HIGHLAND HIGH SCHOOL COMMUNITY COMPOST BIN

Community Compost Teaching and Demonstration Site

ABSTRACT

A viable model for community composting that can help individuals, groups and corporate bodies interested in composting find something that they can replicate to help influence change from the existing dangerous food waste management systems into a model that has environmental, social, health, and economic benefits.

ADEYEMI RICH ADENIYI

JULY 2023

PROBLEM STATEMENT

Society can achieve many benefits by redirecting organic waste from landfills to compost systems. Composting organic materials mitigates climate change by lowering CO2 and CH4 emissions, reduces strain on landfills, and prevents water contamination from toxic leachate produced by the anaerobic breakdown of organic material. When applied, compost enhances plant growth, reduces storm water runoff and soil erosion, and improves soil fertility, structure, and H20 retention.

Despite the multiple benefits that composting brings, the practice is severely underutilized. According to the EPA, just 8.5% of municipal solid waste is composted, even though more than 50% of municipal waste in the U.S is compostable: 23% paper and cardboard, 22% food, and 12% yard trimmings. In New Mexico, low population density makes compost collection services economically unfeasible in most parts of the state, and even in the larger cities where these services are available, price barriers exclude low-income households. At the same time, home composting is obstructed by lack of space, concerns about pests and wildlife, and need for education about how to compost.

PROPOSED SOLUTION

To make composting more accessible, the Bernalillo County Extension Master Composters (BCEMC) with the aid of Master Composter volunteers and personnel maintains compost bins at 4 locations across the county. The purpose of the bins is for instruction and demonstrations as well as to provide composting capability at the locations. However, with increasing interest in composting and composting education by residents of Albuquerque, it is noteworthy to state that these four composting bins are limited in meeting the demands of residents. Hence, the need to build more bins around the city.

The proposed solution, therefore, is to build on the mission of BCEMC and by extension promote the model of community composting system whereby people don’t have to compost at their homes or pay for city-wide service, but instead drop food scraps off at managed sites in their own neighborhoods. It is a system that is simple, easy and cheap

to build because it is built using mostly free and locally available materials. In addition, it is designed to be a duplicable system.

By the end of the project, I intend to offer a viable, proven model for community composting that can help individuals, groups and corporate bodies interested in composting find something that they can replicate, which in turn will help influence gradual change from the existing dangerous food waste management systems into a model that has environmental, social, health, and economic benefits.

PURPOSE OF THE PROJECT

The 3 bay compost bin will be used for instruction as well as demonstration of community composting for staff, and students of Highland High school as well as members of the immediate community where the school is located who are interested in learning composting.

The bin will also serve to provide composting capability for the school thereby reducing the amount of food waste they send to the landfill.

MODE OF OPERATION

1. **Compost Collection Bin**

   Two compost collection bins are placed in the East and West sides of the school for collecting compostable materials such as food scraps, grass clippings, paper, cartons etc. Students, staff and parents are encouraged to drop off their domestic organic wastes into these bins. In addition, unconsumed and left over food from the school's cafeteria are separated from non-food waste and dumped in the compost collection bin thereby diverting the potentially-wasted food from the general school trash stream.

2. **3 Bay Compost Bin**

   Three bay compost bin setup is used to compost the materials collected from all the compost collection points position in different locations in the school. It is a hot composting setup designed from cheap, local and easily accessible materials to

compost organic wastes, creating nutrient rich, organic products that will be used as soil amendments in the school's garden.

3. **Waste Station**

In order to create and entrench a culture of "Going Green" among staff, students and parents of Highland High School, waste stations will be incorporated during sporting events that include bins labeled for composting. The two collections bins will be stationed at strategic locations on the sport's field during games for food waste collection. Trained volunteers among students shall be stationed at these stations to explain proper disposal to those coming to dispose of their waste. This will serve the dual purpose of reduction in the amount of waste going to local landfills and easy access to compost materials to be used in the compost bins.

BENEFITS OF COMPOSTING

There are a number of benefits to compost that not everyone is aware of. Some examples are listed below:

- Organic waste in landfills generates, methane, a potent greenhouse gas. Composting keeps methane-generating organic wastes out of landfills. Hence, methane emissions are significantly reduced. According to the US Composting Council (USCC), every metric dry ton of food that goes into a landfill may generate 0.25 metric tons of methane in the first 120 days. Composting this food waste reduces emissions by the equivalent of up to 6 metric tons of CO2
- Compost increase the capacity of soil to hold moisture thereby reducing or totally eliminating the need for chemical fertilizers
- Compost reduces/eliminates the need for herbicide because it also act as mulch to the soil.
- Good composting practices that balance the carbon to nitrogen ration and provide adequate aeration and moisture will minimize greenhouse gas emissions.
- Compost can be used to remediate soils contaminated by hazardous waste in a cost effective manner.

- Compost enhances water retention in soils.
- Compost provides carbon sequestration. Compost that is incorporated into the soil will continue to break down. A portion of that composted organic matter may become part of the soil's long term carbon pool.

FOR MORE COMPOSTING RESOURCES

Visit: www.nmcomposters.org