CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
J1718

Project Title
How Do Increased Concentrations of Salt and Baking Soda Affect the Repellent of Ants?

Abstract

Objectives/Goals
The objective of this experiment is to determine which non-toxic compound, salt or baking soda, is more effective in repelling ants and establish an optimal concentration for the material.

Methods/Materials
Ants were attracted to cotton balls soaked in 20% sugar solutions. Cotton balls were soaked in pure water, 10%, 40%, and 70% concentrations of salt or baking soda solutions and placed in the center of fresh petri dishes. Ten ants were placed on top of the soaked cotton ball. After 5 minutes, the amount of ants repelled from the cotton ball were recorded. This procedure was performed for all 7 concentrations and repeated 4 times for each concentration.

Results
Increases in concentrations of either salt or baking soda repelled ants in greater numbers. Concentrations of 40% baking soda and 70% salt were the most effective solutions to repel ants, while 70% salt seemed better. A control group, with only water, showed that only 1 or no ants were repelled. The other three salt and baking soda concentrations repelled between 4.3 and 6.3 ants on average.

Conclusions/Discussion
These results proved the hypothesis, partially correct. Increasing concentrations of salt and baking soda solutions increased the effectiveness of repelling local Odorous house ants. The results also suggested that salt is a more effective ant repellant than baking soda. Baking soda at higher concentrations, seemed to impact ants# movement, and eventually caused death. These results provide a feasible #green# way to help keep ants out of houses and control their population.

Summary Statement
This Project determines which non-toxic compound, salt or baking soda, is more effective to repel ants and establish its optimal concentrations.

Help Received
Mom and teacher helped edit project; Dad helped collecting ants for the experiment; Brother helped time trials.