



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

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| Name(s) Hemani Kamarshi | Project Number J0615 |
| Project Title Investigating Amounts of Vitamin C in Cut Fruits Left in Refrigerator over Time | |
| <p style="text-align: center;">Abstract</p> <p>Objectives I wanted to study how vitamin C content is affected by cutting fruits well ahead of consumption. I grouped the test fruit into two categories: fruit that visibly oxidizes and fruit that does not. I hypothesized that fruit that visibly oxidizes would lose vitamin C at a faster rate than fruit that does not visibly oxidize.</p> <p>Methods To start my procedure, I made a reference sample using a known amount of vitamin C in water. Then I cut fruit into eighths and left the slices in containers in the refrigerator for varying numbers of days. (Uncut fruit were also placed in the fridge as a separate control.) On the testing day, I juiced this fruit and used a titration method that involved a reaction between iodine and cornstarch to find out the amount of vitamin C in the fruit. After this, I analyzed the data. I converted it to milligrams of vitamin C using the reference sample data, found the SEM for the values, graphed it, and conducted a T-test on it. I repeated this experiment by leaving fruit juice exposed in the fridge over time.</p> <p>Results I found that the vitamin C levels in all four fruits dropped over time. Of the oxidation-prone fruits I tested, Granny Smith apples lost 38% of their vitamin C content, while D Anjou pears lost 28% over the 8-day testing period. Of the fruits that do not visibly oxidize, strawberries and Navel orange showed a 19% and 24% reduction, respectively, in the amount of vitamin C over the test period. The vitamin C declining trend in all four fruits was statistically significant with P-values significantly less than 0.05. None of the whole fruits showed a reduction in vitamin C after 8 days in the fridge. Fruit juice showed an even bigger reduction in vitamin C content over the 4-day testing period.</p> <p>Conclusions It shows how vitamin C changes in pre-cut fruits, and helps people decide which fruits would be best not to store after cutting to maximize the vitamin C content.</p> | |
| Summary Statement My project is investigating what happens to the levels of vitamin C in fruit when cut and left in the fridge over time, and I found interesting results showing how long we should leave cut fruit before consumption. | |
| Help Received I would like to thank Vivek Kamarshi for helping me refine and edit my content, especially my conclusion and result slides, and my mentor, Mrs. Corinna Chung (teacher at John F. Kennedy Middle School), for helping me with the scientific method I used and helping me revise my content, and for her valuable | |