CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J1608

Project Title
How Do You Keep Your Cut Flowers Fresh?

Abstract

Objectives/Goals
What kind of ingredients can be used to keep cut flowers fresh? By experimenting with the use of 7up, bleach sugar and the combination of an aspirin tablet & a penny (all combined with water) -- all measured against plain water only, I can observe how well each solution does in preserving the cut flowers best over several days. Initially, my research suggests that bleach may be the best solution, as it may keep the water clean longer.

Methods/Materials
5 pairs of identical cut white roses we placed 5 identical vases, each vase containing a different solution of ingredients: 1) 1/3 cup 7up, plus 1 cup water; 2) 1/3 cup bleach plus 1 cup water; 3) an aspirin tablet and 1 penny in 1 cup water; 4) 2 tablespoons of sugar in 1 cup water; 5) 1 cup of water only. In all vases, the same tap water was used. A thermometer was used during the experiment to see what the room temperature would when checked twice a day, at the same time of morning and evening.

Results
The experiment was conducted over a 9 day period and the following vases of different solutions kept the flowers fresh for the following number of days: 1) bleach solution: 4 days; 2) aspirin/penny solution: 6 days; 3) sugar solution: 7 days; 4) tap water only: 7 days; AND THE WINNER WAS 5) the 7up solution: 9 days.

Conclusions/Discussion
The bleach solution, which my hypothesis said would keep the flowers fresh longer, only lasted 4 days, even though my research suggested bleach would clear the water of bacteria keep the water clean. A question remains: how much bleach is too much. Maybe less bleach, than was used in my experiment, might work as well as the winning solution using 7up.

The 7-up solution (1/3 cup 7up plus 1 cup water) kept the roses freshest for the longest time because of ingredients found in 7-up: sugar, citric acid and soda. I am assuming that the citric acid helped keep the water clean and was less harsh on the flower since citric acid comes from a plant. The soda may have helped keep the water balanced, so the acid was not too strong in the water -- something that might harm the flower.

Summary Statement
By trying tap water, and solutions of different ingredients with tap water, I wanted to find out how to keep cut flowers fresh for a longer time.

Help Received
Mom helped with report formatting and some typing.