

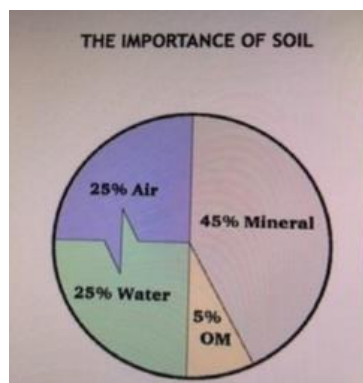


## Composting from Top to Bottom

When our Conservation Committee was asked to do a presentation for the Garden Club, we had already been discussing home composting methods and the good reasons for recycling organic wastes. Then an article on municipal composting became a catalyst. Exactly how much did we know about composting? The result was a slide presentation that incorporated the information in this blog. We did indeed learn about composting from the top down, so to speak.

One of us used her skills and the resources of the library to do some in-depth research on the various methods of home composting. She also surveyed our Club Members for their experiences with composting. The other took to the internet where, as you know, one article leads to another, and municipal led to global in one direction and to community in the other.

We discovered the International Solid Waste Association, which has just published a first report on a Global Assessment of Municipal Organic Waste and Recycling in partnership with the European Compost Network. ISWA says “Soils are an endangered ecosystem globally and there is currently great interest in reducing erosion and improving the organic matter content of soils.” Their Soils Project wants to quantify the benefit of organic matter in compost when applied to soils and are taking the lead in providing “a robust evidence base to link organic waste management and soil enhancement/improvement.



Most organic waste collects in urban areas because of population density. Cities have been handling it with more or less success ever since the Industrial Revolution moved people off farms and into factories. At first, much waste was recycled because it could be used: grease and fats made candles or soap, bones became glue, horse manure became fertilizer and food scraps were collected by the poor and sold to farmers for fertilizer or animal food. Eventually, there was more waste than could be put to use.



It was dumped into the nearest river, ocean or landfill. Water quality deteriorated and the large piles of rotting garbage created foul-smelling, disease-ridden eyesores. The landfills are also climate poison because decomposing organics are starved of oxygen and methane is released. Methane is the main component of natural gas and a greenhouse gas whose warming effects are 84 times greater than CO<sub>2</sub> in the short run.

In 1895 George Waring, a former military officer and sanitary engineer became the sanitation commissioner of New York City. He put sanitation workers into white suits and made households and businesses separate food waste from ashes. He diverted horse manure for use as fertilizer. Food waste was turned into soap, grease or compost or sent to pig farms in New Jersey. Some ash was made into cinder blocks, some expanded the footprint of Rikers Island. Waring himself died of yellow fever in 1898, but his sorting program continued until the First World War when shortages of labor and materials caused its end. In that era of cholera, typhoid and yellow fever, social reformer and



journalist Jacob Riis wrote, "Colonel Waring's broom . . . saved more lives than a squad of doctors."

Today, nations around the world are encouraging organic waste management in their large urban areas

as a means of reducing waste and reclaiming resources. In the European Union, the European Compost Network has 84 member organizations. Seoul, South Korea recycles ninety-five percent of its food waste. Closer to home we have the Solid Waste Association of North America. San Francisco has had mandatory organics recycling since 2009 and diverts eighty percent of food waste. They call it REcology. Seattle is recycling sixty percent. They process their organics in an anaerobic plant that recaptures the methane to use as the compressed natural gas that powers their sanitation trucks. Budgeting issues have kept all but five percent of New York City's organic waste going to landfills. (The exact opposite of Seoul, South Korea.) New York pays dearly to ship its organic waste as far away as South Carolina.

Because of this haphazard approach, another level of involvement is becoming important. Queens Botanical Garden recently announced that some of the funding for



community composting has been restored to the city budget. The Smiling Hogs Head Ranch, with its solar panel and three bin compost system and the Moore Jackson Community Garden, with its smaller trash can-size bins are a part of that network. The Institute for Local Self Reliance has put together some guiding Principles of Community Composting:

- Resources Recovered. Waste is reduced, food scraps are diverted from landfills and composted.
- Locally Based and Closed Loop. Organic materials are a community asset and are recycled into compost within the same community.
- Organic Materials are returned to soils. Compost enhances local soils, supports local food production and conserves natural ecology by improving soil structure while maintaining pre-existing nutrients, carbon and soil microorganisms.
- Community-scaled and Diverse. Composting infrastructure is diverse, distributed and sustainable. Systems are scaled to meet the needs of a self-defined community.
- Community engaged, empowered and educated. Compost programming engages and educates the community in food systems thinking, resource stewardship and community sustainability, while providing solutions that empower individuals, businesses and institutions to capture organic waste and retain it as a community resource.
- Community Supported. Aligns with community goals (such as Healthy Soils and Healthy People) and is supported by the community it serves. The reverse is also true: a community composting program supports community social, economic and environmental well-being.

These can be volunteer or small business ventures. An example of the latter is a group in Austin, TX who call themselves Compost Pedallers. It's a subscription food scraps collection service. Residential users get a 5-gallon collection bin and are serviced once a week by leaving the bin out for collection. The bin is weighed, and a clean bin is left in its place. The collectors ride bicycles to make their rounds. The scraps go to a CompHost, which can be anything from a 3-acre commercial farm to someone who is harvesting worms in their garage. These 30 CompHosts are referred to by the Pedallers as their 'Organic Grid'. To let the subscribers know the impact their use of the service has on the community, each member can track her own data, or see the overall impact of the service. They monitor how much scrapple is kept out of landfills, how much compost is



produced, how much money is saved by growers, how many gallons of diesel fuel are saved, how many tons of methane are kept out of the atmosphere and how many calories have been burned by the pedallers on their rounds. In suburban areas, those who are concerned about organic waste but don't have the space or the capacity to compost can often join or form volunteer groups.

Home composting is the apt description of using food scraps and organic refuse like leaves and grass clippings in home composting systems to create the compost that is often called gardener's gold. With good reason. Compost keeps soil moist, protects it from temperature change and makes it easier for soils to receive and retain both air and water. It adds essential nutrients to the soil. It can be used a variety of ways: as a seed-starting medium, soil enhancer or side dressing. Best of all, by improving the soil we improve the health of our plants. Healthy plants help clean our air, conserve our soil and make our communities healthier places to live.

Fall is the perfect time to start composting. There is plenty of organic material that can be the basis of excellent compost. Before material goes into any compost system, it can be broken down into two groups: **Brown**—which is dried material like fall leaves, dried grass cuttings and other yard waste and **Green**—fresh material like grass cuttings, and food scraps like veggie and fruit peelings, eggshells and coffee grounds. There are many “recipes” for compost using these two groups. Some say 1-part Green to 3 parts Brown,



some say half and half. There is no absolute, so gardeners are able to tweak the system they use so it works for them. Whatever goes into the compost will decompose more quickly in smaller pieces. Some things should NOT be composted. Avoid any material that's been treated with chemicals or pesticides, large sticks

and branches or too many pine needles or cones. Meat, bones and fats should be put in the trash, not the compost system.

Home compost systems are a matter of choices. How much space do you have? How will it look? How much maintenance is required? How long will the process take?



- Probably the simplest method is to bury it in a hole in fallow ground and cover it with at least 8" of soil.
- Pile: If you can tolerate looking at a mound and are in no rush to have finished compost, this is fine.
- Lasagne pile: 12' wide. Repeat layers 6" green, 2-3" manure, 1/8" good soil and ashes
- Holding Unit: A circle of wire fencing is a simple and inexpensive holding bin. Another is to drill holes in the sides and bottom of a plastic trash bin and put it on a pallet. Put scraps in, water occasionally.
- Turning Unit: A series of 3 or more bins that allows wastes to be turned on a regular schedule. This is best for a large volume of waste and produces high quality compost.
- Rotating barrels: These allow frequent turning that speeds decomposition.
- African Keyhole Garden: A holding bin placed in the center of a raised garden. As it rains the compost at the bottom fertilizes the garden.

These are by no means all the systems that exist. Look into Hot Composting, in which a small batch is made by putting everything in at once and turning it very often. Or, if you want to enlarge existing beds or create a new one on the edge or the middle of a grass area, you may try sheet composting.

Whatever compost system you use, remember that there is a secret ingredient to enhance the process. Roxanne Zimmer ([rz378@cornell.edu](mailto:rz378@cornell.edu)) in her presentation on Composting at Harborfields Library last month, said that the FBI is involved with the process: Fungi, Bacteria and Invertebrates—think worms. In well-planned and maintained composting systems, they aid in the break-down of organic materials and they are an important indicator of overall soil health when they are exported from the compost pile to the garden soil it enriches.

Our garden club member survey garnered 51 answers. Of those, 23 do compost and 18 do not. Of those who do compost, 20 include kitchen waste (vegetable and fruit cuttings, eggshells, coffee grounds) and 3 do not. Of those who do compost, 10 use holding bins, 7 use rotating units and 7 use piles. Many people use more than one of those options. It was common to use a kitchen counter container with a cover to collect waste which was then added to an outdoor bin or pile when it was full. People were mindful of the need to keep the compost turned somewhat to ensure that oxygen was part of the process. Some who no longer compost, shred fall leaves and spread them on their





beds—a choice highlighted by Ms. Zimmer as well because it returns carbon to the soil. What we found is that our members have been using their own, or nursery-supplied compost to enrich the soil of their gardens for years.

We'll leave you with the positive vote of one of our members who told us that when she adds compost to her beds, "I just have to take my gloves off, because I love to feel what it does to the soil."

