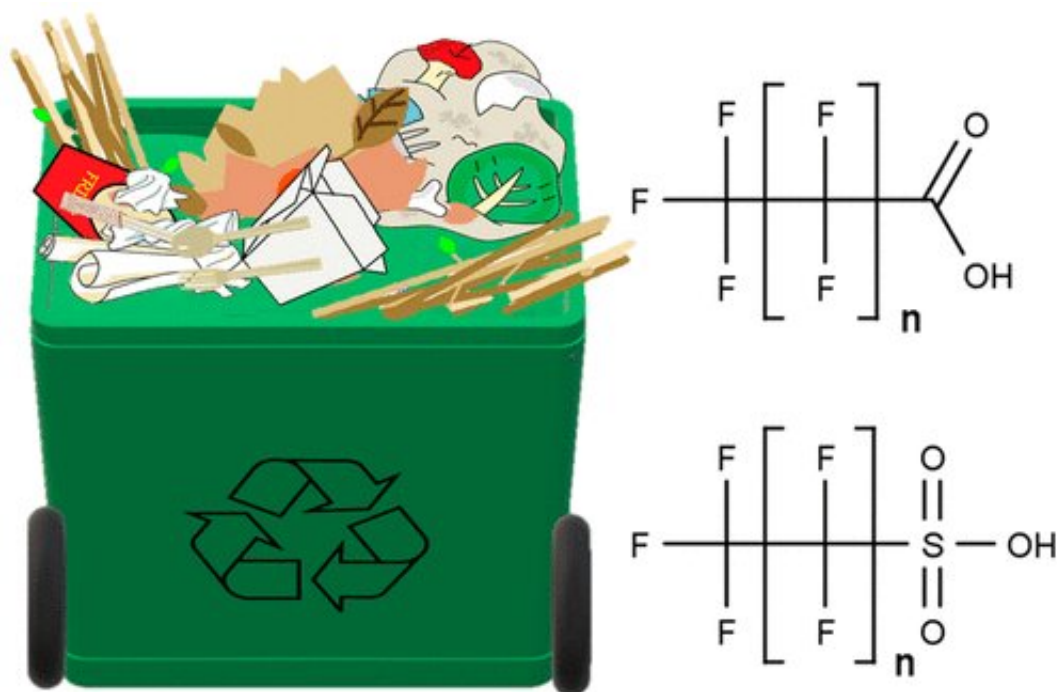


Compostable food containers could release PFAS into environment

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Credit: American Chemical Society

Compostable food containers seem like a great idea: They degrade into nutrient-rich organic matter, reducing waste and the need for chemical fertilizers. But much of this packaging relies on per- and polyfluoroalkyl substances (PFAS) to repel water and oil. Now, researchers reporting in *ACS' Environmental Science & Technology Letters* have shown that PFAS can leach from the containers into compost. However, the potential

health effects of applying this material to crops are unknown.

PFAS are widely used in manufacturing because of their flame-retardant and water- and oil-repellent properties. Two long-chain PFAS, [perfluorooctanoic acid](#) (PFOA) and perfluorooctanesulfonic acid (PFOS), have been linked to [negative health effects](#), so companies in the U.S. have voluntarily phased out their production. As a result, many manufacturers have switched to shorter-chain PFAS, whose health effects are less well known. Previous research has shown that PFAS in biosolids applied as fertilizer can migrate from soil to plants and then accumulate in humans through the [food chain](#). Because compostable [food](#) packaging is becoming increasingly popular, Linda Lee and colleagues wanted to find out how much PFAS end up in the composted material.

The researchers obtained 10 samples from five states: nine from commercial facilities and one from a backyard compost bin. The researchers extracted perfluoroalkyl acids (PFAAs), which are compounds produced by microbial degradation of PFAS during composting, and analyzed them using mass spectrometry. The samples from seven facilities that accepted compostable food packaging had higher total levels of PFAAs than the two that didn't or the one from the backyard bin, which did not contain food packaging. The researchers found PFAAs corresponding to PFOA and PFOS, which are still produced in some countries, in all of the samples, but most of the detected compounds were short-chain PFAAs.

The results from this study contributed to the passage in 2018 of the State of Washington's Healthy Food Packaging Act, which will ban the use of PFAS in paper food packaging after January 1, 2022, the researchers say.

More information: Perfluoroalkyl Acid Characterization in U.S.

Municipal Organic Solid Waste Composts, *Environmental Science & Technology Letters* (2019).

pubs.acs.org/doi/abs/10.1021/acs.estlett.9b00280

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