Project ID: 583

JR - Biochemistry

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Detection and Comparison of Vitamin C Enriched Beverages

Summary: In this study Vitamin C content was detected and compared in 12 enriched beverages. Iodine and Indophenol titration methods were used. Minute maid lemonade had the lowest vitamin C content and Hi C the highest. On Day 8, the greatest decrease in vitamin C content was seen in manufactured juices, Orange juice and Apple juice. Beverages showed variation between the label and experimental vitamin C content. These results indicate it is necessary to perform a stricter quality control in juices and ready-to-drink beverages

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JR - Biochemistry

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Holy Water Take 2

Is there bacteria in Holy Water? This is the main question I am trying to answer. If I determine the amount of bacteria in samples of Holy Water from different churches in Northern San Diego, the church with the largest number of parishioners will have the most positive bacteria results. The steps I followed to complete this project was first to pick the locations to test holy water, then I got the materials for the testing. I collected 3 samples of 4 mL of holy water at each church. Then I began the process of swabbing the samples on a petri dish with an agar bottom. My results include all tests with bacteria, which was very surprising to me due to my results from the year before. After carefully examining the tests I found that not all had grown the same bacteria, and some did not grow bacteria at all. I was still happy with the results because even though bacteria has been found that does not technically mean it is harmful to humans. I have come to the conclusion that all the churches I have tested have very little bacteria and that population size will not matter.

Project ID: 585

JR - Biochemistry

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Will Soaking Food in Water Before Cooking Remove Starch from It?

This project aimed to identify the type of rice, pasta, and potato with the lowest amount of starch for people with diabetes, and to test whether soaking time can help reduce the amount of starch in these foods.

It was hypothesized that soaking food items for longer times will reduce the amount of starch, and that wheat pasta will have the least amount of starch compared to other food items.

100 grams of each food item was boiled and strained, and the resulting juice was pipetted into a spectrophotometer cuvette. Two drops of iodine was added to the cuvette, and the absorbency rate was measured at 460 nm. The process was repeated after soaking each food item for 60 minutes and 3 hours.

Sweet potatoes had the least amount of starch compared to other types of potatoes, and the longer soaking time significantly lowered its starch by 40%. Among the different types of pastas, spinach pasta had the lowest amount of starch, whole wheat pasta had the most. Brown rice had the least amount of starch among the different types of rice, and short white rice had the greatest amount of starch but had one of the highest percentages of starch loss of 32.6% after soaking for 3 hours.

In conclusion, soaking time can reduce the amount of starch in food, and sweet potatoes, brown rice, and spinach pasta are better options for people with diabetes compared to other types of potatoes, rice, and pasta. Wheat pasta had the most starch, contrary to the hypothesis.

Project ID: 586

JR - Biochemistry

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Effect of Time and Ripeness on Vitamin C Levels on Fruits

For this project, the researcher wanted to investigate if time affects how much Vitamin C is in fruits. (Oranges, Grapefruits, and Kiwis). The investigator is observing the Vitamin C levels of oranges, grapefruits, and kiwis during their ripening stages. The hypothesis is that a fruit that is more ripe will have more Vitamin C than the unripe one. I plan to investigate my experiment by placing 20 of each fruit on a table. I will then test the Vitamin C levels by pouring a whole packet of Iodine Tincture into 500 milliliters of water and then dropping the Vitamin C solution into the squeezed fruit juice. I will do this with 10 unripened fruit, then wait a week and check the Vitamin C levels on the other half of the fruit the same way as before. The main message I want to tell people is what is the best time to eat fruit to get the most Vitamin C. The project is important because it helps people know when to eat fruit to get the most Vitamin C levels.