CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J0725

Project Title
The Absorption of Pollutants in Different Soil Types

Abstract

Objectives/Goals
The purpose of this experiment was to determine which type of soil is the most absorbant of which kind of pollutants. The information gained from this experiment will benefit farmers, garderers and botanists who deal with soil pollution problems, to better understand the effects of absorbancy with different porosities of soil and with different viscosities of pollutants.

Methods/Materials
I placed 200g of each type of soil and 100ml of each type of pollutant in separate cups.I waited till the soil was completely wet and then I put it on a filter for 15 minutes. I measured the remaining pollutant for understanding how much was unaborbed. Material :Plastic filter, 500ml graduated cylinder, triple-beam balance, notebook, organized working area, stop watch, writing material (pen/pencil), 54 clear plastic cups, 900ml of soap oil, 900ml of olive oil, 900ml of gasoline, 1800g of sand, 1800g of clay,1800g of silt-clay loam.

Results
Sand, the most porous soil, had absorbed the greatest amount of pollutants. Silt Clay Loam, the 2nd most porous soil, had absorbed the 2nd greatest amount of pollutants. Clay, the least porous soil, had absorbed the least amount of pollutant.Sand absorbed gasoline (the least viscous)the most. It absorbed olive oil (the second least viscous)the 2nd-most.It absorbed oil soap (the most viscous) the least.Silt Clay Loam and Clay absorbed oil soap the most, followed by olive oil and gasoline.

Conclusions/Discussion
The most porous soil absorbs the greatest amount of pollutants. More viscous pollutants get absorbed more than less viscous pollutants.In the future, I would refrain from using volatile fluids like gasoline, beacuse it evaporates and hence may create erroneous results.I would also increase the time that I allowed for absorption.

Summary Statement
My project determines which type of soil is most absorbant for which kind of pollutant.

Help Received
Used lab equipment in school.