Sewer sludge is dangerous to health, EPA says of biosolids and PFAS

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Sewer sludge from wastewater treatment plants appears to expose farmers and nearby neighbors to toxic "forever" chemicals, a new U.S. Environmental Protection Agency (EPA) draft risk assessment says.

This sludge—which is sometimes applied to farmland as fertilizer—can contain high levels of chemicals called per- and polyfluoroalkyl substances, or PFAS, the EPA concluded in its review.

Farmers who've fertilized their land with sludge for decades might have been exposed to risky levels of PFAS.

PFAS could also have made its way into farm products, impacting foods like milk or eggs, the EPA report says.

However, the EPA said its analysis does not suggest that the general food supply is impacted by sewer sludge, as sludge accounts for less than 1% of the fertilized acreage of farmland in the U.S.

"This draft assessment provides important information to help inform future actions by federal and state agencies as well as steps that wastewater systems, farmers and other stakeholders can take to protect people from PFAS exposure, while ensuring American industry keeps feeding and fueling our nation," EPA Acting Administrator Jane Nishida said in a news release.

PFAS are called "forever chemicals" because they combine carbon and fluorine molecules, one of the strongest chemical bonds possible, researchers explained. This makes PFAS removal and breakdown very difficult.

PFAS compounds have been used in consumer products since the 1940s, including fire extinguishing foam, nonstick cookware and food wrappers, researchers said.

The chemicals have been linked to a number of different health effects in humans. Studies have linked them to blunted immune response, lower infant birth weights, increased cholesterol and blood pressure, damage to

the liver, and some cancers like kidney and testicular cancer.

Last year, the EPA announced drinking water limits for six different PFAS chemicals.

Sewers send wastewater produced by households and businesses to plants where the water is purified and then sent back into the environment. A byproduct of this process is sewer sludge, also called biosolids, which has been considered safe to use as fertilizer if properly treated at the plant.

PFAS chemicals get into sewer sludge through the wastewater that arrives at the plant. It could come in industrial wastewater, or in sewage from households using consumer products treated with the chemicals, the EPA said.

The analysis says farmers and their neighbors could be at risk if 10 dry metric tons of sludge per hectare has been applied to a farm for 40 consecutive years.

The agency also found that the risk of exposure decreases where sludge has been used less frequently.

"Where smaller amounts of PFAS-contaminated biosolids have been spread, or fewer applications have been made over time, or lower concentrations of PFOA and PFOS were in the biosolids, the risk will be reduced," the EPA said in a statement.

People also could be at risk if every day they drink 32 ounces of milk, drink 1 liter of water or eat one egg produced by a farm that's been exposed long-term to PFAS-laced sludge, the EPA said in an FAQ for farmers. Fish caught or farmed from ponds or lakes near sludge-treated farmland also might pose a risk.

Burning sewer sludge at an incinerator might also pose a health hazard, but the agency concluded it didn't have enough data to quantify that risk.

"Moving forward, EPA is working to set technology-based limits on discharges from several industrial categories—including PFAS manufacturers, electro- and chrome-platers and landfills—under the agency's Effluent Limitations Guidelines program," the agency concluded.

More information: The Cleveland Clinic has more on PFAS forever chemicals.

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