Making Composting a Simple Reality

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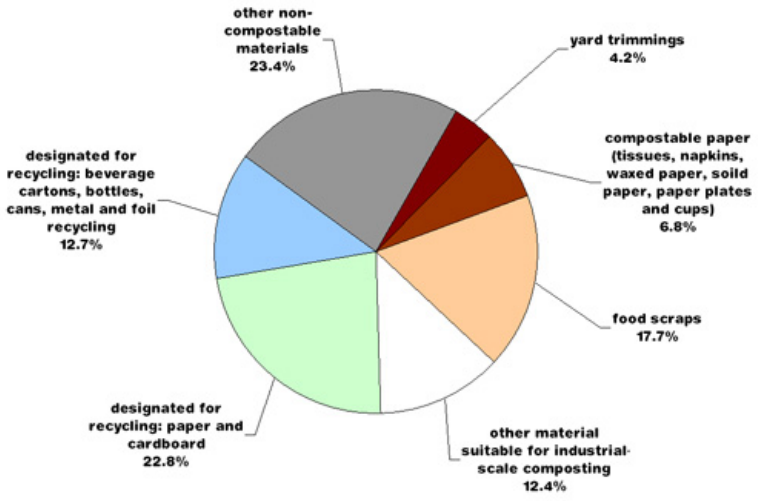
"Forty percent of the food produced in the United States goes into landfills instead of our mouths, according to a report from Natural Resources Defense Council (NRDC). That massive quantity of food, which amounts to 20 pounds per person per month, uses 25 percent of our country's freshwater supplies" (Main). Composting has long been thought of as something farmers do to make their increase the productivity of their land. Composting is using leftover organic materials and returning them to the earth to create a richer soil. By composting can keep the landfills to a minimum and enrich the environment we live in. While this was once a process that was mainly for those with farms and large gardens, it is now a solution possible for every consumer.

With a population of 314 million in the United States alone, we are one of the largest food consumers in the world with an average daily caloric intake of 3,770 (DiSanto). The United States also has one of the largest, if not the largest, amount of food waste in the world. Much of it is wasted thru spoilage and food that is simply thrown out. In the United States alone, an estimated $165 billion worth of food is thrown away each year (Gunders). With this amount of waste we are adding to our landfills at an astonishing rate and the impact to our environment is overwhelming. Through education and implementation we can learn to compost our organic materials that would normally go into landfills. By composting we are also enriching our land and replenishing the nutrients we take from it when food is grown. Because this isn't the process most of the population is used to, it may seem extreme, but several cities across the United States have proven that is not only possible, but a much easier process than expected. Composting from homes into yards and gardens or collection by waste management will reduce the methane produced by our

landfills and shrink the amount of plastic used for trash bags. Composting will also replenish our soil of much needed nutrients like carbon and nitrogen, and hopefully help consumers realize the daily waste of uneaten food.

What exactly is composting and how does it work? Composting is the natural breakdown of organic matter back into the soil. As long as there is air, moisture, and organic matter available, composting will occur. By very little work from the consumer, the end product can occur sooner, and a quicker benefit to the triple bottom line will happen. Many cities across the United States have already begun composting as part of their regular waste management programs. For those consumers who don't have this service accessible, compost bins are available for purchase at most hardware and homebuilders stores. Compost bins are relatively inexpensive and can be found in sizes to fit any need or space available.



Composting can start with something as small as mulching when mowing the lawn and letting the grass clippings be absorbed back into the yard. When grass clippings are left to breakdown when mowing, they restore much needed nitrogen into the soil, and by restoring the nitrogen the grass will naturally become greener, therefore eliminating the need for other forms of fertilizer and harmful chemicals. Composting the clippings instead of bagging when mowing also eliminates the need for bags, which lessen the amount taken to landfills.

Composting food waste from home to be used for a garden takes slightly more preparation, but little work once it is set up, takes little work. Composting requires adequate space, whether in a bin or in a composting pile, where it has room to breathe and heat up to at least 90 degrees so breakdown will occur. The compost will need approximately 40% greens, which includes grass clippings or food scraps and 60% browns or leaves. Greens, which are a good source of nitrogen, can be made up of grass clippings, coffee grounds, fruit, vegetables, eggshells, grains, and blood meal. Browns are a good source of carbon, and include such items as leaves, straw, newspaper, cardboard, and sawdust. Herbivore manure can also be used as a source of greens as long as the animals are not diseased. Composting can be set up in either sunny or shaded areas since the heat that occurs is caused by the chemicals created within the pile rather than from the sun. Watering the compost will keep the process moving, but it is necessary to keep it damp not wet, or harmful bacteria will begin to grow. Turning the compost will maintain the breakdown in a consistent manner and keep bacteria at a minimum, which keeps odor down. The compost is ready to be used when it is dark brown and resembles mulch.

Compost can be used anywhere there is a need, whether it is outdoors or as potting soil for indoor plants. By placing the compost after it has broken down onto a garden or ground surrounding greenery, nitrogen is put back into the soil, which enriches the earth by replenishing the nitrogen lost thru previous growth.

Cities all across the United States have included composting as part of their waste management programs. By collecting curbside food waste they are lowering their landfill contributions, reducing harmful emissions into the air, and lowering their potential for water pollution. As of February 2012 over 100 cities in the United States offered curbside food waste collection for residents. San Francisco for example, has been recycling for fifteen years, but only made it mandatory three years ago. The city's goal is to be at zero waste by the year 2020. "Ultimately, San Francisco and other composting cities have found that it is cheaper to compost than dump garbage, because it extends the life of landfills by saving space." (Daigneau). Portland, another major city that collects curbside food waste acknowledges that start up costs are not cheap, but that most of the expense is in educating residents about composting and the benefits. Thru education we increase the likelihood of participation in any program, especially one that requires added effort from those involved. Of course once a collection and composting program is up and running, not only is there an environmental benefit, but there is also a financial benefit. Since compost takes the place of chemical fertilizers replacing healthy nourishment to soil, many farms and vineyards purchase the finished product from participating cities. In other words, cities are lowering their amount of waste going into landfills, less harmful emissions are going into the air

from the methane in landfills, less oil is being used for garbage bags for food waste, cities are turning a profit by selling compost to farmers, and farmers are able to avoid harmful chemicals by purchasing organic compost. Every part of the triple bottom line is affected.

"We bury 1.2 million tons of food waste in landfills every year at a cost of nearly $80 per ton. That waste can be used as fertilizer or converted to energy at a much lower price. That's good for the environment and for taxpayers," stated Mayor Bloomberg in his State of the City address in February of 2013. (Navarro) Mayor Bloomberg then implemented the plan to begin residential and commercial composting to be collected by the city. Though several American cities had already started collecting and composting, it was thought that New York City was too large and too densely populated to accommodate. New York City started with voluntary residential collection and been pleasantly surprised with the amount of participation. The city is planning to build a composting factory where the materials will be turned into electricity. Mayor Bloomberg said that the goal is that by 2015 composting will be a regular part of collection and those who don't participate will be fined by the city just as they are in they don't participate in recycling. By composting, New York City alone expects to process about 100,000 pounds of organic materials per year, which is approximately ten per cent of the city's waste. "Food waste and other organic materials account for almost a third of all residential trash, and the city could save about $100 million a year by diverting it from landfills," said Ron Gonen, the deputy sanitation commissioner for recycling and sustainability for New York City. Every part of the triple bottom line is affected by this way of composting.

Any city can begin curbside collection for composting. Of course composting at citywide level requires more than just the backyard pile and regular turning. There are many questions that need to be asked before a new idea goes into action, but with some education, this is not only a viable option, but also a valuable one.

- **Who will collect?** A city needs to first to establish who will collect food waste; does the city outsource their current waste management collection, and if so, is there a need to hire a company. Will a composting plant also need to be found or will the city build one to fit their need?
- **What will be collected?** Will food waste include meats and bones? Will paper products be acceptable since they may currently be part of recycling, or will collection only include items that can't be recycled due to food residue?
- **How often will there be collection?** One of the biggest concerns is regarding storage of food waste before it's collected. How long will the waste need to be stored before it's collected? Since space inside a home is usually a concern, how will a large amount of waste stored to keep bacteria and smell to a minimum if collection is only once a week?
- **How will citywide collection and composting be funded?** Any time a new project is put into action, there can be large startup costs. These costs can range from education of city officials and residents, to equipment for removal and processing, to salaries for employees. Where will the initial budget come from?
- **What kinds or code requirements need to be met before starting?** Anytime waste management is involved, there are city health codes to be met since there is a

potential for health risks. What are the possible risks and what can be done to minimize them and meet health codes already in place?

- **What is the benefit?** Will the cost and labor involved benefit the effort?

Each of these questions will have different answers depending on the city's size, financial standing, and accessible resources, although some are easier to answer than others. By looking to cities that already have a food waste collection in place, it may streamline the process of getting a system up and running.

For example, the materials that can be collected can be provided for residents easily. Collecting food waste will also provide a savings benefit to residents since less trash bags will be used. And because paper products with food residue cannot be included in recycling, this can be a great additional benefit.

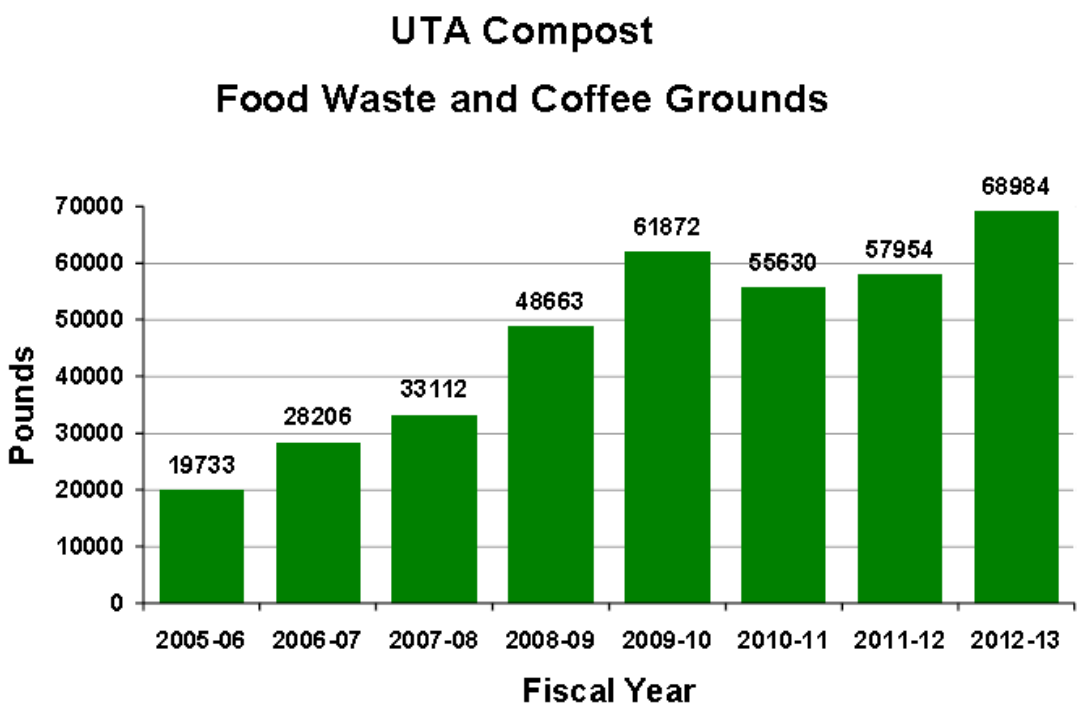
Storage can be another concern for residents. Offering black sealable containers to homeowners may solve this issue for many. Of course, every resident will have different needs for size based on the available space in their home and the number of people in their family, but it's likely that many will find a way to make a container work if it is provided to them in advance. This was a concern when cities started mandatory recycling. By following the same format of providing bins for storage, residents are more likely to participate.

Another area that may have an easier answer than expected is in funding. There are an incredible amount of grants and federal funding available to both residents and cities that make it easier to put processes in place to become more sustainable. We all benefit from reducing our waste and harmful emissions into the environment, so the government

rewards those who are taking action to make it happen. "The Federal Resources for Sustainable Rural Communities guide provides key information on funding and technical assistance opportunities available from agencies, as well as examples of how rural communities across the country have put these programs into action. Each agency offers different ways of approaching infrastructure planning and construction, economic development, pollution cleanup, and other issues that are part of achieving sustainable communities" (www.sustainablecommunities.gov)

Collecting food waste and composting cities provide a savings and lessen the negative impact on the environment. Food waste is a major cause of our excessive use of landfills. By providing an option for residents to collect food waste and compost cities will benefit and affect every aspect of the triple bottom line.

The University of Texas in Arlington began a program to compost in 2004. "The compost program was recognized with three awards: The Recycling Alliance of Texas awarded UT Arlington and the City of Arlington with a Leadership Award, the Greater DFW Recycling Alliance awarded UT Arlington and the City of Arlington with their Leadership Award, and the North Texas Corporate Recycling Alliance awarded UT Arlington and the City of Arlington with their Environmental Vision Award. The President's Sustainability Committee is formed and combines with the President's Recycling Advisory Committee." (Arlington)



The University of Texas is leading the way and showing that not only is composting feasible, but necessary. They have educated their students and faculty and gained momentum in their movement to become a leader in sustainability every year.

Composting can be done in the yard, the garden, or collected and processed to be sold. Over 100 cities nationwide, public schools, and major universities are providing a solution for food waste. Composting can lessen negative impact on the environment, provide a natural source for replenishing our soil, and eliminate the need for chemical fertilizers. We will decrease the use of landfills substantially and create jobs. As the University of Texas, San Francisco, and New York City have shown, composting is possible at every level. By providing education, we can become more sustainable and affect every aspect of the triple bottom line. Start mulching instead of bagging when you mow, purchase a compost bin for your home, tell your neighbors how easy it is, and call your city officials to start a movement for citywide collection and composting.

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