CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1009

Project Title
What Types of Variables Help Compost Break Down Faster?

Abstract

Objectives/Goals
The objective of this experiment was to see which types of variables help food waste compost the fastest. My goal was to reduce the amount of food waste that would normally go into the landfill.

Methods/Materials
Materials
1.Wood 2.Food waste 3.Wood chips 4.Saw dust 5.Shredded office paper 6.Straw 7.Compost thermometer 8.Water 9.Shovel 10.Tarp

Methods
1. Build the bins 2. Chop up food scraps 3. Layer 6 inches of variables and 2 inches of food waste in each bin until full 4. Take the temperature in the side, middle, and bottom of the compost 5. Turn the piles every 3 days 6. Check the moisture in each bin everyday 7. If compost is dry, water it until it#s moist 8. Check the temperature, water, and turn the compost then cover all of the bins with a tarp 9. Repeat this every day or every other day for two months or until one of the compost piles have fully broken down.

Results
Bins number 1 and 4 barely broken down. In bin number 3 the food broke down but the variables did not. Bin number 2 stayed the warmest and both food and variables broke down the fastest.

Conclusions/Discussion
My conclusion was that my hypothesis was wrong - bin number 2 was the winner. The paper, sawdust, and food scraps all broke down a lot more than the other bins of compost. I believe that it was because of the weather that bin number 2 was more successful. The temperatures in my compost were very low because I live in Prunedale where it is very cold and we hardly get any sun. When I was doing this experiment I noticed that I had to stop turning the compost for a couple of days because when I didn#t turn it, it heats up and when I did turn it, it let out all the heat. Then it has to start heating all over again. It was cool to see what things I needed to change with each bin. It was like they each had a different personality.
I learned that with an 8 cubic compost bin, in 2 months I could remove 70 pounds of food waste and 10 pounds of paper out of the landfill. If every school had a 6 x 6 compost bin, in 2 months we could remove 630 pounds of food waste and 90 pounds of paper. In a year all of that would turn into 3,780 pounds of food waste and 540 pounds of paper! Imagine if every school in our district did that!

Summary Statement
My purpose was to find the best variable to speed up and simplify the composting process so people would want to use their own food scraps to reduce the amount of waste going into the landfills.

Help Received
My dad built the 4 bins; My dad helped turn the composting piles