CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J1814

Project Title
The Effects of Honey on Longevity of Fruits and Vegetables: Year 2

Abstract

Objectives/Goals
To determine the effects of a 1% honey solution on extending the shelf life and preserving fruits and vegetables.

Methods/Materials
Last year I tested 3 different dilutions of honey (1%, 5%, and 10%) on strawberries and tomatoes, and found out that my 1% honey solution kept fruits and vegetables fresh longer at room temperature. I investigated further this year using my 1% honey solution. I purchased strawberries, tomatoes,and grapes and raw honey. I made my 1% solution using honey and sterile water. I labeled each fruit and separated them into 3 groups of 10 plus 3 control groups. I sprayed 30 of each berry, grape, and tomato with my 1% honey solution and made my 3 control groups that I didn't do anything to. I let everything dry overnight and stacked them in bowls. This year I took my groups of 10 and placed one outside, one at room temperature, and one in the refrigerator at 40 degrees. I also put a control group with each. The next day I checked for signs of soft or dark spots, or mold. I observed all my groups until they showed signs of decay.

Results
The 1% honey coated strawberries and grapes were preserved 50% more or twice as long as the control groups both at room temperature and in the refrigerator. My strawberries and grapes outside decayed at about the same rate as my control groups. My 1% coated tomatoes did better in the refrigerator, none had decayed by day 10 and in fact did not show any signs of decay for weeks after that. For my tomatoes outside on day 10, 30% were decayed compared to 50% of the control and my room temperature tomatoes actually decayed faster than my control.

Conclusions/Discussion
After completing my investigation in more depth, I found that my hypothesis was correct and the 1% honey solution sprayed on strawberries, tomatoes, and grapes that are refrigerated will stay fresh much longer. It will also keep fruit longer at room temperature which I found again this year like last year. This is a great thing for farmers and fruit packers who store the fruits and vegetables before they send them off to the grocery stores to know and try. The fruit was much better looking too, the strawberries were bright red in color and people who are allergic to or affected by chemicals would not have to worry.

Summary Statement
Investigating whether or not a 1% honey solution could be used to preserve and extend the shelf life of fruits and vegetables.

Help Received
My teacher read over my project and my mother helped type it and helped me with my board.