CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J0512

Project Title
Ironic: Iron Content in Fruits and Vegetables

Abstract

Objectives/Goals
My goal was to find out if vegetarians can get the recommended amount of iron.

Methods/Materials
Eight different fruits and vegetables were tested five times each to find their iron content. I cut up one cup of the fruits and vegetables and blended them until they were pureed. I then strained the solutions to remove the pulp and collect the liquid. Once this was done I added tea to the juice solutions, which chemically reacted causing iron to precipitate at the bottom of the cup. After three hours of letting the solutions sit undisturbed I strained the juice solutions once again to collect the iron particles. Then I weighed the collected iron on a gram scale and recorded the weights.

Results
I found that the grape averaged the most iron per cup at 3.96 grams per cup, pineapple averaged 3.67 grams per cup, cranberry averaged 3.07 grams per cup, broccoli averaged 3.01 grams per cup, apricot averaged 1.52 grams per cup, asparagus averaged 1.24 grams per cup, spinach averaged 1.13 grams per cup, and apple averaged 0.68 grams per cup and had the least iron. Cranberry had the highest average iron per calorie at 0.067 grams per calorie, pineapple averaged 0.049 grams per cup, broccoli averaged 0.046 grams per calorie, grape averaged 0.035 grams per calorie, asparagus averaged 0.025 grams per calorie, spinach averaged 0.023 grams per calorie, apricot averaged 0.02 grams per calorie, and apple averaged 0.014 grams per calorie.

Conclusions/Discussion
My hypothesis was partly correct because I thought vegetarians wouldn't be able to get enough iron, but I found that only women from ages 11 to 50 would not be able to get enough iron if they ate five servings of spinach and four servings of apple each day which are the fruits and vegetables with the least iron. I also found that if they ate five servings of broccoli and four servings of grape each day which are the fruits and vegetables with the highest iron content, then all the age groups, male and female would get enough iron per day.

Summary Statement
My project is about the iron content in fruits and vegetables.

Help Received
My science teachers, Colin Matheson and Sunny LeMoine advised me on my project, my father took pictures while I was conducting my experiment, and my mother helped edit my work.