CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
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Project Number
J2307

Project Title
Are Eco-Friendly Laundry Detergents Really Eco-Friendly?

Abstract

Objectives/Goals
"If plants are watered with eco-friendly laundry detergents and regular laundry detergents then the plants being watered with eco-friendly laundry detergents will grow normally and the plants being watered with regular laundry detergents will weaken or die." The problem was "Can you water your lawn or plants with discharge water from a washing machine to conserve water?"

Methods/Materials
The experimental procedure began with planting three plants each in five planters using the same soil. Four solutions of water and laundry detergent were mixed, two regular (Tide and All) and two eco-friendly (7th Generation and Ecos). The fifth solution was the control solution, water. The plants were watered regularly with the solutions. Each week, the plants' sizes were measured and their conditions noted. The soils were tested for pH, Nitrogen, Potassium, and Phosphorus levels.

Results
For 7th Generation, two plants grew and one plant died. For All Detergent, all plants grew. For Tide, one plant died while two plants grew. For Ecos, two plants died and one plant grew. For water, one plant died and two grew.

Conclusions/Discussion
The hypothesis for this project was proven wrong because the plants watered with eco-friendly laundry detergents did not grow better than the plants watered with regular laundry detergents. Ecos, an eco-friendly detergent, caused the most damage to the plants. Tide, a regular detergent and 7th Generation, an eco-friendly detergent, did not seem to affect the plants negatively or positively. All, a regular detergent, seemed to benefit the plants' growth and performed similarly to the control solution, water.

Summary Statement
This project tests whether or not the discharge water from a washing machine that contains eco-friendly laundry detergent can be used to water grass and plants in order to conserve and reuse water.

Help Received
Mom helped plan experiment, type report, setup board; Dad helped plant plants, take measurements, test soil; Science teacher helped discuss ideas, review work, and provide suggestions.