

Study finds chemicals in biosolids SUSAN GORDON; The News Tribune

Last updated: September 18th, 2006 01:20 AM (PDT) Antidepressants and antihistamines, disinfectants and plasticizers, fire retardants and fragrances. Those are just some of the chemicals you might be applying to your lawn. In government-sponsored research published Wednesday, scientists found dozens of medicinal, industrial and household compounds in treated sewage sludge, or biosolids, that are often marketed by local governments as lawn-and-garden enhancements. "No matter what biosolid we looked at, there were some of these compounds in it," said Chad Kinney, an assistant professor of chemistry and biochemistry at Eastern Washington University. Kinney is the lead author of the report published in online editions of the scientific journal *Environmental Science & Technology*. His work was supported by the National Research Council. Six U.S. Geological Survey scientists collaborated on the research. They analyzed nine biosolid products, representing four preparation methods. The products came from seven states, including Washington, where 81 percent of biosolids are applied to land or distributed as soil amendments. Wastewater treatment and biosolid preparation methods failed to remove 25 compounds detected in all of the samples, scientists found. The composition of compounds from the nine products was "reasonably consistent" and may mirror nationwide outcomes, the scientists said. Overall, as many as 55 compounds were detected in one product, and all contained at least 30. Government regulators, health officials and Puget Sound biosolids producers said there is no immediate risk to public health. The study's authors said more research is needed to determine potential long-term effects on the environment. "We've been using biosolids for over 30 years safely," said Peggy Leonard, biosolids program manager for King County's waste treatment division, which produces GroCo. "As far as I know there is no risk." Land application of biosolids is a controversial issue in some parts of the country. Experts who have previously complained about inadequate federal scrutiny said the new research points to the need for more study and perhaps additional regulation. Thomas Burke, a professor of public health policy at Johns Hopkins University in Baltimore, said Kinney's research and other studies amount to a "wake-up call" to the U.S. Environmental Protection Agency to scrutinize the effects of chemicals in the waste stream. Current wastewater treatment methods aren't designed to get rid of low levels of chemicals like these, Burke said. "I don't think people understood before this that they might be applying pharmaceuticals and disinfectants to their front lawns." 'EXCEPTIONAL QUALITY' For decades, the EPA has promoted the benefits of biosolids because they contain the same nutrients – nitrogen and phosphorus – found in fertilizers. Regulations require biosolid producers to screen for disease-causing micro-organisms, viruses and nine metals. However, state and federal laws do not set limits or require monitoring for organic contaminants. In the Puget Sound area, products include King County's GroCo, Tacoma's TAGRO and SoundGro, Pierce County's biosolid. The EPA classifies them as "Class A exceptional quality" based on the wastewater treatment process and test results. At EPA headquarters in Washington, D.C., Rick Stevens, national biosolids coordinator, said in an e-mail message that agency officials stand by existing biosolids regulations to protect

human health and the environment. "EPA cannot assess how widespread the occurrence may be for any of the contaminants reported by Kinney," he wrote. "Any reported concentration for any of these compounds in sewage sludge is speculative at this time." In Olympia, the state Department of Ecology said regulators are concerned about the potential effects, but existing regulations won't be revised unless harm is proved. At the state Department of Health, Rob Duff, director of environmental health assessments, said the new research "shows how pervasive these chemicals are. It's another paintbrush on the big picture of how contaminants move through the environment." However, Duff, who has not read the study, said he does not believe people need to worry about exposure to chemicals in biosolids. A 'good start' Kinney's study does not identify the samples by name. However, King County waste managers know that GroCo was included. Between 2 and 5 percent of King County's treated sewer sludge is sold as GroCo. The rest is sprayed in forests and on wheat farms in Eastern Washington. "I don't think there's any call for alarm," said Leonard, the program manager who likes the results that biosolids produce on her Redmond lawn. She called Kinney's research a "good start," but said it fails to answer such key questions as whether the chemicals break down in soils and whether they pose danger. In Tacoma, 4,000 tons of TAGRO biosolids in various formulas are distributed annually. The city's Web site touts TAGRO as an EPA award-winning "family of premium soil products" that help the environment. Dan Thompson, the city's wastewater operations manager, said the issues raised by the newly published journal article are not new. "It's something we need to keep our eye on but we're not super concerned at this time. We know these constituents are here. There's no reason to believe there's a health threat," he said. MORE

SCRUTINY sought Experts who previously criticized EPA's failure to update its scientific analysis of biosolids praised the newly published research. At Cornell University's Waste Management Institute, where soil scientists for decades have raised questions about the land application of sewage sludge, institute director Ellen Harrison said the new research underscores previous calls for increased regulatory scrutiny. "I certainly would not use this material on my garden," Harrison said. "This makes clear monitoring for nine trace elements (as required by EPA) does not give me confidence this is exceptional quality and pure." Burke, the Johns Hopkins professor, was chairman of a National Research Council committee in 2002 that told EPA the science behind its biosolids regulations was out of date. Some of the chemicals identified in the study already have been proved to disrupt fish reproduction. Others may be benign, but without research, people won't know. "These are things that have biological implications and we have to understand them better," Burke said. Many of the chemicals detected in biosolids are the same ones found in previous USGS studies of contaminants in surface waters across the country. However, concentrations in biosolids were higher than found in water. The concentrations of chemicals detected in biosolids also exceeded those found in similar studies of treated wastewater, the scientists said. broader research The application of biosolids has been a hot topic for years in various parts of the country, including Southern California, Virginia and Florida. Kinney's study is believed to be the first to

measure a wide variety of organic contaminants in biosolids applied to land in the United States. Other similar studies have taken place in Europe and Canada. Kinney and his colleagues set out to determine whether biosolids are a source of soil and water contamination. They concluded that they probably are, and in the article characterize biosolids as a likely “ubiquitous” source of environmental contamination, with unknown, but possibly problematic effects on fish, wildlife and people. “This research is really kind of the starting point,” Kinney said. He and other chemists who analyzed the compounds did not evaluate the risks associated with the contaminants they found. Edward Furlong, a Denver-based USGS chemist who took part in the study, said the concentrations of chemicals detected – measured in parts per billion – don’t appear to have an immediate, severe effect on plants or animals. However, he and Kinney said their results suggest the need for more scientific research. They said experts ought to explore toxicological effects, what happens after people spread biosolids on the ground and whether contaminants are absorbed by plants, degrade, flow into streams and rivers or are picked up by winds and transported into the atmosphere. Both Kinney and Furlong were reluctant to respond to questions about how consumers should handle biosolids. “That’s out of my area of expertise,” Furlong said. Pierce county launches new product The public is invited to celebrate the Sept. 23 grand opening of a Pierce County manufacturing plant for a new pelletized product made from treated sewage sludge, or biosolids. The event is scheduled from 9 a.m. until 2 p.m. at the Chambers Creek Regional Wastewater Treatment Plant, 10311 Chambers Creek Road W., University Place. County officials are marketing the product, called SoundGro, as a fertilizer “safe for residential and commercial uses.” Other locally marketed lawn-and-garden supplements made from biosolids include GroCo, a composted mixture of King County biosolids and sawdust, and TAGRO mix, mulch and potting soil produced in Tacoma. The City of Tacoma also sprays TAGRO biosolids on about 350 acres of pasture each year in Pierce, Thurston and Kitsap counties. Susan Gordon, The News Tribune More information online The research article on biosolids was published online by Environmental Science & Technology. It can be downloaded for a fee. A link to the site can be found at www.thenewstribune.com

<<http://www.thenewstribune.com/>> . Once there, click on “Research ASAP” and scroll down to news releases for Sept. 13. The news release includes a link to purchase the article called “Survey of Organic Wastewater Contaminants in Biosolids Destined for Land Application.” Susan Gordon: [REDACTED]

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