

Whole Cycle Tuesday

Takeaway

The story of PFAS in rainwater is ultimately a reminder of how interconnected our environment has become. Chemicals released into the atmosphere in one location can travel great distances and return to earth somewhere entirely different. The rain falling on a remote field today may contain compounds that originated hundreds, or even thousands of miles away.

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*"Nature does not hurry,
yet everything is
accomplished."*

— Lao Tzu

A Surprising Discovery: PFAS Found in Rain Water

It may sound surprising, but scientists around the world have discovered that PFAS, often called "forever chemicals," are now present in rainwater across much of the globe. In many cases, these compounds have been detected in locations where there is no obvious source of contamination nearby.

PFAS (per- and polyfluoroalkyl substances) are a family of synthetic chemicals used for decades in products such as non-stick cookware, waterproof fabrics, food packaging, firefighting foams, and industrial manufacturing. Their unique chemistry makes them highly resistant to heat, water, and degradation. Unfortunately, that same durability means many PFAS compounds can remain in the environment for years or even decades.

What has surprised researchers is not just where PFAS are being found, but how they are getting there.

Certain PFAS compounds can become airborne through industrial emissions, wastewater treatment activities, product use, and other pathways. Once in the atmosphere, they can travel significant distances on air currents before eventually returning to the earth through rain, snow, fog, and dust.

This reality presents a challenge for environmental professionals, municipalities, farmers, and compost producers. We often think of contamination as something that originates from a specific site, facility, or activity that can be identified and controlled. PFAS does not always behave that way. Trace amounts are being deposited onto landscapes that have no direct connection to PFAS manufacturing or use.

Forests receive it. Agricultural fields receive it. Parks receive it. This does not mean that every location is heavily contaminated. In fact, direct industrial releases, firefighting foam applications, and certain waste streams remain the most significant sources of elevated PFAS concentrations. However, the discovery of PFAS in rainwater demonstrates that background environmental exposure can occur even in places that have done nothing to create the problem.

For those working in organics recycling, composting, biosolids management, and agriculture, this finding reinforces an important point: some environmental inputs arrive from sources beyond local control. Rainfall, dust deposition, and atmospheric transport can introduce contaminants into natural and managed systems regardless of how responsibly those systems are operated.

