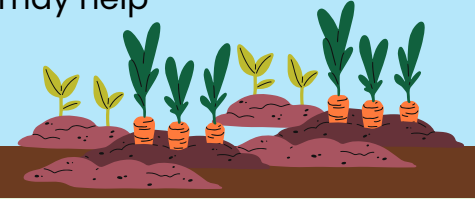


PFAS Chemicals *in Soil Amendments*

Adding organic matter is important to a healthy garden.

Organic matter like compost made from yard and food waste helps create healthy soil and keeps food waste out of landfills. And, because PFAS stick to organic particles in the soil, compost may help prevent PFAS uptake in plants.



PFAS in Compost

Compost, or decomposed organic matter like leaves and food scraps, is very important for home gardens and small-scale farms. Compost varies widely in PFAS contamination.

Sources of Contamination:

If composted raw materials contain PFAS, the finished compost will contain PFAS.



PFAS-coated paper packaging & foodware is the most significant source of compost contamination.



Make informed decisions when purchasing, ask your composter about their source materials. Also, while compostable plastic may not be a big source of PFAS contamination it may contain other hazardous chemical additives and contributes to microplastic contamination.

PFAS in Animal Byproducts

Manure, bonemeal, feathermeal, and fish emulsion are examples of animal byproducts sold as soil amendments.

Sources: PFAS Contaminated Water & Land



Fish living in contaminated water leads to PFAS in fish. Little is known about PFAS in fish emulsion, but PFAS in fish is a known problem.

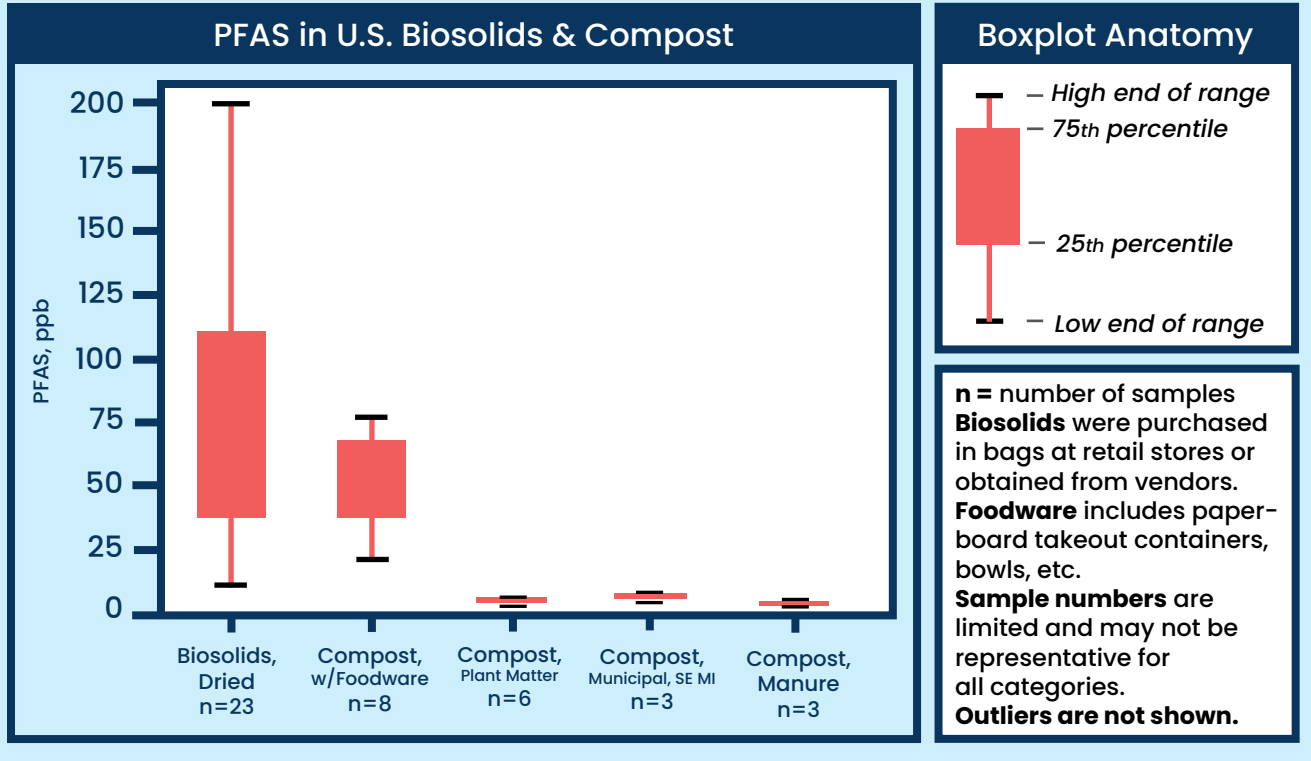


Animals eating feed grown on contaminated land may lead to PFAS in bonemeal, manure, etc.

PFAS levels were lower in manure products than in other soil amendments in the few relevant studies we found. More research is needed on PFAS in animal byproducts.

PFAS in U.S. Biosolids & Compost PFAS levels in many composts are low, as seen in the chart below, making them an excellent choice for improving soil nutrients and texture.

Ensuring compost feedstocks exclude PFAS-containing compostable containers helps keep PFAS levels low. Biosolids made from sewage sludge contain the highest levels of PFAS.



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Data sources and more info at

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There are no federal guidelines for how much PFAS can be safely present in biosolids, composts, or any other soil amendments. Facilities producing these products are not required to test for PFAS. We gathered PFAS test data on these soil amendments to help farmers and gardeners avoid using PFAS contaminated products.

PFAS in Biosolids (Sewage Sludge)

Home & Industrial wastewater (sewage) flows to a treatment plant. The treated 'biosolids' can be sold as fertilizers at garden stores. **When buying bagged fertilizer, avoid these ingredients: 'biosolids', 'residuals', 'recycled organic matter', or 'municipal waste'.**

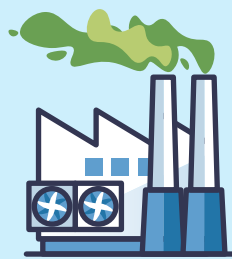


Michigan has a rule restricting PFOA & PFOS, but we have found many other PFAS, some at higher levels than even PFOS, in these products.



Biosolid fertilizers are more likely to contain PFAS chemicals at levels higher than in municipal compost.

Sources of PFAS in Biosolids:



Paper mill sludge:

An industry byproduct that when spread on farmland has caused serious PFAS contamination.



Industrial wastewater:

Factories or landfills that discharge PFAS into wastewater treatment plants.



Residential wastewater:

PFAS sources in the home that go down the drains or toilet.