CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
S2007

Project Title
Gray Water: Saving Our Wetlands, Our Watershed, and Our World

Abstract

Objectives/Goals
To prove that gray water does not harm plants and is safe for home use in landscape and vegetable gardens. To open people's eyes to gray water as a solution to California's water shortage.

Methods/Materials
Use two types of gray water with one natural laundry detergent, one conventional laundry detergent, and a control of tap water to water cabbage plants, broccoli plants, and radish seeds. I measured the growth of the plants and observed the plants' responses to the different types of gray water. I compared the overall results.

Results
I had two sets of results so far because I had two periods of measured growth. In the first period for the cabbage plants, the conventional detergent grew more and in the second period, the natural detergent grew more. I had the same opposite results for the broccoli plants however in the first period, it was the natural detergent that grew more and in the second period, the convetional detergent grew more. In the first period the seeds didn't produce valid results, so I honed in on one plant for the second period: the radish. I found that the conventional degergent grew the most but the leaves of the sprout watered with the natural detergent had bigger, fuller, and greener leaves. The natural one was also more resistant to intense sun rays.

Conclusions/Discussion
I found that neither the conventional detergent nor the green detergent affected the plants growth much. However, compared to the tap water, which had a steady growth, the detergents caused the plants to have enormous growth spurts. The chemicals and nitrates in the detergents didn't seem to have an effect on the overall look of the plant. Anyone can use gray water simply by collecting water from the washing machine before the water drains in a bucked and water their plants. Slums in third world countries could also water their plants with the abundant gray water in the U.S. Also, farmers could use gray water to water their fields. There could be water recycling places where people are paid money to recycle their water. This would open up new jobs as well as help save fresh water.

Summary Statement
To demonstrate that gray water does not negatively affect plants.

Help Received
Mother/Father were the financial support and gave good advice, Mrs. Reynosa helped organize the project with me