| Name(s) | Project Number |
|---|---|
| **Glenn M.A. Billman** | **J1104** |

**Project Title**

**Reduce, Reuse, Recycle: Gray Water**

**Abstract**

**Objectives/Goals**

The goal of my project was to see what common gray water can be used safely on plants so people can reduce the amount of water wasted.

**Methods/Materials**

I did this by watering twenty plants equally with five to twenty ml. of water (depending on their dryness) using five different waters (tap[the control], water from boiling spaghetti, water from boiling sausages, water with "environmentally friendly" dish soap, and water with bio-degradable soap) and measuring them weekly. I repeated this process for twenty-three days.

**Results**

Kirkland Signature dish soap had the most successful growth with an overall growth average of 59%, followed by tap water with 31% growth, then spaghetti water with 24% growth, then sausage water at 21% average growth. The last was bio-degradable soap water with an average of 18% growth.

**Conclusions/Discussion**

The results indicate that the dish soap was best when I hypothesized it to be the worst. I predicted tap water would be third best, it was second. I was sure that spaghetti and sausage water would be about the same (which they were) and better than the tap water (which they weren#t). Bio-degradable was the worst for plants when I had predicted it to be about the same as water.

From this I summarized that dish soap, at least Kirkland brand, is somewhat environmentally friendly and the best for watering plants, tap water second, spaghetti water third, sausage water fourth, and bio-degradable last.

**Summary Statement**

My project is about the effects of different types of common kitchen grey water on violas in relation to their height and health.

**Help Received**

My parents gave limited assistance with watering and measuring; I attended three mentoring sessions where different scientists briefly talked about my ideas and methods with me. My parents also proof-read my paper and my dad showed me how to do my first graph on Excel.