

Biosolids: and concerns about PFAS

WHAT ARE PFAS?

Per and Polyfluoroalkyl substances (PFAS) are a large group of manmade fluorinated compounds that have been in commercial use since the 1940's and are abundant today. There have been concerns about PFAS appearing in biosolids as a by-product of the wide range of their use and dispersal in municipal wastewater systems.

The issue of PFAS is something that everyone should take seriously. We do, and so does our industry. Biosolids, however, are not the problem.

The real issue are the companies that purposely use PFAS in their products, such as non-stick fry pans, and waterproof clothing. It can be found even in the packaging of many fast-food products as well as cosmetics. The good news is that companies are beginning to eliminate PFAS from their manufacturing processes, but these chemicals will remain in the environment for some time.

Any PFAS that are present in biosolids are in a very small number - measured in parts per billion (ppb). A part per billion is like one soybean seed from 7000 – 50-pound bags (enough for 6,000 acres).

PFAS MANAGEMENT & ITS REGULATION ARE IN ITS EARLY STAGES.

Federally, the Canadian Food Inspection Agency (CFIA) has set an interim regulatory standard of no more than 50 ppb for PFAS in Class A fertilizer-based products. Our Council is encouraging the Ontario Government to follow suit. We are also working with the University of Guelph and the University of Toronto to study the lifecycle of PFAS on land applied soils and crops, and to determine the uptake, if any, of any of these chemicals on feedstocks. NOTE: the multiple sources of PFAS contamination are upstream from wastewater treatment places. Source control and reduction is essential to removing PFAS from the system.

EFFECTIVE REGULATION IS KEY: Municipal, Provincial, & Federal

Applied to agricultural land, biosolids improve soil health, recycle nutrients, reduce GHG emissions, sequester carbon, reduce fertilizer use, and enhance agricultural economies.

Biosolids have been safely applied on agricultural lands in Ontario over the past 40 years. When applied according to strict Ontario and Federal regulations, there have been no adverse effects to the health of humans, soils, crops, or animals.

Municipalities (who hire biosolids management companies to use this product of the wastewater system) require companies to make biosolids solely available for beneficial use. That is, land application. The application of biosolids on farmlands for beneficial use from a licenced

municipal wastewater treatment plant is a well-regulated practice. This practice is regulated under Ontario's Nutrient Management Act (NMA) or Federal Fertilizer Act. In Ontario, there are currently no regulatory standards for PFAS levels in biosolids that are applied to land. Industry, farmers, and regulators need to work together to establish these as soon as possible. This is an important goal of the Ontario Biosolids Council.

Thank you for taking the issue of PFAS seriously. It is important to convince governments to develop regulations concerning their appearance in biosolids. Together, we can ensure that biosolids remain a safe, sustainable, and valuable asset for Ontario farms. We will keep you informed with any updates. If you have questions or concerns, please contact us any time (www.ontariobiosolidscouncil.ca).

PFAS concentrations (parts per billion)

Biosolids – no more than 50 ppb

Household Dust – approx. 523 ppb

Carpets – approx. 471 ppb

Source: California Association of Sanitation Agencies

"Only a limited number of studies have measured concentrations of PFAS in biosolids and composts. Here the handful of studies have analyzed under 20 or so different materials. With that said, they suggest that while present, concentrations are more like muted tones rather than loud screams."

Sally Brown, Research Professor in the College of the Environment at the University of Washington

FREQUENTLY ASKED QUESTIONS

Are biosolids applied to food crops? If not, where are they used?

Biosolids are mainly applied on cash crops like corn, winter wheat, soybeans, canola and hay. They are not applied to fruits and vegetables.

Is Canada importing biosolids from the United States? Can these biosolids be applied as fertilizers to land?

Imports from USA are allowed under strict quality assurance programs enforced by CFIA, including that they have less than 50 ppb of PFAS.

Are biosolids the only source of PFAS on farmlands?

PFAS can be found in many products used in everyday life. On farms, they may exist in manure and other packaged chemicals, pesticides and goods. There is considerable evidence that PFAS is contained in rainwater.

How is the land application of biosolids regulated?

In Ontario, Non-Agricultural Source Materials (NASM) are controlled through the Nutrient Management Act (see [Sewage biosolids: managing urban nutrients responsibly for crop production | ontario.ca](#)). When biosolids undergo further treatment and classified as a fertilizer, they are controlled Federally through the Fertilizers Act administered by the Canadian Food Inspection Agency (CFIA) (see [CFIA-webinar-BIOSOLIDS-ppt-eng.pdf](#)). Both have very strict regulations on the handling and application of biosolids, comparative to any jurisdiction in North America.

The University of Guelph and the University of Toronto are studying the lifecycle of PFAS in biosolids when they are applied to farmland and through their possible uptake into feedstocks. When will the results of this study be published?

This extensive study is supported by the Ontario Ministry of Agriculture, Food & Agribusiness (OMAFRA). It began in 2024, testing on farmlands that had been land applied and those that have not. Results are expected in 2026.

What is the Ontario Biosolids Council and what is its role addressing the issues associated with PFAS in the land application of biosolids?

The OBC is a multi-stakeholder group of public and private sector organizations that are dedicated to the beneficial reuse of biosolids. It includes municipalities and industry that want to see the development, implementation, and monitoring of science-based regulations that ensure environmental and public safety while maintaining the option of land application for municipal wastewater treatment operations in Ontario.

Is it safe to apply biosolids to farmland?

Over the past 40 years of land application in Ontario, there has never been an adverse effect to the health of humans, animals, plants or the environment when biosolids are applied according to strict provincial and federal regulations.

How much do farmers pay for biosolids to be land applied as fertilizer? Don't they have better options?

Farmers receive over \$400/acre worth of benefit from the nitrogen, phosphorus and minerals in biosolids, in addition to a large amount of organic matter to improve soil health. Farmers neither pay nor receive payment for application of NASM. Farmers pay for fertilizers classified under the Fertilizers Act. Biosolids reuse plays an important role in carbon sequestration, minimizing impact of climate change.

Why don't municipalities just landfill biosolids, like other waste? Some waste is incinerated, why not biosolids?

There is no excess capacity at landfills or incinerators in Ontario. The cost to build these is in the multi million dollars range and would take many years to get approvals and build. More importantly, the land application of biosolids provides very effective and value nutrients to farmland and enhances soil quality.