



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Christina Y. Cho	<b>Project Number</b> <b>S1105</b>
<b>Project Title</b> Fresh Water Galore: Greywater Recycling II	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The United States and many other countries are currently experiencing a fresh water shortage crisis. A major portion of this shortage crisis comes from excess use of water in homes. Most of the water used in homes comes from watering gardens and lawns. My objective was to find out whether greywater and green detergent are really efficient for plants. Another goal was to find out if it is effective to use food particles as fertilizer.</p> <p><b>Methods/Materials</b> To test the efficiency of green detergent, I used grey water with conventional and green detergents. Furthermore, I constructed a home-made recycling system to recycle the sink water. I tested tap water, detergent sink water, recycled detergent sink water, green detergent sink water, and recycled green detergent sink water on ten plants on each type of water for 50 days.</p> <p><b>Results</b> My results came out that the recycled green detergent sink water and recycled detergent sink water were very similar to the plants given tap water. Green Detergent Sink Water and Detergent sink water was also very similar to the results of the other two types. The detergent sink water plants placed last in average height compared to the other plants.</p> <p><b>Conclusions/Discussion</b> My hypothesis was correct and greywater, recycled and non-recycled, with green detergent is efficient for plant growth. The conventional detergent sink water plants were surprisingly up to par with the other plants. Although the toxicity is higher in the conventional detergent, I concluded that both types of detergent can be used to water plants, but with the green detergent having a more progressive impact on the growth of plants. Economically, it would take 1.3 months for a household to profit if greywater recycling and homemade filtration system are used.</p>	
<b>Summary Statement</b> I experimented with detergents to determine the environmental and economic efficiency of green detergents and greywater on plants.	
<b>Help Received</b> Father helped drill holes.	