**Detecting Vitamin C in fruit juices**

Hypothesis:

If the orange juice is not the highest in vitamin C, then it will be the Sunny D, because it is similar to orange juice and is often advertised for its vitamin C content.

Materials:

* Iodine - Lemon juice
* Corn starch - Sunny-D
* Orang juice - Five alive
* Apple juice - Vitamine C Tablet
* Grape juice - 10ml needle syringe
* Medium sized pot - 7 medium test tubes
* Small bowl

Independent variable: Fruit juices

Dependant variable: Level of vitamin C

Controlled variable: Vitamin C tablet

Procedure pt. 1:

Before you start the experiment you are going to need to make your iodine starch solution.

Add a table spoon into a small bowl and add a small amount of tap water, just enough to turn the corn starch into a past. Measure out 250 milliliters of water with your test tube. Pour this into the cornstarch paste. Put this in a pot and heat over the stove until it boils. Boil for 5 minutes.

While your water is boiling, measure out 75 milligrams of water in a test tube. Once your water is done boiling, take your 10ml needle syringe. Use your needle syringe to add 10 drops of the starch solution to the 75 milliliters of water.

Finally, add drops of iodine until the starch solution changes color. You can now add your iodine. Clean out your needle syringe and then fill it with iodine. Gradually add drops of iodine until your solution turns a dark purple-blue color.

Voila! Onto pt. 2!

Procedure pt. 2:

Now that you have your iodine starch solution, you can start your experiment.

Let’s start with the control group. Dissolve your vitamin C tablet in a test tube with 5mls of water. Fill your needle syringe with the iodine starch solution and gradually add drops until there is a significant colour change. (Juices high in vitamin C should turn clear.)

Dependant variable: Add 5mls of each fruit juice into a test tube and individually record how many drops of iodine starch solution it takes for a significant colour change, then record your data.

Observations:

Vitamin C tablet: There were 80mls of iodine in each test tube. I only had to use one drop before it turned clear!

Orange juice: This one took 5 drops before it turned clear. The first drop did nothing, the second made it lighter and at the fifth drop the iodine turned a light yellowy-green.

Apple juice: This took two drops. The first drop made it lighter and the second made it clear.

Sunny D: This only took one drop to become clear!

Grape juice: This took 4 drops. The first did nothing, the second made it lighter and the fourth made it clear.

Five Alive: This got lighter after 2 drops, but there was no major colour change.

Lemon: This took one drop to become clear!

I was very surprised when the results showed Orange juice to be one of the lowest in vitamin c. It was shocking as Orange juice is one of the first things I think of when Vitamin c is brought up. When I first started this project I only knew that vitamin C was something everyone needed and was found in oranges. During this project I learned that vitamin C prevents and can cure Scurvy, a disease marked by sore gums and bleeding under the skin. I also learned that vitamin C is essential for sound bones and teeth. Vitamin C is also needed for tissue metabolism. The final thing I came across was that vitamin C isn’t only found in oranges. Vitamin C is found in Cantaloupe, citrus fruits, raw cabbage, strawberries and tomatoes. (The things you learn! ☺)

Bibliographie: World book encyclopedia volume 20 U-V 2016

The turfts University guide to total nutrition.

Conclusion: This experiment investigated how much vitamin C fruit were in fruit juices. In order to study the problem, an iodine starch solution was made and dropped into orange, lemon, five alive, grape and apple juice, until there was a significant colour change. Results showed that the lemon juice and Sunny-D had the highest content of vitamin C. The Five Alive came and Apple juice tied for second, Grape in third and Orange juice in last! How shocking is that?! If this experiment was to be repeated, instead od the Iodine starch solution, a professional vitamin c testing kit would be used. If any changes could be made to this experiment if it was to be preformed again, the tests would expand farther then only fruit juices. Everyday foods such as eggs, lunch meat, vegetables and more would be tested for their vitamin c content!