative story critical of Paustenbach's work for the chemical industry on flame retardants, and the Center for Public Integrity published an investigation last year noting Paustenbach's work for Ford Motor Company to downplay the dangers of asbestos in car brake pads.

"This might be a kind of a rogue journal that looks like a journal," Krimsky says.

The problem is that it's not just Monsanto, and it's not just this one journal. Corporations regularly buy academics to do their bidding, recasting industry talking points to create the beginnings of an alternative scientific canon. Universities do little to stop it, while academic journals, sometimes prestigious, are often complicit. Perhaps public shame remains the most—or only—effective medicine.

**UPDATE—March 28, 2017: This post has been updated with a new quote from Jennifer Sass.*

Monsanto Weed Killer Roundup Faces New Doubts on Safety in Unsealed Documents

A scanning machine illuminating a bottle of Roundup, a weed killer, as it moved along a production line at a facility in Antwerp, Belgium, owned by Monsanto.
JASPER JUINEN / BLOOMBERG

By DANNY HAKIM
MARCH 14, 2017

Francisco has challenged that conclusion, building on the findings of an international panel that claimed Roundup's main ingredient might cause cancer.

The court documents included Monsanto's internal emails and email traffic between the company and federal regulators. The records suggested that Monsanto had ghostwritten research that was later attributed to academics and indicated that a senior official at the Environmental Protection Agency had worked to quash a review of Roundup's main ingredient, glyphosate, that was to have been conducted by the United States Department of Health and Human Services.

The documents also revealed that there was some disagreement within the E.P.A. over its own safety assessment.

company to prepare a public relations assault on the finding well in advance of its publication. Monsanto executives, in their internal email traffic, also said Mr. Rowland had promised to beat back an effort by the Department of Health and Human Services to conduct its own review.

Dan Jenkins, a Monsanto executive, said in an email in 2015 that Mr. Rowland, referring to the other agency's potential review, had told him, "If I can kill this, I should get a medal." The review never took place. In another email, Mr. Jenkins noted to a colleague that Mr. Rowland was planning to retire and said he "could be useful as we move forward with ongoing glyphosate defense."

The safety of glyphosate is not settled science. A number of agencies, including the European Food Safety Agency and the E.P.A., have disagreed with the international cancer agency, playing down concerns of a cancer risk, and Monsanto has vigorously defended glyphosate.

But the court records also reveal a level of debate within the E.P.A. The agency's Office of Research and Development raised some concern about the robustness of an assessment carried out by the agency's Office of Pesticide Programs, where Mr. Rowland was a senior official at the time, and recommended in December 2015 that it take steps to "strengthen" its "human health assessment."

In a statement, Monsanto said, "Glyphosate is not a carcinogen."

It added: "The allegation that glyphosate can cause cancer in humans is inconsistent with decades of comprehensive safety reviews by the leading regulatory authorities around the world. The plaintiffs have submitted isolated documents that are taken out of context."

The E.P.A. had no immediate comment, and Mr. Rowland could not be reached immediately.

Monsanto also rebutted suggestions that the disclosures highlighted concerns that the academic research it underwrites is compromised. Monsanto frequently cites such research to back up its safety claims on Roundup and pesticides.

paper that eventually appeared "underwent the journal's rigorous peer review process before it was published."

David Kirkland, one of the scientists mentioned in the email, said in an interview, "I would not publish a document that had been written by someone else." He added, "We had no interaction with Monsanto at all during the process of reviewing the data and writing the papers."

The disclosures are the latest to raise concerns about the integrity of academic research financed by agrochemical companies. Last year, a review by The New York Times showed how the industry can manipulate academic research or misstate findings. Declarations of interest included in a Monsanto-financed paper on glyphosate that appeared in the journal Critical Reviews in Toxicology said panel members were recruited by a consulting firm. Email traffic made public shows that Monsanto officials discussed and debated scientists who should be considered, and shaped the project.

"I think it's important that people hold Monsanto accountable when they say one thing and it's completely contradicted by very frank internal documents," said Timothy Litzenburg of the Miller Firm, one of the law firms handling the litigation.

The issue of glyphosate's safety is not a trivial one for Americans. Over the last two decades, Monsanto has genetically re-engineered corn, soybeans and cotton so it is much easier to spray them with the weed killer, and some 220 million pounds of glyphosate were used in 2015 in the United States.

"People should know that there are superb scientists in the world who would disagree with Monsanto and some of the regulatory agencies' evaluations, and even E.P.A. has disagreement within the agency," said Robin Greenwald, a lawyer at Weitz & Luxenberg, which is also involved in the litigation. "Even in the E.U., there's been a lot of disagreement among the countries. It's not so simple as Monsanto makes it out to be."

Correction: *March 18, 2017*
An article on Wednesday about documents unsealed in a case over exposure to

Carey Gillam, Contributor
I am a veteran journalist and research director for U.S. Right to Know, a non-profit consumer education group.

USDA Drops Plan To Test For Monsanto Weed Killer In Food

Much more research is needed to understand the impact on human health of chronic dietary exposures to pesticides, many say.

03/23/2017 03:41 pm ET | **Updated** Mar 27, 2017

The U.S. Department of Agriculture has quietly dropped a plan to start testing food for residues of glyphosate, the world's most widely used weed killer and the key ingredient in Monsanto's branded Roundup herbicides.

The agency spent the last year coordinating with the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA) in preparation to start testing samples of corn syrup for glyphosate residues on April 1, according to internal agency documents obtained through Freedom

year, the glyphosate testing plan was moving forward. But when asked about the plan this week, a USDA spokesman said no glyphosate residue testing would be done at all by USDA this year.

The USDA's plan called for the collection and testing of 315 samples of corn syrup from around the United States from April through August, according to the documents. Researchers were also supposed to test for the AMPA metabolite, the documents state. AMPA (aminomethylphosphonic acid) is created as glyphosate breaks down. Measuring residues that include those from AMPA is important because AMPA is not a benign byproduct but carries its own set of safety concerns, scientists believe.

On Jan. 11, USDA's Diana Haynes wrote to colleagues within USDA:

> *"Based on recent conversations with EPA, we will begin testing corn syrup for glyphosate and its AMPA metabolite April 1, 2017 with collection ending August 31, 2017. This program change will need to be announced at the February PDP Conference Call."*

Haynes is director of a USDA Agricultural Marketing Service division that annually conducts the Pesticide Data Program (PDP), which tests thousands of foods for hundreds of different pesticide residues.

The USDA spokesman, who did not want to be named, acknowledged there had been a glyphosate test plan but said that had recently changed: "The final decision for this year's program plan, as a more efficient use of resources, is to sample and test honey, which covers over 100 different pesticides." Glyphosate residue testing requires a different methodology and will not be part of that screening in honey, he said.

The USDA does not routinely test for glyphosate as it does for other pesticides used in food production. But that stance has made the USDA the subject of criticism as controversy over glyphosate safety has mounted in recent years. The discussions of testing this year come as U.S. and European regulators are wrestling with cancer concerns about the chemical, and as Monsanto, which has made billions of dollars from its glyphosate-based herbicides, is being sued by hundreds of people who claim exposures to Roundup caused them or their loved ones to suffer from non-Hodgkin lymphoma. Internal Monsanto documents obtained by plaintiffs' attorneys in those cases indicate that Monsanto may have manipulated research regulators relied on to garner favorable safety assessments, and last week, Congressman Ted Lieu called for a probe by the Department of Justice into Monsanto's actions.

Along with the USDA, the Food and Drug Administration also annually tests thousands of food

unsafe levels in food products commonly eaten by American families. If they find residues above the "maximum residue level" (MRL) allowed for that pesticide and that food, the agencies are supposed to inform the EPA, and actions can be taken against the supplier. The EPA is the regulator charged with establishing MRLs, also called "tolerances," for different types of pesticides in foods, and the agency coordinates with USDA and FDA on the pesticide testing programs.

But despite the fact that glyphosate use has surged in the last 20 years alongside the marketing of glyphosate-tolerant crops, both USDA and FDA have declined to test for glyphosate residues aside from one time in 2011 when the USDA tested 300 soybean samples for glyphosate and AMPA residues. At that time the agency found 271 samples contained glyphosate, but said the levels were under the MRL — low enough not to be worrisome. The Government Accountability Office took both agencies to task in 2014 for the failure to test regularly for glyphosate.

Europe and Canada are well ahead of the United States when it comes to glyphosate testing in food. In fact, the Canadian Food Inspection Agency (CFIA) is preparing to release its own findings from recent glyphosate testing. The CFIA also routinely skipped glyphosate in annual pesticide residue screening for years. But it began collecting data in 2015, moving to address concerns about the chemical that were highlighted when the World Health Organization's International Agency for Research on Cancer (IARC) classified glyphosate as a probable human carcinogen in March 2015.

Canadian food activist and researcher Tony Mitra obtained more than 7,000 records from CFIA about its glyphosate testing last year, and claims that results are alarming, showing glyphosate pervasive in many foods. CFIA would not respond to requests for comment about its glyphosate testing.

One of the USDA's explanation's for not testing for glyphosate over the years has been cost – the agency has said that it is too expensive and inefficient to look for glyphosate residues in food headed for American dinner tables. And because glyphosate is considered so safe, testing would be a waste of time, the USDA has stated. That argument mimics Monsanto's own – the company, which patented glyphosate in 1974 and has been a dominant provider of glyphosate ever since, says if the USDA did seek to test for glyphosate residues in food it would be a "misuse of valuable resources."

FDA TESTS REMAIN IN LIMBO

The FDA began its own limited testing program for glyphosate residues — what it called a "special assignment" — last year. But the effort was fraught with controversy and internal difficulties and the program was suspended last fall. Before the suspension, one agency chemist found alarming levels of glyphosate in many samples of U.S. honey, levels that were technically illegal because there have been no allowable levels established for honey by the EPA. That revelation caused angst in the beekeeping industry and at least one large honey company was sued by consumer organizations

of oatmeal, including infant oat cereal. The FDA did not publicize those findings, but they were revealed in internal records obtained through a FOIA request.

Officially, the FDA was only looking for glyphosate residues in corn, soy, eggs and milk in last year's testing assignment, though internal records discussed tests on sugar beets, popcorn, wheat and other foods or grains. Newly obtained FDA documents show the agency is engaged now in a "glyphosate collaboration" designed to validate the testing methodology to be used by multiple FDA laboratories.

"Once the first phase of this collaboration is completed and approved by quality control reviewers, the special assignment can be restarted," said FDA spokeswoman Megan McSeveney.

CropLife America, an industry organization that represents the interests of Monsanto and other agrichemical companies, keeps a close eye on the government's pesticide residue testing. Last year the organization sought to diffuse potential legal problems related to glyphosate and other pesticides in honey by asking EPA to set a blanket tolerance that would cover inadvertent contamination of honey by pesticides. Records show regulators have found 26 different pesticides in honey samples in past tests.

CropLife also has complained to USDA that data from its testing program is used by proponents of organic agriculture to promote organics over conventional foods. The group last year sent USDA a series of questions about its testing, and asked USDA: "What can we do to assist you in fighting these scaremongering tactics?"

The USDA's most recent published report on pesticide residues in food found that for 2015 testing, only 15 percent of the 10,187 samples tested were free from any detectable pesticide residues. That's a marked difference from 2014, when the USDA found that over 41 percent of samples were "clean" or showed no detectable pesticide residues. But the agency said the important point was that most of the samples, over 99 percent, had residues below the EPA's established tolerances and are at levels that "do not pose risk to consumers' health and are safe."

Many scientists take issue with using MRLs as a standard associated with safety, arguing they are based on pesticide industry data and rely on flawed analyses. Much more research is needed to understand the impact on human health of chronic dietary exposures to pesticides, many say.

Related...

Why Monsanto Just Rejected A $62 Billion Mega-Merger Offer

FDA Finally Agrees To Test Food For Monsanto's Glyphosate

ScienceDaily®
Your source for the latest research news

Common pesticide damages honey bees' ability to fly

Date: April 26, 2017

Source: University of California San Diego

Summary: Biologists have provided the first evidence that a widely used pesticide can significantly impair the ability of otherwise healthy honey bees to fly. The study, which employed a bee “flight mill,” raises concerns about how pesticides affect honey bee pollination and long-term effects on the health of honey bee colonies.

FULL STORY

A honey bee (Apis mellifera) is harnessed for study on a flight mill in biology professor James Nieh’s laboratory, UC San Diego.

Credit: Simone Tosi, UC San Diego

Biologists at the University of California San Diego have demonstrated for the first time that a widely used pesticide can significantly impair the ability of otherwise healthy honey bees to fly, raising concerns about how pesticides affect their capacity to pollinate and the long-term effects on the health of honey bee colonies.

Previous research has shown that foraging honey bees that ingested neonicotinoid pesticides, crop insecticides that are commonly used in agriculture, were less likely to return to their home nest, leading to a decrease in foragers.

A study published April 26 in *Scientific Reports* by UC San Diego postdoctoral researcher Simone Tosi, Biology Professor James Nieh, along with Associate Professor Giovanni Burgio of the University of Bologna, Italy, describes in detail how the neonicotinoid pesticide thiamethoxam damages honey bees. Thiamethoxam is used in crops such as corn, soybeans and cotton. To test the hypothesis that the pesticide impairs flight ability, the researchers designed and constructed a flight mill (a bee flight-testing instrument) from scratch. This allowed them to fly bees under consistent and controlled conditions.

Months of testing and data acquisition revealed that typical levels of neonicotinoid exposure, which bees could experience when foraging on agricultural crops -- but below lethal levels -- resulted in substantial damage to the honey bee's ability to fly.

"Our results provide the first demonstration that field-realistic exposure to this pesticide alone, in otherwise healthy colonies, can alter the ability of bees to fly, specifically impairing flight distance, duration and velocity" said Tosi. "Honey bee survival depends on its ability to fly, because that's the only way they can collect food. Their flight ability is also crucial to guarantee crop and wild plant pollination."

Long-term exposure to the pesticide over one to two days reduced the ability of bees to fly. Short-term exposure briefly increased their activity levels. Bees flew farther, but based upon other studies, more erratically.

"Bees that fly more erratically for greater distances may decrease their probability of returning home," said Nieh, a professor in UC San Diego's Division of Biological Sciences.

This pesticide does not normally kill bees immediately. It has a more subtle effect, said Nieh.

"The honey bee is a highly social organism, so the behavior of thousands of bees are essential for the survival of the colony," said Nieh." We've shown that a sub-lethal dose may lead to a lethal effect on the entire colony."

Honey bees carry out fundamentally vital roles in nature by providing essential ecosystem functions, including global pollination of crops and native plants. Declines in managed honey bee populations have raised concerns about future impacts on the environment, food security and human welfare.

Neonicotinoid insecticides are neurotoxic and used around the world on broad varieties of crops, including common fruits and vegetables, through spray, soil and seed applications. Evidence of these insecticides has been found in the nectar, pollen and water that honey bees collect.

"People are concerned about honey bees and their health being impaired because they are so closely tied to human diet and nutrition," said Nieh. "Some of the most nutritious foods that we need to consume as humans are bee-pollinated."

Story Source:

Materials provided by **University of California San Diego**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Simone Tosi, Giovanni Burgio, James C. Nieh. **A common neonicotinoid pesticide, thiamethoxam, impairs honey bee flight ability**. *Scientific Reports*, 2017; 7 (1) DOI: 10.1038/s41598-017-01361-8

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University of California San Diego. "Common pesticide damages honey bees' ability to fly." ScienceDaily. ScienceDaily, 26 April 2017. <www.sciencedaily.com/releases/2017/04/170426093454.htm>.

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The Washington Post

Speaking of Science

First evidence found of popular farm pesticides in drinking water

By Ben Guarino April 5

Of the many pesticides that American farmers have embraced in their war on bugs, neonicotinoids are among the most popular. One of them, called imidacloprid, is among the world's best-selling insecticides, boasting sales of over $1 billion a year. But with their widespread use comes a notorious reputation — that neonics, as they are nicknamed, are a bee killer. A 2016 study suggested a link between neonicotinoid use and local pollinator extinctions, though other agricultural researchers contested the pesticides' bad rap.

As the bee debate raged, scientists studying the country's waterways started to detect neonicotinoid pollutants. In 2015, the U.S. Geological Survey collected water samples from streams throughout the United States and discovered neonicotinoids in more than half of the samples.

And on Wednesday, a team of chemists and engineers at the USGS and University of Iowa reported that they found neonicotinoids in treated drinking water. It marks the first time that anyone has identified this class of pesticide in tap water, the researchers write in Environmental Science & Technology Letters.

Gregory LeFevre, a study author and U of Iowa environmental engineer, told The Washington Post that the find was important but not immediate cause for alarm.

"Having these types of compounds present in water does have the potential to be concerning," he said, "but we don't really know, at this point, what these levels might be."

If the dose makes the poison, the doses of insect neurotoxin reported in the new study were quite small. The scientists collected samples last year from taps in Iowa City as well as on the university campus and found neonicotinoid concentrations ranging from 0.24 to 57.3 nanograms per liter — that is, on a scale of parts per trillion. "Parts per trillion is a really, really small concentration," LeFevre said, roughly equal to a single drop of water plopped into 20 Olympic-size swimming pools.

The Environmental Protection Agency has not defined safe levels of neonicotinoids in drinking water, in part because the chemicals are relative newcomers to the pesticide pantheon. “There is no EPA standard for drinking water,” LeFevre said.

The pesticides, most of which were released in the 1990s, were designed to be more environmentally friendly than other chemicals on the market. The compounds work their way into plant tissue rather than just coating the leaves and stems, requiring fewer sprays. And though the pesticides wreak havoc on insect nervous systems, neonicotinoids do not easily cross from a mammal’s bloodstream into a mammalian brain.

In 2015, environmental health scientists at George Washington University and the National Institutes of Health published a review of human health risks from neonic pesticide exposure. Acute exposure — to high concentrations over a brief period — resulted in “low rates of adverse health effects.” Reports of chronic, low-level exposure had “suggestive but methodologically weak findings,” with a Japanese study associating neonicotinoids with memory loss.

Melissa Perry, a public health researcher at George Washington University who was involved in that review, said via email that the new study “provides further evidence that neonicotinoid pesticides are present in our daily environments. From a public health standpoint, this issue clearly needs better attention.”

The Iowa scientists tracked neonicotinoid concentrations in the local drinking supply from May to July, the seven-week span after the region’s farmers planted maize and soy crops. Every sample contained three types of neonicotinoids: clothianidin, imidacloprid and thiamethoxam.

“Everything in the watershed is connected,” LeFevre said. “This is one of many types of trace pollutants that might be present in rivers.” (The USGS released an interactive map of the nation’s water quality on Tuesday, where those inclined can track trends in common pollutants.)

Most water filtration systems target clay, dirt or other particles, as well as pathogenic contaminants like bacteria. They’re not designed to eliminate chemical pesticides — and the properties of neonicotinoids make these compounds unusually challenging to remove. Other types of pesticides stick to soil particles, which are then filtered out. But neonicotinoids can slip past sand filters because they are polar chemicals. “They dissolve very readily in water,” LeFevre said. He invoked a chemistry aphorism: “Like dissolves like.”

This proved out as the research team looked at how effectively the university’s sand filtration system and Iowa City’s different water treatment technique blocked the three neonicotinoids studied. The university’s sand filter removed 1 percent of the clothianidin, 8 percent of imidacloprid and 44 percent of thiamethoxam. By contrast, the city’s activated carbon filter blocked 100 percent of clothianidin, 94 percent of imidacloprid and 85 percent of thiamethoxam. That finding was “quite a pleasant surprise,” LeFevre said. “It’s definitely not all bad news.”

The activated carbon filters are relatively economical, he said. In fact, after the research was completed, the university installed a similar system on its campus.

Given the study's small sample size and geographical span, Perry said more comprehensive assessments of water supplies are needed "to determine how ubiquitous neonics are in water supplies in other parts of the country." The chance of that happening is unclear. "There is currently no national effort to measure to what extent neonicotinoids are making it into our bodies, be it through water or food," she noted.

Read more:

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Ben Guarino writes for The Washington Post's Speaking of Science section. Follow @bbguari

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Walmart and True Value to phase out bee-killing pesticides while Ace Hardware lags behind

Posted May. 3, 2017 / Posted by: Erin Jensen

Garden retailers nearly unanimous in rejecting bee-killing pesticides

WASHINGTON, D.C. —Today, Friends of the Earth and its allies are announcing a major advancement in their fight to protect essential pollinator populations. **Walmart (NYSE: WMT)** and **True Value** have decided to eliminate neonicotinoid pesticides, a leading driver of global bee declines, from company garden retail supply chains. This follows an ongoing campaign by Friends of the Earth and allies urging garden retailers, including True Value and Walmart, to stop selling plants treated with neonicotinoids and remove products containing them from store shelves.

In an email to Friends of the Earth, Walmart confirmed that its growers have eliminated neonics from approximately 80 percent of its garden plants. Walmart has also eliminated neonicotinoids in almost all its off-the-shelf gardening products. True Value announced (http://webiva-downton.s3.amazonaws.com/877/57/7/10216/TrueValueStatement_Letters.pdf) that it will phase out products that contain neonicotinoid pesticides by the spring of 2018 and that the company is working with its growing partners to remove neonicotinoids from its plants.

“This is a great day for bees and sends an important message that the market is listening to consumers and sound science in refusing to sell bee-killing pesticides,” said **Tiffany Finck-Haynes, Food Futures Campaigner at Friends of the Earth U.S.** “Friends of the Earth and our allies will continue to challenge Ace Hardware to eliminate these pesticides as quickly as possible to protect pollinators, people and the planet.”

Walmart and True Value join more than 110 retailers across the country, including **Home Depot (NYSE: HD)** and **Lowe's (NYSE: LOW)**, that have made firm commitments to eliminate neonicotinoids. To date, Ace Hardware is the only leading garden retailer that has not made a strong commitment to eliminate neonicotinoids on both plants and off-the-shelf products.

“Ace Hardware needs to stop dragging its feet and immediately adopt a formal public policy to eliminate neonicotinoid pesticides from its plants and products,” said **Lisa Archer, Food & Technology Program Director at Friends of the Earth U.S.** “Given that 40 percent of invertebrate pollinators are on the brink of extinction, it is more important than ever that companies like Ace Hardware and food retailers phase-out pollinator-toxic pesticides to address the bee crisis and protect our environment.”

“Polling clearly shows that American consumers want corporate retailers to commit to eliminate neonics and the vast majority of retailers are listening by saying NO to neonics on their store shelves,” said **Angus Wong, Campaign Manager at SumOfUs.** “Given clear consumer preference and the hundreds of thousands of Americans that have signed petitions to Ace Hardware and Kroger, we call on these retailers to adopt formal policies to eliminate bee-killing pesticides from all stores nationwide.”

A study (http://webiva-downton.s3.amazonaws.com/877/a1/5/8972/GardenersBewareFollowupReport_4.pdf) released by Friends of the Earth and Pesticide Research Institute in August 2016 revealed bee-killing neonicotinoid pesticides in “bee-friendly” home garden plants sold at major retailers. The latest commitments from True Value, Walmart

and Costco (http://www.foe.org/news/archives/2017-01-costco-urges-suppliers-to-limit-use-of-bee-killing-pesticides) (NYSE: COST) show that the industry has moved even further to eliminate these pesticides since the release of the report.

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Organizations that have partnered with Friends of the Earth U.S. in the campaign (http://www.foe.org/projects/food-and-technology/beeaction) to urge garden retailers phase out the use and sale of neonicotinoids include: American Bird Conservancy, Atlanta Audubon Society, Beyond Pesticides, Beyond Toxics, Center for Biological Diversity, Center for Environmental Health, Center for Food Safety, Central Maryland Beekeepers Association, CREDO Action, Ecology Center, Endangered Species Coalition, Environment New York, Environment Texas, Environmental Youth Council, Farmworker Association of Florida, Friends of the Earth Canada, Georgia Organics, GMO Inside, Green America, Maine Organic Farmers and Gardeners Association, League of Conservation Voters, Maryland Pesticide Network, Mercola.com, Natural Resources Defense Council, Northwest Center for Alternatives to Pesticides, Olympia Beekeepers Association, Organic Consumers Association, Pesticide Action Network North America, Planet Rehab, Save our Environment, Sierra Club, Smart on Pesticides Maryland, SumOfUs, Toxics Action Center, Toxic Free North Carolina, Turner Environmental Law Clinic and The Xerces Society for Invertebrate Conservation.

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