Name(s)	Project Number
Bethany Blake	**J1001**

Project Title

Our Sticky Situation: Household Dispersants and the Gulf Oil Spill

Abstract

Objectives/Goals

The purpose of my project was to compare various household cleaning agents used as dispersants to break up an artificial oil slick on seawater to find the most effective and environmentally friendly solution.

Methods/Materials

I tested six different dispersants: lavender oil, orange oil, organic lavender dish soap, Dawn dish soap, ammonia, and Lysol disinfectant bleach spray. Before I could test any of the dispersants I had to prepare the oil slick samples in a way that was similar to the oil slicks in the Gulf. First, I filled a 502.75 ml glass with 473.18 ml of ocean water. Then, I released the 10 ml of used motor oil from the syringe into the glass at rim level. After that, I stirred all twelve (mini) oil slicks in a circular motion 10 times to agitate, just as weather disturbs the waters of the Gulf.

Results

Overall, the essential oil extracts were useless. All they did was clump with the motor oil because they lacked cleaning agents. The organic lavender soap dispersed at the same rate as the ammonia and Lysol bleach spray. However, the lavender soap would be a better choice because it is not nearly as harmful to an ocean environment as ammonia and bleach, which is why the latter products are unrealistic solutions.

Conclusions/Discussion

Our best dispersant was the Dawn dish soap because it worked better than the lavender soap and better than the harsher cleaning agents. Dawn soap was the best solution overall because it dispersed the oil throughout the water column in the glass, and seemed to do so without harming the things around it.

Summary Statement

This project is a search for a commonly available and environmentally friendly, yet effective dispersant that could be used to clean up an oil slick.

Help Received

Mom helped buy seawater, motor oil and supplies. Dad helped organize the workspace, assemble and print some of the slides and the circle graph. My dentist explained the meaning of "null hypothesis."