CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)

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Project Number

38351

Project Title

Environmental Effects on the Biodegradability of the Plastic Bags, Paper Bags, and Newspapers

Abstract

Objectives/Goals

My project is to learn how fast things decompose in different environmental conditions. I did this project because grocery stores are now charging for plastic bags to encourage people to recycle and reuse. The materials I used are paper bags, plastic bags (biodegradable and non biodegradable) and newspapers. I left my materials under the sun, under the pile of mulch, pile of leaves, salt water and tap water for 1 year.

Methods/Materials

Materials:
10 biodegradable plastic bags (use two different brands)
10 non biodegradable plastic bags (use two different brands)
3 nets (plastic or cotton)
Wire or string
6 wooden post
5 brown bags
5 pages newspapers
Mulch Pile (consisting of grass clippings and leaves)
Tap Water
Leaf Pile
10 plastic container (2 liters each)
Saltwater (15% by volume)

Results

After one year, the paper bags I left under the sun almost completely decomposed followed by the newspaper. The newspaper and papers bags under the mulch pile and leave pile also showed different levels of decomposition. The newspaper and plastic bags became mushy but I did not observe a lot of decomposition either inside the tap water or sea water. The plastic bags even the biodegradable plastic bags did not decompose at all.

Conclusions/Discussion

Therefore, I conclude that after one year, the paper bags showed the most decomposition followed by the newspapers. The biodegradable and regular plastic bags did not decompose at all in different environment.

Summary Statement

I learned that all plastic will not decompose after 1 year in different environment and so it is important that we recycle and reuse to protect our environment.

Help Received

N/A