



QUICK SUMMARY:

PFAS and BIOSOLIDS and SEPTAGE on NORTHEAST FARMS

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What are biosolids?

Biosolids – treated and regulated wastewater solids (sewage sludge) – are applied to many farms across North America to improve soil quality. Septage – the solids from septic systems – are recycled in a similar way. Farmers use biosolids and septage because they work for soil health and crops and are cost-effective.



What are PFAS?

PFAS is a group of manmade chemicals in widespread use since the mid-1900s. They are used in thousands of products to keep water and grease from soaking into materials. They are also in cleaners and firefighting foam used on petroleum fires. Two of the original PFAS – PFOA and PFOS – are the most common and most studied and have been phased out of production and use in North America because of concerns about human health impacts. PFAS are increasingly regulated by states, especially in New England, which has the lowest drinking water and groundwater PFAS standards in the world, in the range of 20 ppt for 5 or 6 PFAS combined, including PFOA and PFOS. PFAS risks to human health are debated and are still being researched. This has led to inconsistent regulatory actions. For comparison, Canada's limits are 200 ppt for PFOA and 600 ppt for PFOS in drinking water.

What is the risk from PFAS in biosolids and septage?

Biosolids and septage contain traces of PFAS because they come from wastewater that comes from our daily living environments, where carpets, food packaging, cosmetics, cleaners, waxes, furniture treatments, and other products contain PFAS. All tests of wastewater, biosolids, and septage have found PFAS. The possible risk from these traces would be if they leach to groundwater and cause drinking water to be contaminated above health advisory levels or if there is plant uptake from soils, which seems to happen in highly-contaminated soils. For most people – except those drinking water with hundreds to thousands of ppt PFAS – exposures to PFAS are more through using products that contain PFAS.

What is a part per trillion?

1 ppt =
1 second in 31,700 years
1 part per billion (ppb)=
1 second in 31.7 years

Research and experience about PFAS in typical modern biosolids and septage shows:

- There is no significant PFAS risk from applying, touching, ingesting, or inhaling biosolids and septage.
- Sites that have, for decades, received typical biosolids (that reflect PFAS use in our daily lives and have not been industrially impacted) have measurable levels of PFAS in the soil - levels that are somewhat higher than background PFAS soil levels. But they present minimal risk to soil health, groundwater, and plant quality.
- Limited data show no significant impacts on the quality of farm products from PFAS at typical, multi-year biosolids application sites.
- However, there are a few cases where industrially-impacted biosolids & other residuals used decades ago have caused impacts above regulatory limits resulting in harm to farm businesses.



Biosolids recycling to soils is common, backed by 45+ years of research and experience across the U. S. and Canada. PFAS is something to pay attention to. A 5-page version of this fact sheet, with data & references, is at: <https://www.nebiosolids.org/pfas-biosolids>.