

Evidence of compost contamination with per- and polyfluoroalkyl substances (PFAS) from “compostable” food serviceware.

Per- and polyfluoroalkyl substances (PFAS) have been used to waterproof and greaseproof food serviceware for decades. Health concerns about these compounds have drawn attention to the potential for contamination of the food system. Finished compost ($n = 3$) made from manure and food serviceware labeled “compostable” generated at a large fair was found to contain 12 or 13 of the 28 PFAS compounds sampled for, in concentrations ranging from 1.1 to 183 $\mu\text{g}/\text{kg}$ ($\Sigma_{28}\text{PFAS}$ range = 209–455 $\mu\text{g}/\text{kg}$). Of note, perfluorooctanoic acid, a known carcinogen, was found at concentrations between 47.2 and 55.5 $\mu\text{g}/\text{kg}$. In contrast, fresh manure contained only perfluorooctanesulfonic acid at 3.7 $\mu\text{g}/\text{kg}$, and separated food waste from the fair composted with grass clippings and livestock bedding had no detectable PFAS in 2022, and $\Sigma_{28}\text{PFAS} = 9.6 \mu\text{g}/\text{kg}$ in 2019. Including compostable serviceware in compost likely contaminates the finished compost and threatens surrounding groundwater and surface waters, in addition to increasing potential crop uptake.

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