Abstract

Project Title: What Biodegradable Products are Best for the Enviorment?
Project ID:237

Abstract

A brief explanation of your project. Enables judges to receive a base understanding of your project and work.

Did you know that the plastic, in landfills, affects many people and things in today's society. Like aquamarine animals including turtles and whales, over 13 million pieces of plastic end up in oceans each year. This contributes to the death of a million seabirds and 4600 turtles every year in the U.S.The reason why the experiment was chosen by the experimenter was to find out what biodegradable materials were best for the environment. This was chosen because modern technology has improved the creation of plastic bags. Biodegradable plastics have been developed to improve the environment, but some are more efficient than others. Biodegradable plastics are made of all-natural materials that can be broken down by microorganisms in the soil. The purpose of this project is to use a respirometer to see if corn scraps/or bagasse and wheat straw or /recycled bioplastics, will degrade the fastest in landfill conditions.

During the experimenter's research, the experimenter figured out that microorganisms biodegrade biodegradable

plastics. When they biodegrade they take in carbon, nitrogen, oxygen, phosphorus, sulfur, calcium, magnesium, and several metals and release carbon dioxide, water, and heat. This concludes that the more carbon, water, and heat the microorganism release the easier the material biodegrades. So to summarize the experimenter is using the knowledge obtained from research to measure the co2 rate of biodegradable materials. Which consist of corn, bagasse and wheat, and recycled bioplastics.

The results of the experiment concluded with the material made of recycled bioplastics releasing a mean of 61.6 ppm co2. While the material made of a mixture with wheat and bagasse released a mean of 157.2 ppm of co2. And lastly, the material made of corn scraps released a mean of 261.2 ppm of co2. To conclude the materials made of corn scraps released the most amount of carbon which answers the experimenter's question. The corn scraps are the easiest out of the three to biodegrade. In the end, the experiment concluded that corn scraps are the best natural material to produce biodegradable plastics because they are fast and easy for microorganisms to break down.

Items to Include:

Introduction: Why did you do this project and why is it important? How will this affect people and why is it needed. Inspire the reader to continue learning more about your research and read your report.

Problem Statement and Engineering Goal / Hypothesis: What is the problem you were solving and what was your engineering goal or hypothesis.

Procedures: How did you solve the problem and or test your hypothesis? Don't go into details, provide a broad, conceptual view of what you did. For engineering, what was your design criteria.

Results: What was the outcome? Use your data and numbers to describe your result.

Conclusion: Was your hypothesis supported or the engineering goal met?