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Sewage-Based Fertilizer Safety Doubted

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It was a farm idea with a big payoff and supposedly no downside: ridding lakes and rivers of raw sewage and industrial pollution by converting it all into a free, nutrient-rich fertilizer. Then last week, a federal judge ordered the Agriculture Department to compensate a farmer whose land was poisoned by sludge from the waste treatment plant here. His cows had died by the hundreds.

The Associated Press also has learned that some of the same contaminants showed up in milk that regulators allowed a neighboring dairy farmer to market, even after some officials said they were warned about it.

In one case, according to test results provided to the AP, the level of thallium - an element once used as rat poison - found in the milk was 120 times the concentration allowed in drinking water by the Environmental Protection Agency.

The contaminated milk and the recent ruling by U.S. District Judge Anthony Alaimo raise new doubts about a 30-year government policy that encourages farmers to spread millions of tons of sewage sludge over thousands of acres each year as an alternative to commercial fertilizers.

The program is still in effect.

Alaimo ordered the government to compensate dairy farmer Andy McMurray because 1,730 acres he wanted to plant in corn and cotton to feed his herd was poisoned. The sludge contained levels of arsenic, toxic heavy metals and PCBs two to 2,500 times federal health standards.

Also, data endorsed by Agriculture and EPA officials about toxic heavy metals found in the free sludge provided by Augusta's sewage treatment plant was "unreliable, incomplete, and in some cases, fudged," Alaimo wrote.

EPA-commissioned research by the University of Georgia based on the Augusta data was included in a National Academy of Sciences report and served as a linchpin for the government's assertion that sludge didn't pose a health risk.



Farmer Andy McMurray inspects a dead patch of a field he owns, Monday, Oct. 15, 2007, in Hephzibah, Ga. McMurray says the patches are from fertilizer that contained industrial sludge given to him by the city of Augusta. A federal judge is challenging the validity of data behind the government's assertion that converting industrial pollution and raw sewage into free fertilizer for farmers poses no health risk. U.S. District Judge Anthony Alaimo last week ordered the Agriculture Department to compensate a Georgia farmer because his land was poisoned by a sewage treatment plant's sludge containing levels of arsenic, toxic heavy metals and PCBs two to 2,500 times federal health standards. His ruling raises new doubts about a 31-year policy of encouraging farmers and landscapers to spread millions of tons of sewage sludge over thousands of acres each year as a safe, nutrient-rich alternative to commercial fertilizers. (AP Photo/Rainier Ehrhardt)

In his 45-page ruling, Alaimo said that along with using the questionable data, "senior EPA officials took extraordinary steps to quash scientific dissent, and any questioning of EPA's biosolids program."

Benjamin H. Grumbles, EPA's assistant administrator for water programs, said Thursday that the judge's order underscored the significance of what he called strong national standards on sludge rather than undercutting the giveaway program.

"This unfortunate instance of poor recordkeeping and biosolids sampling techniques on the part of one plant reiterates the importance of our national biosolids program," Grumbles said in a written response to AP questions about the ruling.

About 7 million tons of biosolids - the term that waste producers came up with for sludge in 1991 - are produced each year as a byproduct from 1,650 waste water treatment plants around the nation.

Slightly more than half is used on land as fertilizer; the rest is incinerated or burned in landfills. Giving it away to farmers is cheaper than burning or burying it, and the government's policy has been to encourage the former.

Alaimo's decision was a bittersweet victory for McElmurray, whose silos and dairy barns sit mostly empty since his herd was wiped out. He contends the cows were done in by grazing on sludge-treated hay for more than a decade, beginning in 1979.

Interviewed before the ruling, McElmurray crossed his arms, scowling at the empty pastures and idle equipment where his prize-winning herds once grazed here in eastern Georgia. "This farm never would have looked like this if we hadn't used the city's sludge," he said angrily.

The city of Augusta recently settled a lawsuit with him over the dead cows for \$1.5 million. Another nearby dairy farmer, Bill Boyce, won a \$550,000 court judgment against the city on his claim that sludge was responsible for the deaths of more than 300 of his cows.

The deaths of McElmurray's and Boyce's cows in the 1990s and their suits against Augusta raised a red flag with officials at EPA, which since 1978 had been promoting the use of sludge as a fertilizer.

In 1999, the agency awarded a \$12,274 grant to the University of Georgia to study the problem. That research would result in a study published in 2003 in the *Journal of Environmental Quality* finding that the city's sludge was safe and that EPA's regulations were working.

Cities' sewage and industrial pollution had spewed untreated into lakes, rivers and oceans until 1972, when Congress passed the landmark Clean Water Act.

Back then, cleaning up waterways was the first target of the newly created EPA. The agency oversaw a multibillion-dollar grant program that Congress set up to help cities and counties build wastewater treatment plants that would filter out pollutants.

Alaimo, citing data from an environmental engineer hired by McElmurray, found that the Augusta plant was sending out hundreds of truckloads of sludge daily with dangerously high levels of cadmium, molybdenum and chlordane.

The engineer, William Hall of Atlanta, had been a project manager at seven Superfund cleanup sites and had extensive experience with toxic chemicals and heavy metals. His tests found polychlorinated biphenyls or PCBs in the Augusta sludge at levels 2,500 times higher than the EPA standard, thallium levels 25 times the legal limit, and arsenic levels twice the government's health standard.

William Miller, a University of Georgia soil scientist who co-authored the 2003 study commissioned by EPA, stands by the conclusions it drew on how much sludge had been applied to McElmurray's and Boyce's land and the composition of it.

But in a draft of the paper obtained by The Associated Press, he wrote a note by hand saying the authors should "fess up" that they didn't know those things.

"Now, we didn't really know exactly how much sludge and we didn't know the quality of sludge," Miller told the AP in an interview. Despite the discrepancies, he maintained the study was valid. "It does not include fake data," he said.

Boyce told the AP that in January 1999 he informed Georgia dairy regulators and EPA that tests he had ordered on the milk from his cows had come back showing high levels of thallium, molybdenum and cadmium.

A top state official alerted the Food and Drug Administration, but Boyce said no one ever told him to stop selling his milk or mentioned a possible threat to public health.

"We were a little startled," Boyce recalled. "They concluded that our permit was good, and we could continue to sell milk. So we did."

EPA lists thallium as a toxic heavy metal that can cause gastrointestinal irritation and nerve damage, but the agency has no standard on the metal's presence in milk. Neither does the Agriculture Department, even though it regards thallium as one of the most dangerous agents of potential bioterrorism against the nation's food supply.

State and EPA officials followed up by testing Boyce's milk, but he said they wouldn't share all their results with him or McElmurray. There is no evidence that those officials took any further action. Boyce said he decided finally to reveal the milk contamination to the AP to illuminate a broader issue.

"The real problem was the state and federal regulatory agencies did not do their jobs," he said, adding that EPA and Augusta officials "tried to say we were just a disease-infested herd. Well, that's just a bunch of bullhockey."

Charles Murphy, then head of Georgia's dairy program, said he notified FDA's Administration's office in Atlanta of Boyce's contaminated samples. "I know I talked to them some, shared some of that information with them," he recalled. "I don't think they sent anybody out."

Murphy said he was persuaded by evidence provided to him by Boyce and McElmurray to seek broader state testing of dairy cows, but there wasn't enough money.

FDA officials in Atlanta and Washington said they had no record of Murphy's account.

But over the Super Bowl weekend in 1999, two senior EPA officials, Robert Bastian and Bob Brobst, huddled with the two dairy farmers and their lawyer, Ed Hallman, to talk about sludge.

"They showed us some data," Bastian recalled. "I don't ever remember seeing any milk data."

Boyce and McElmurray insist they shared all of their data with the two EPA officials, including separate tests they ran on milk pulled from store shelves in Charleston, S.C. That milk, which came from other farms in the Southeast, suggested more widespread contamination, they said. It had heavy metals similar to those found in Boyce's milk.

There are no records that anyone became ill because of milk tainted with heavy metals or other contaminants that could have come from sludge.

On the Net:

<http://www.ag.auburn.edu/aaes/communications/highlights/fall96/cattle.htm>
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