

The Toxic Mix You Consume in the Name of Clean Water

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

May 30, 2022

STORY AT-A-GLANCE

- › The safety of sewage sludge, "biosolids," widely spread as fertilizer onto U.S. agricultural lands, parklands, golf courses, lawns and cemeteries, has been questioned by the U.S. Inspector General's office
- › Sewage treatment is designed to produce clean water, not clean sludge, and the cleaner the water is, the "dirtier" the sludge
- › Biosolids may contain PCBs, dioxins, pharmaceuticals, hormones, surfactants, heavy metals, plastics and disease-causing pathogens
- › Scientific studies confirm the persistence of many toxins in treated soil and their presence in many edible crops, yet high-profile PR companies, some funded by the EPA itself, spin biosolids as environmentally friendly and a form of recycling
- › Agricultural use of biosolids is economically desirable for municipalities, waste haulers and farmers who receive cheap fertilizer, but a growing number of communities are resisting the application of biosolids in their neighborhoods

This article was previously published February 23, 2019, and has been updated with new information.

The use of sewage sludge as fertilizer for your food, renamed "biosolids" by slick industry PR firms, is a growing and under-publicized threat to human health. Sewage sludge is the residue generated during the treatment of domestic waste and contains a

cocktail of hazardous substances from industry, hospitals and humans – anything that is discharged into the sewage system.

Some city sewer lines run right to the factories, allowing them to dump their waste into the city's sewage treatment plants. This saves industries a lot of money because once a regulated chemical or waste enters the sewer line, they're suddenly exempt from EPA regulation.

While many, including myself, have highlighted the serious dangers posed by wide application of sewage sludge for decades, new awareness was created by a report from the U.S. Inspector General's office (OIG) titled, "EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment."

Beware the Biosolid Scam

A video (posted above), "Biosludged," from Health Ranger/Natural News, added more concerns to the already recognized biosolid threats of heavy metals, drugs, hormones and antibiotic resistance, namely bioterrorism. Anyone could introduce deadly substances into the sewage system, such as the Ebola virus, which would, courtesy of wide biosolids application, be disseminated to harm a large amount of people.

What people put down their toilet comes "right back on their dinner plate a few weeks later," warns the video, citing the discovery of the blood thinner Warfarin, the toxic herbicide and endocrine disrupter atrazine, pesticides, fungicides, pharmaceuticals, recreational drugs, industrial drugs, chemical solvents, plasticizers and disinfectants in biosolids.

"If you wouldn't put it in your garden, don't flush it down toilet," says Mike Adams, known as the Health Ranger, who adds that biosolids are the greatest environmental crime in America that most people have never heard of. While there is a Clean Water Act and Clean Air Act, a Clean Soil Act is sorely needed says Adams.

Adams and his website are admittedly controversial, but it's indisputable that the application of massive amounts of biosolids containing nitrogen and phosphorus, combined with other nitrogen-rich fertilizers, have contributed to the growing algae blooms along U.S. coasts.

This environmental destruction harms human and animal life as well as water quality. Unfortunately, many of the southern states experience greater use of biosolids as they accept excrement exported from other cities.

Serious Questions About EPA Regulation of Biosolids

In November 2018, the U.S. Inspector General's office released a scathing indictment of how the EPA regulates – or more accurately, doesn't regulate – the biosolids industry. The OIG charged that:¹

"The controls over the land application of sewage sludge (biosolids), including laws, regulations, guidance, policies or activities, were incomplete or had weaknesses and may not fully protect human health and the environment.

The EPA consistently monitored biosolids for nine regulated pollutants. However, the agency lacked the data or risk assessment tools needed to make a determination on the safety of 352 pollutants found in biosolids. The EPA identified these pollutants in a variety of studies from 1989 through 2015.

Our analysis determined that the 352 pollutants include 61 designated as acutely hazardous, hazardous or priority pollutants in other programs. The Clean Water Act requires the EPA to review biosolids regulations at least every two years to identify additional pollutants and promulgate regulations for such pollutants."

What are some of the harmful pollutants the Inspector General found in biosolids?

"Unregulated pollutants identified include pharmaceuticals (e.g., ciprofloxacin, diphenhydramine and triclocarban); steroids and hormones (e.g., campesterol,

cholestanol and coprostanol); and flame retardants.

The agency also identified perfluoroalkyl substances (PFASs) and perfluorooctanoate (PFOA) in biosolids research ... 32 are hazardous wastes under RCRA (four of which are acutely hazardous). 35 are EPA priority pollutants. 16 are NIOSH [National Institute for Occupational Safety and Health] hazardous drugs."

Scientific Research Confirms the Dangers

Faced with the IOG's 60-page paper detailing the dangers of biosolids, the EPA had few defenses beyond, "Hazard alone does not indicate risk," and "Not all 352 pollutants found in biosolids lack data to evaluate risk. Those pollutants with sufficient data will be evaluated for risk" in the future. Is anyone relieved?

Scientific papers clearly confirm the dangers of biosolids from their persistence in the soil to their ability to enter the very crops you eat. Triclocarban, an antibiotic similar to triclosan (found in toothpaste and other consumer products) "remained years after biosolid application" says research in Environmental Science and Pollution Research.²

The antibiotics amoxicillin, ampicillin, erythromycin, oxytetracycline, sulfadimethoxine and others were detected "in sewage sludges after nearly a decade in frozen storage," says research in Science of the Total Environment.³

Perfluoroalkyl substances (PFASs), man-made chemicals the EPA admits have "adverse human health effects"⁴ and flame retardants (HFRs and PBDEs) were detected in spinach, tomatoes and corn from biosolid-treated soil, according to research in Science Direct.⁵ Pharmaceuticals were believed to enter radish tissues according to Water Research,⁶ and lettuce readily absorbed estrogens, according to a study published in Environmental Science and Pollution Research.⁷

Antibiotic Resistance Is Also a Risk From Biosolids

It should surprise no one who reads my newsletter that using sewer sludge to grow food increases the already pressing problem of antibiotic resistance. The over-prescription of antibiotics to humans and livestock has created superbugs that kill thousands each year. The combination of human waste – which contains both antibiotics, pathogens and antibiotic-resistant pathogens – with hospital and industrial waste only worsens the deadly problem.

The accumulation of a metabolite of the antibiotic sulfamethoxazole "in the solid phase is less bioavailable and is hard to be desorbed in the existence of microbial activities ... and may lead to the development of antibiotic-resistant bacteria and genes after discharge into the environment," warn researchers in Environmental Science and Pollution Research.⁸

"Ampicillin-resistant bacteria increased in [biosolid] amended soils four months after amendment and remained at least one log 10 higher 24 months later," says research in Science of the Total Environment.⁹

The ubiquity of antibiotic use in medical, veterinary and agricultural practices "has instigated great environmental concern due to the toxicological effects associated with these compounds," says research in Environmental Monitoring and Assessment.¹⁰

"Some of the effects of antibiotics include development of antibiotic-resistant bacteria, making it difficult to treat diseases, variation in natural microbial communities, and enzyme activities especially in aerobic and low and intermediate anaerobic plots due to small rates of decay."

Strong Economic Forces Are Behind Biosolids

How did the deceptive term "biosolid" replace the more accurate term toxic sewer sludge? It was coined by the Water Environment Federation, says PR Watch.¹¹

"The Water Environment Federation (WEF), the sewage sludge industry trade group that invented the Orwellian PR euphemism 'biosolids' for toxic sludge in

1991, is now 'rebranding' sewage treatment plants as 'water resource recovery facilities.'

The PR spin conveniently glosses over the toxic sewage sludge removed from the water and then heated and dumped on land for crops and grazing as 'fertilizer' or misleadingly called 'compost.' The toxins in sludge can then bioaccumulate in the meat and dairy we eat and be taken up by the food plants that feed us."

Sludge is big business and waste giant Synagro leads the industry. According to its website:¹²

"[Synagro] provide[s] solutions for all aspects of biosolids and residuals management needs, from land permitting and soil analysis by our nationwide technical services team to facilities development by our in-house engineering staff. Synagro provides a comprehensive scope of customer-focused solutions."

Selling sludge as "fertilizer" is the least expensive way for municipalities to get rid of their biosolids and make room for more, says In These Times.¹³ Corporations that sign contracts with municipalities to remove and haul the sludge are also fans of the lucrative status quo, as are farmers who appreciate inexpensive "fertilizer." But some communities are resisting.

We Don't Want Your Poop, Say Community Activists

At a hearing held in November 2018 by the Pennsylvania State Council of Farm Organizations, Darree Sicher, founder of the United Sludge Free Alliance, said one of her main concerns is that biosolids are contaminated with pharmaceuticals and flame retardants, which could lead to birth defects in livestock.¹⁴ Much of Europe incinerates rather than spreads such waste, said others at the hearing.

In January 2019, Florida state Rep. Erin Grall, R-Vero Beach, introduced a bill that would allow landowners to keep spreading imported biosolids if the landowner "can

affirmatively demonstrate that the nutrients in the biosolids will not add to nutrient loadings in the watershed," which was greeted by citizen resistance.¹⁵

Residents in Washington state have similarly spoken out.¹⁶ "There's a saying that the biosolids flow downhill — I live downhill," said James Brigham, who lives near the proposed biosolids site. Delivery of the biosolids would involve 50 trucks, it was revealed at the meeting.

In April 2022 Maine became the first state to ban agricultural use of sludge to prevent further contamination from PFAS.¹⁷ In Michigan, officials established standards for applying biosolids such as sewage sludge in 2021, and in 2022 they began shutting down dairy and beef farms when PFAS were found in the water, ground and feed.¹⁸

Gardeners Beware

Toxic sewer sludge is not just an agricultural risk, "Biosludged" points out. Biosolids are also sold as lawn and garden fertilizer to homeowners despite their dangerous components.

Both Dillo Dirt and Milorganite present themselves as eco-friendly and environmentally-sound soil treatments, yet both carry warnings of serious risks to human health in their fine print. Dillo Dirt contains toxic sludge from Austin, and Milorganite is made with toxic sludge from Milwaukee, says Mike Adams. Both should be avoided at all costs.

Unfortunately, companies do not have to disclose when biosolids are used in their compost or potting soil. Composted products can even have the USDA organic label on them, and still be loaded with toxic biosolids. Milorganite is just one example.

If you grow vegetables in your garden and want to avoid toxins contained in biosolids, your best bet is to buy organic potting soil and/or compost from a local nursery you know and trust that can guarantee no biosolids have been added.

Sources and References

- ¹ EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment Nov.15, 2018
- ² Environ Sci Pollut Res Int. 2018 Jan;25(1):222-232
- ³ Sci Total Environ. 2018 Dec 1;643:460-467
- ⁴ Basic Information on PFAS
- ⁵ Uptake of perfluoroalkyl substances and halogenated flame retardants by crop plants grown in biosolids-amended soils
- ⁶ Water Res. 2019 Apr 1;152:38-46
- ⁷ Environ Sci Pollut Res Int. 2018 Dec;25(36):36712 36723
- ⁸ Environ Sci Pollut Res Int. 2019 Feb 8
- ⁹ Sci Total Environ. 2016 Sep 15;565:200-210
- ¹⁰ Environ Monit Assess. 2016 Sep;188(9):532
- ¹¹ Sludge Industry Reveals "Resource Recovery" Spin
- ¹² Synagro
- ¹³ In These Times Jul 11, 2017
- ¹⁴ Lancaster Farming Nov. 23, 2018
- ¹⁵ TC Palm Jan. 28, 2019
- ¹⁶ Nisqually Valley News Jan. 31, 2019
- ¹⁷ c&en. Maine Bans Agrigultural Use of Sludge April 21, 2022
- ¹⁸ Progressive Farmer "Forever Chemicals and Risks to Farms" May 9, 2022