CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
22309

Project Title
Does Soil Absorbency Affect Erosion?

Abstract

Objectives/Goals
The purpose of this experiment is to show how the different saturation rates of soil samples effect erosion. I will test this by showing which of four soil samples can retain the most water and then in the second part of the experiment show which soil has the least erosion.I will measure the volume of water that the soil samples allow to pass through. I believe that the soil that retains the most moisture will have the least permeability and will erode the least.I believe that the soil with sand will have the most absorbency.

Methods/Materials
Fill four globes with equal amounts of different soil samples:soil with gravel, clay, loam and soil with sand.Globes have cloth on the bottom. Pour 8 oz. of water into each globe,measure how much water each can hold before run-off.Repeat.Fill four waterproof wooden troughs that have fine mesh screen attached to one end,with equal amounts of the four soil samples.Beakers are at the end of each trough.Pour 8 oz. of water into each trough. Note which has the most erosion and run-off. Measure the run-off. Repeat.

Results
In the first test I showed how much water a soil sample can hold before becoming saturated. The soil with gravel held 7 oz. in both trials. The soil with gravel averaged 6.5 oz.,clay soil averaged 5.75 oz.,and loam held the least at 3.5oz. Next, when I measured the permeability of the soil samples: soil with gravel had the least run-off, followed by soil with sand, loam and the clay soil.

Conclusions/Discussion
The absorbency of the soil does make a difference in erosion. Since soils contain particles of different sizes, the space between the particles determines how much water a soil sample can hold.The more water retained, the less run-off. I thought the sandy soil would hold the most water, but it was the soil with gravel that held the most and had the least run-off.

Summary Statement
To show how the different saturation rates of soil samples effect erosion and that the soil that holds the most moisture will have the least erosion.

Help Received
My mother showed me how to do graphs on the computer.