CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
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Project Number
29237

Project Title
Don't Waste Water, Conserve It!

Abstract

Objectives/Goals
The purpose of this project was to see if different mixtures of hardpan and sand could be used to help with California water conservation.
Hardpan and sand are some of the most commonly found soil types within California. Hardpan is clay like substance that has the tendency to repel water. In other words, it does not make a good catalyst for water absorption. Sand consists of loosely packed granular rocks. Due to this, sand is a great catalyst for water absorption, but has poor water retention properties.
By mixing hardpan and sand in various mixtures I hoped to attain a mixture that would allow for water absorption with maximum water retention. In this way, agriculture could use this mixture while cultivating their crops. The goal being to reduce the amount of water needed for proper crop growth. At the same time helping California to conserve water.

Methods/Materials
One (1) shovel; One (1) metal screen mesh ;Five (5) 500 ml measuring cups;
Five (5) 1000 ml measuring cups; Five (5) 250 ml measuring cups; Hardpan; Sand;
One (1) Casio digital camera; One (1) pitcher; One (1) timer; One (1) separate 250 ml measuring cup to mix the soils with.

Results
Based on the results the 75% hardpan/25% sand mixture yielded the the best water retention while allow water absorption.

Conclusions/Discussion
The experiment proved the hypothesis was correct; it stated that 25% sand 75% hardpan was going to work the best for water absorption with maximum water retention. Farming consumes the largest amount of water within the San Joaquin valley and having enough water for crops is an ongoing problem. By finding better soil mixtures may help to reduce the amount of water consumed and increase the amount of crops that can be more effecienlty grown.

Summary Statement
The focus of my project was to discover which soil mixtures between hardpan and sand would have the most water retention with maximum water absorption.

Help Received
Dad helped conducting the experiment by assisting with the pouring of the water into the measuring cups and excavation of soil.

Preliminary