CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
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Project Number
36584

Project Title
The Effects of Acid Rain on Calendulas

Abstract

Objectives/Goals
My science fair project was designed to find out if and how an acidic level of pH (acid rain) would affect the health of calendula flowers.

Methods/Materials
I bought 24 calendulas. Then I re-planted the flowers into styrofoam cups. Each flower was placed in a group so there were 6 groups each with four calendulas. The calendulas were watered with varying levels of vinegar and observed over a period of 10 days. I watered the groups every other day. The 6 groups were labeled A through F. Each plant, with the exception of one control plant, received 100 mL of distilled water-vinegar solution (Group B-F). Group A received no vinegar in its water and group F received the most.

Results
When the experiment was over, I found that all flowers in the last 3 groups that received a stronger solution of vinegar (groups: D, E and F) were drooping; some of them were even dead. In the first 3 groups that received a weaker solution of vinegar (groups: B and C) the flowers were also drooping. Group A, however, which received only pure distilled water was doing very well and the leaves were very green. I did notice the flower petals were thinned and changing colors though.

Conclusions/Discussion
In the end, my hypothesis that a higher level of acidity would do great damage to the plants was supported by the results of the experiment. Next time, it would be interesting to use real acid rainwater to see if the results would change.

Summary Statement
I proved in my experiment that the "acid" used in my project had an overall negative effect on the calendula flowers used in mt experiment.

Help Received
I had help from my mother, who helped me choose and buy the flowers for my experiment, but I orginized, documented, and conducted my experiment by myself.