How Microplastics Enter the Food Chain Through Organic Fertilizers

Much of the discussion surrounding microplastics in the environment have focused on our oceans, but a new report from Germany confirms that these tiny bits of plastic are also entering the food chain through organic fertilizers. Reducing and reusing waste are key elements of a healthy ecosystem, but proper pretreatment of waste destined for organic fertilizer is essential to avoid contributing microplastics to the soil. Professor Ruth Freitag from the University of Bayreuth in Germany, one of the study's authors, identifies that pretreatment as a key to minimizing the impact of plastics on the soil.

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> *We have plants where they use a lot of precautions and there we find hardly any plastic particles, and other plants where they simply use a shredder to prepare everything and break it down – there you find a lot…One example is people use plastic bags and then put everything together in the bin, and then this is entering the waste treatment plant and ending up in the fertilisers…"*

Germany's Recycling Efforts

Germany leads the world in recycling, with 65% percent of the population using the country's color-coded bins. Almost 12 million tons of food and garden waste are composted or turned into bio-gas yearly. The researchers examined fertilizer samples from different types of waste treatment plants, finding samples from those plants converting biowaste

contained plastic particles of varying sizes and concentrations. On the other hand, agricultural energy crop digesters tested for comparison only had isolated particles, suggesting that plastics are entering fertilizers through improperly sorted compost waste. Samples tested had low levels of plastic, with a maximum of around 150 microplastic particles per kilogram found.

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Plastics Are Everywhere Now

There are six different bins to divide your recycling into in Germany. 317.7 million metric tons of waste were recycled in 2015. They are the worldwide leaders in refining personal recycling systems. Now they're finding microplastics in organic fertilizers, a scary proposition.

We know that plastics like BPA and BPS disrupt the endocrine system and cause other health issues, but we still don't know how they affect our health. We likely won't have the full picture until well after it's too late. Plastic is in our drinking water, the fish eat, and the soil we grow our food in. How soon will we be talking about how much plastic people can safely ingest before something serious occurs?

Related Reading:

- *Drinking Bottled Water Means Drinking Microplastics, According To Damning New Study*
- *Many Hand-me-down Plastic Toys Are Toxic for Kids*
- *Microplastics in Sea Salt – A Growing Concern*

Sources:

- *Organic fertilizer as a vehicle for the entry of microplastic into the environment* – Science Advances
- *Microplastics found in fertilizers being applied to*

gardens and farmland – Independent

- *Germany Gleefully Leads List of World's Top Recyclers* – New York Times