CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
Alexa M. Montegna

Project Number
31486

Project Title
Boom or Bust! Creating an Organic Boom to Absorb Oil on Water Surfaces

Abstract

Objectives/Goals
Objective: My engineering project goal was to create an organic, environmentally friendly sorbent containment boom, which could serve as a realistic alternative to chemical sorbents that may be toxic to the environment.

Methods/Materials
Materials:
Boom Construction(per boom):
organic cotton tubing
organic cotton balls
organic sphagnum peat moss
empty 500 ml plastic water bottle
4 rubber bands
ruler
Boom Testing(per test):
20 gallon fish tank
10 gallons water
16 oz 10W-30 weight motor oil
digital kitchen scale

Methodology:
Construct a tubular floating device lined with the organic cotton and sphagnum peat moss.
Weigh boom.
Test boom by placing it in the fish tank filled with the 10 gallons of water and 16 ounces of motor oil.
Leave for 24 hours.
Reweigh boom and remeasure water and oil amounts.
Record data and repeat two more times.

Results
Results: My boom abosrbed nearly 100% percent of the oil and only a small percentage of water.

Conclusions/Discussion
Conclusion: This type of boom could serve as an environmentally friendly replacement to chemcial sorbants in fighting oil spills in the ocean.

Summary Statement
My goal was to create an organic sorbant boom that could provide an environmentally friendly option to help remove oil from water surfaces.

Help Received
Father provided technical assistance in creating the boom. Mother helped proofread written materials. Brother helped with computer generated graphs.

Preliminary