A Comparative Study of Composting Methods

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The Statler Commissary collects food waste from all Campus Dining & Shops (CDS) locations and produces the soil amendment right on site:

- The Commissary receives 400-600 buckets of food waste from dining halls each week.
- Once received, the food waste is sorted and placed in decomposer machines that heat, turn, and break down the waste less than a day.

Worm Power
1609 Jenks Rd, Avon, NY 14414
Worm Power produces and sells an organic soil amendment derived from the castings of Eisenia fetida (Red Wiggler) worms.

- The resulting compost is layered on top of continuous flow beds containing millions of Red Wiggler worms. It is then consumed, and passes through the digestive tracts of the worms to be harvested from the bottom of the pile after six weeks.

Abstract
In the same sense that the soil in the ground feeds us, the soil needs to be fed. One process of feeding the soil is known as composting, a controlled biological process of decomposing organic matter. Composting also provides a promising alternative to the current global waste management system. By recycling organic waste and food scraps, we reduce the amount of pollutants released from landfills into the biosphere. In this project we will explore, observe, and compare the approach taken to composting by three different institutions: University at Buffalo, Worm Power, and Root Down Farm. We will investigate each establishment’s composting facility, focusing on the sustainability of their approach, and examine the relation between the approach of each establishment and its scope and setting. Our research will allow us to understand the benefits and disadvantages of composting systems implemented at these different institutions.

Conclusion
By visiting Root Down Farm and the Statler Commissary, and researching Worm Power, we explored the benefits and disadvantages of each institution’s composting methods, and the extent to which that method is sustainable.

Root Down Farm
5850 Shimerville Rd,
Clarence Center, NY 14032
Root Down Farm’s entire compost process takes two full years:

- Each compost pile is turned at least twice a year and worms have been naturally found in such piles.
- Compost piles comprise a mixture of kitchen scraps, vegetables, horse manure and pine shavings.
- Finished compost is tilled and planted to grow vegetables in a high tunnel. Whatever is left is spread on the U-pick fields.

Worm Power is provided feedstock by Coyne Farms, a fifth-generation Dairy Farm, to power their operation. Research done by Cornell University has shown that using Worm Power’s vermicompost as the sole source of fertilizer for organic vegetable seedlings is overall successful. Vermicompost provides a source of plant nutrients and sustains plant life. As a result, Worm Power sells its products nation-wide to business companies and home gardeners alike.

Root Down Farm is a small vegetable farm with about 300 CSA members. For their size and types of crops, they do not produce much waste, and thus the compost produced is small. Farmer Steve, co-owner of Root Down Farm acknowledged that their compost, in terms of scope and process, could be improved. They use horse manure only because it is easy to access, though it is not ideal for compost. Despite this, they use the compost to grow food and to use on their U-pick fields. In the future, Root Down Farm would like to advance their operation using concrete pads and walls.

University at Buffalo first started composting by using piles similar to the method used by Root Down Farm. However, it was soon clear that this method was not suitable due to an unpleasant smell and the attraction of geese. By using decomposing machines, Campus Dining and Shops (CDS) has found a way to break down the accumulated food waste in a fast and efficient manner. In order to complete the cycle of returning food to the earth, CDS hopes to buy new technology that will convert the food waste directly into bioenergy.

Sources:
Interview with Tim Ludlum, Manager of Statler Commissary (Personal Interview), (2014, March 21).
Root Down Farm’s entire compost process takes two full years

Bags of compost produced by UB

3-gallon buckets are used to transport compostable waste.

The decomposer machines used to turn waste into compost

The resulting compost is layered on top of continuous flow beds containing millions of Red Wiggler worms. It is then consumed, and passes through the digestive tracts of the worms to be harvested from the bottom of the pile after six weeks.

Worm castings

The end product is a 85-87% decomposed soil amendment that is given to community organizations or anyone who wants it.

A high tunnel

Finished compost is spread onto the U-pick field using a tractor.