



Composting: It's Not a Waste

Cora Hougard, Sayward Gohman-Kramer, Quinten Tyra, Abigail Hodges
Jess Olsen, Tim Sobotka



Abstract:

Methane gas, a major greenhouse gas emitted by landfills in the process of anaerobic decomposition that contributes to global warming, can be reduced by diverting organic material from landfills to compost, where aerobic decomposition creates fertile soil. The interest in composting is growing; according to preliminary data collected by Compost Crusaders over the course of 2015, the amount of waste diversion increased by 229%, 49,000 lbs to 98,075 lbs, from their current clients. Partnering with Compost Crusader, ten restaurants in Milwaukee will participate in the Compost Initiative: an experiment studying the relationship between composting, education, and inconvenience. We hypothesize that the amount of compost will increase when composting is convenient and education is provided. Once all composting supplies and services are provided to the restaurants, composting habits will be recorded for one week. In the following week, the restaurants will be provided with education on the benefits of composting, and the composting habits will be recorded again. The data collected will provide information to assist in the creation of policy to effectively implement commercial composting in Milwaukee. By implementing a city-wide policy in Milwaukee, it will help in meeting the mayor's goal of 40% landfill diversion by 2020.



- = Compost Facilities
- ▲ = Implemented composting policies
- ▲ = intentions for future composting policies

Current Results:

Unfortunately, there were not enough participants for the actual experiment. However, we were able to collect extant data from Compost Crusaders. This data shows the current amount of waste that was diverted to compost by multiple restaurants in the year 2015. Compost Crusader supplied our research team with their 2015 data on compost collections on a monthly basis. There was a total of 245,576 pounds of compost that was diverted from 17 restaurants in 2015.

Figure 1 shows the composting behavior of two restaurants that began their composting regimen in April, 2015. The data shows that their overall composting behavior is slightly erratic. However, in Figure 2, we can see the average composting behavior begin to become more stable over time. Each restaurant diverts on average 2,000lbs of waste to composting every month. The total amount of compost diverted was 761,331 pounds in 2015. Milwaukee mayor, Tom Barrett, hopes to have the city of Milwaukee up to 40% compost diversion by the year 2020 in order to create a higher sustainability for the county.

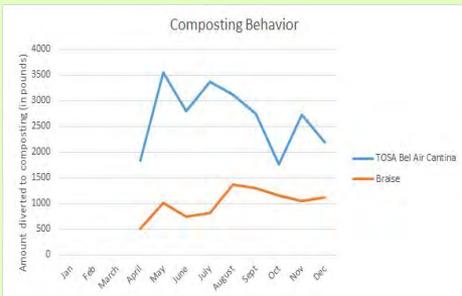


Figure 1. Composting behavior of two independently owned restaurants in Milwaukee, WI from its inception in April, 2015. Data shows the amount of waste diverted to composting (in pounds) from the month of April, 2015 to December, 2015.

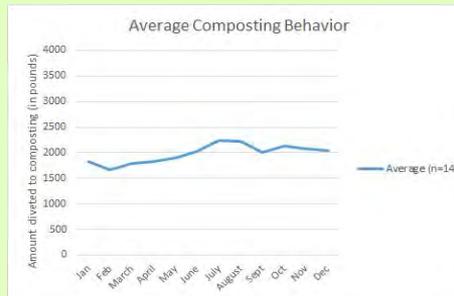


Figure 2. Average composting behavior of 14 independently owned restaurants from January to December of 2015. Data shows the amount of waste diverted to composting (in pounds) each month.

Conclusion:

Although we were unable to conduct the study due to lack of interest, we were able to analyze the data previously collected by Compost Crusaders. We found that composting habits can be erratic and unstable in the early months of a composting regimen. However overtime, restaurants evolve to a more steady and reliable composting habit. Commercial composting becomes more consistent and can be a reliable landfill diversion method. In the future, a commercial composting policy would be a reliable way for the county of Milwaukee to divert landfill waste and to reach the mayor's goal of 40% landfill diversion by 2020.

Experimental Method:

- 1 - Recruited ten non-chain restaurants located in Milwaukee that do not already compost.
 - Compost materials provided by Compost Crusaders.
- Bins
- a. Compostable bags 
 - b. Compost pick up 
 - c. Restaurants compost for 7 days
- 3 - Record the amount of compost collected By Compost Crusaders in the week
 - 4 - On Day 8, restaurants are educated about benefits of composting.
 - 5 - Compost for another 7 days
 - 6 - Record the amount of compost collected by Compost Crusaders in the week
 - 7 - Analyze the data collected between the two weeks of composting.
 - 8 - Use data to reinforce key points of a composting/ waste management policy for Milwaukee county.

References:

Reducing the Impact of Wasted Food by Feeding the Soil and Composting. (2016, March 31). Retrieved April 19, 2016

Smith, M. A., & Friend, D. (n.d.). The Science of Composting. Retrieved April 19, 2016

Tashjian, M. 2015. Compost Crusaders. Milwaukee, WI

Yantis, J. (15, November 20). [Compost Map]. Retrieved April 19, 2016