



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Mary Aylozyan	Project Number J0604
Project Title Does Cooking Methods Affect Vitamin C in Carrots?	
Abstract Objectives/Goals The purpose of this experiment was to see which carrot has more vitamins after being boiled, steamed or fried for 15,30 and 45 minutes. Will the boiled have the highest level of vitamin C in carrots then the other cooking method? Methods/Materials # First I have to prepare the carrots for cooking. # Chop the carrots into 2 centimeters cubes. # Rinse the carrots and boil them. # Put 1000 ml of water into a pot. # Add 750 ml of carrots. # Set temperature for pot to boil. # Start timer as soon as it first boils. # Take 250 ml of carrots out of boiling water when the timer goes off in 15 minutes continue cooking remainder . # Take 250 ml of carrots out when timer goes off at 30 minutes, continue cooking remainder. # Take 250 ml of carrots out at 45 minutes. # Package and store samples. # Let each batch of boiled carrots cool in colander for 10 minutes. # Vacuum the packed carrots and make sure they aren't touching any air. # Label each pack of boiled carrots and put there cooking method time # Put them in the refrigerator. # Steaming carrots. # Put 250 ml of water in a pot. # Put a steaming basket on top of the water in the pot. # Repeat steps 2.d-2.g except the steaming part. # Repeat steps 3 for the steamed group. # Measure the vitamin C collect a sample carrot # Put 600 ml beaker onto the electronic balance and tare ,add 100.0 grams of sample # Add 300 ml of distilled or deionized water # Add 5 ml of 10% sulfuric acid using a pipette # Add 5 ml 1% starch solution to mix # Titrate mixture with iodine solution to blue or black end point that lasts for no longer than 20seconds # Record the iodine solution that was used. Results My findings were that steam had the most Vitamin C after it was steamed in a pot for 15 minutes. The fried had the least amount of vitamin C levels after it was fried in a pot for 45 minutes. Conclusions/Discussion My hypotheses was correct and incorrect at the same time . My hypothesis was correct because I assumed that the fried 15,30 and 45 minutes was gong to lose the most amount of vitamin C . It was also incorrect because I thought that the boiled 15 minutes was going to have the most amount of vitamin C after the experiment. It turned out that I was wrong. According to my experiment, the steamed 15 minutes had the most vitamin C after being steamed for 15 minutes.	
Summary Statement The purpose of this experiment was to see which carrot has more vitamins after being boiled, steamed or fried for 15,30 and 45 minutes.	
Help Received Naralie Sonni , a chemist that worked at Micro Quality Labs Inc. She showed me the equipments and the methodology for titration.	