

Why Composting is the Most Important Thing You Can Do for the Environment

I recently had a friend come to me and tell me she wanted to try a new eco-friendly toothpaste. She was interested in going zero waste with her oral care while supporting small business, and she wanted my help.

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Of course, a “zero waste” toothpaste that you buy at the store is not truly zero waste. It is quite literally impossible to produce such products with no waste. After consideration, I realized that most people who are interested in the “zero waste” trend are not genuinely interested in radically reducing their consumption. If someone truly wanted to get as close to “zero waste” as possible they would simply make their own toothpaste instead of looking for the right product to buy. It seems people are really just trying to feel better about their consumption habits. It only makes sense that in our capitalistic society we instinctually gravitate towards supporting small businesses before we consider seriously reducing our consumption.

I am happy to report that my friend is very excited about making her own toothpaste and has yet again surprised me by being better than average.

When I was a young teenager, I remember the first time I read about how bad plastic straws were for the environment and the damage they do to wildlife. I was outraged, so naturally, I did what anyone would do. I hopped online and found the next product to purchase: the “zero waste” metal straws from amazon. I could drink my restaurant drinks with a reusable straw while looking down upon those who continued to use their

disposable straws. It didn't occur to me to skip the straw when I went out to eat. It didn't occur to me to eat out less. And the environmental impact of ordering my "zero waste" products from Amazon, of all places, didn't occur to me either.

I went deeper into my trendy, eco-friendly lifestyle. One day, I said to my stepfather, "I need a zero waste travel utensil kit!"

He looked at me, perplexed, and said, "Why not just... bring a set of utensils from home?" I scoffed, annoyed that he would ask such a ridiculous question – one that I did not have the answer to. It would take several years and quite a shift in lifestyle for me to realize that what I thought was a desire to eliminate waste was in fact a desire to purchase new products to make me feel better about myself rather than to actually live a zero-waste lifestyle.

I know that I am not alone in my desire to truly want to do better and to be a better steward of our Earth. So, besides reducing our consumption, which we should all be doing, what's the best thing that we as individuals can do for the environment right now? It's not using metal straws or switching to an eco-friendly toothpaste or even buying a Tesla. If you're not already doing this, the most significant thing you can do for the betterment of our environment is to compost your food waste!

If you're like most people, the first thing you might be wondering is, "What about recycling?" Composting is a form of recycling (the best kind!). But does composting food waste impact the environment as positively as household recycling? If you're already recycling, riding your bike to work, reducing your consumption, and feeling too busy to take on another daily task, is composting food waste really worth your time?

Or maybe you've been hearing about how our country's recycling is simply getting thrown away into landfills because China doesn't want our recycling anymore. Maybe you're disillusioned with recycling and don't want to start a new chore that doesn't really make a difference. Is composting our food waste really going to make that much of a difference?

To answer these questions, let's ask another question first: What if you could only do one? Hypothetically, what if you could either compost your food waste or recycle your trash, but you couldn't do both? Which would make the most difference?

Let's compare the beneficial impacts of both.

So, Just How Much Food Waste do We Generate?

Research from the American Journal of Agricultural Economics shows that the average American household throws away 31.9% (nearly 220 pounds per person) of its food a year. This adds up to a grand total of \$240 billion dollars worth of food nationwide and 50 billion pounds of food. Outside of our own kitchens, 72 billion pounds of food is thrown away at restaurants, grocery stores, farms, etc. America wastes nearly twice as much food as other developed countries, a total of 122 billion pounds of food waste each year.

It's easy to read numbers like that and think, "Wow. That's a lot of food waste." But have you ever tried to comprehend how much a billion actually is? Chances are you would have no concept of the size of a billion pounds of food waste. If you're curious, the video below breaks down how big a billion is compared to a million.

Now, we're not just talking about one billion, we're talking about 122 billion *pounds*. A pound is a lot bigger than a dime,

and 122 is a lot bigger than one.

Now that you understand that you can't really comprehend how much a billion is, how do you go about comprehending the enormity of 122 billion pounds?

The Eiffel Tower takes up about 26,240,000 million cubic feet of space. One cubic foot has the capacity to hold 43.9 pounds of food waste. That means we could conceivably stuff an Eiffel Tower-shaped pyramid with 597,722 pounds of food waste.

We generate 122 billion pounds of food waste, a year, in America alone. That's around 334,000,000 pounds of food a day. So, in one day, America can fill up 559 Eiffel Towers with food waste.

In one year, with 122 billion pounds of food waste, America could fill 204,108 Eiffel Towers full of food waste.

What Happens to All that Food Waste?

Obviously, 122 billion pounds of food waste leaves behind quite a footprint. Food production accounts for more than a quarter of global greenhouse gas emissions. In the production process alone (working the land, growing, harvesting, transporting, and packaging) 3.3 billion metric tons of carbon dioxide is released into the atmosphere.

Then there's the food that is thrown away. When food ends up in landfills, it produces greenhouse gases. If food waste was its own country, it would be the third-largest emitter of greenhouse gases in the world, behind China and the U.S, respectively.

Food waste sent to landfills produces a 50-50 gas mixture of carbon dioxide and methane. Methane is said to contribute to global warming at a rate of 25 times that of carbon dioxide,

as it is 25 times more effective at trapping solar radiation. Food scraps being transported to landfills typically travel much farther than food waste that is being composted. It's estimated that garbage trucks in the city average 3 miles per gallon. Food waste can travel up to 500 miles before reaching its final destination. When all is said and done, every pound of food thrown away generated an average of 3.8 pounds of carbon-equivalent greenhouse gas emissions.

The EPA's data estimates that in 2017 a total of 535.6 billion pounds of municipal solid waste (MSW) was generated (a lot of Eiffel towers). Out of that, 81.4 billion pounds was compostable waste. Some of this waste (54 billion pounds) was composted. The majority of what gets composted is yard waste. Food waste makes up 1% of what gets composted (5.4 billion pounds). Yet food waste was the second largest contributor to municipal solid waste behind paper trash (including cardboard). The United States composted only 2.6 million tons of waste while recycling 67 million tons of waste in 2017.

Okay, What about Recycling?

Unfortunately, only a small portion of the plastic produced each year actually gets recycled. A total of 35.4 million tons of plastic waste was generated in 2017. Only 3 million tons of this was actually recycled, while 26.8 million tons of plastic ended up in landfills, making up for nearly 20% of all MSW in landfills. The rest was combusted.

Amongst the natural resources saved from recycling glass, one ton of recycled glass prevents 700 pounds of carbon dioxide from being released into the air. Paper makes up 40% of our trash. With every ton of paper recycled, we reduce greenhouse gases by one ton of carbon equivalent. The same is true for cardboard. For each ton of cardboard recycled, around 1 ton of CO₂ emissions is saved. Aluminum, steel, and tin can be recycled endlessly. Glass can be endlessly recycled without

altering the purity or quality. Plastic and paper cannot be endlessly recycled. Paper can be recycled an average of 5 times, whereas plastic can be recycled an average of 7 times.

Carbon Sequestration

That being said, composting does more than just prevent the emissions of greenhouse gases from food rot. Composting sequesters carbon back into the environment and adds nutrients back into the ground. Whendee Silver, a UC Berkeley biogeochemist, conducted an experiment in an attempt to effectively sequester carbon. The results of the experiment show that a one-time application of a half-inch layer of compost on rangeland can boost the soil's carbon storage for up to 30 years. After spreading compost over the rangeland, there has been a significant increase in native perennial plants and birdlife. Healthy soil is an essential part of growing food. In order to have healthy soil, we have to give back to the earth.

Vermont is one of the few states in the US that has composting laws in place. If all 600,000+ people in Vermont were to participate in the composting program and each person generates 50kg (around 110 pounds) of compost, Vermont would generate around 31,350 tons of compost. Each ton of compost generated sequesters somewhere between 0.01- 1.00 ton of carbon dioxide from the soil. In Vermont alone, 15,675 tons of carbon could be sequestered (assuming each ton of compost sequesters 0.05 tons of carbon dioxide). If everyone in Vermont composted instead of using fertilizer, an additional 3,135 tons of carbon dioxide could be saved for a total of 18,810 tons of CO₂. On a national scale, we could sequester more than a billion pounds of carbon into the soil if everyone composted. The amount of carbon sequestered in the soil depends on how well the soil is cared for, as well as what is in the compost. Soil that is well cared for does not have as much potential to sequester carbon as soil that has been

neglected. Compost that is higher in nutrients also has a higher potential for carbon sequestration.

So, What's Better? Composting or Recycling?

The EPA has a chart that breaks down how much CO₂ equivalent we saved based on how much of each material was recycled or composted. When you break this down based on the EPA's numbers, recycling paper and paper board result in the most CO₂ saved (3.35 million tons of CO₂ saved per ton of paper recycled), with metals in a close second (3.31 million tons), and composting food scraps in third place (2.68 million tons).

However, when you combine all recycled materials and compare it to composting food waste, things are almost tied. Recycling saves 2.71 million tons of CO₂ equivalent for each ton of material recycled. Composting saved 2.68 million tons of CO₂ equivalent for every ton of food waste composted.

So according to the EPA, it would look like composting and recycling have about the same environmental impact, depending on how much recycling and food waste one has to dispose of. In other words, from what the EPA is saying, if you could only do one, you would want to choose based on which weighed more: your recyclables or your food waste.

But this isn't quite accurate. The EPA only looks at the CO₂ saved by not throwing waste into a landfill. The EPA does account for the carbon sequestered into the ground when you use compost. Each ton of compost has the ability to sequester on average 0.5 tons of carbon. This puts the total amount of CO₂ equivalent saved in composting above the amount of CO₂ equivalent saved in recycling.

The next time you throw a piece of single-use plastic into the recycling bin for the environment, remember that you don't

really know where that plastic is going and if it'll even be recycled. Composting is easy. You can do it at home in your yard, and you will know exactly where that compost is going and what it's doing for the environment. Or you can compost with a local pick up or drop off service and find out what they're doing with their compost. If you're interested in how you can get started with composting, check out this article.

The purpose of this article is not to discourage recycling in favor of composting. We should all be growing as much of our own food as we can, composting, recycling, and reducing our consumption.

Sources:

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