CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
22156

Project Title
Compost Corrosion

Abstract

Objectives/Goals
This experiment was conducted by hypothesizing that iron in a sterile environment corroded ap decreased in mass more with the addition of compost. My objective was to determine if wrought irt would rust more quickly in an environment with compost than in an environment without compost.

Methods/Materials
Eight wrought iron pieces were weighed for their masses in grams. 250mL of distilled water was added to eight sterilized jars. 125 mLl of Orchard Supply Hardware Organic Compost was added to four of the jars. The iron pieces in the sterile environment were labled the "A" group. The iron pieces in the compostx environment were labled the "B" group. The eight pieces of wrought iron were placed in the eight jars and were left to sit for twelve days while corrosion occurred. The iron pieces were removed from the jars and then the masses of the iron pieces were weighed again.

Results
The mass of each iron piece increased in seven of the eight results. The four pieces of iron in the sterile environment all increased in mass. Three of the four iron pieces in the compost environment increased in mass. The addition of compost to the sterile environment caused the "B" iron pieces to increase more in mass than the "A" pieces. The average mass increase of the "A" group was 0.175 grams. However, tt average increase of the "B" iron pieces was 0.35 grams. The independent variable was the environment in which the iron was placed. The dependent variable was the mass after the wrought iron pieces corroded.

Conclusions/Discussion
My hypothesis was that if compost was added to a sterile environment containing a piece of iron, thex more corrosion would occur, causing the iron's mass to decrease. My results did not support p hypothesis in seven of the eight results. From knowledge collected, corrosion is supposed to decreasx iron's weight. The iron was measured for its mass, and the mass increased in seven of the eight tests. The idea of compost affecting iron's mass in a sterilized environment can be concluded from this experiment. There was some corrosion on a couple of the iron pieces before the experiment was performed. They wex buffed with steel wool, but it is possible that all of the corrosion didn't wear of before commencing the experiment. This may have affected the mass of the iron pieces. The shape and thickness of each piecx may have affected the final masses, too.

Summary Statement
The project is about how compost affects the amount of corrosion collected on iron.

Help Received
My mother helped me sterlize the jars and iron and helped me cut the letters for the backboard.