CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J0525

Project Title
Are All Reds Red?

Abstract

Objectives/Goals
The objective of this project was to determine if all reds contained the same pigments and had the same physical characteristics.

Methods/Materials
I ran a simple paper chromatography test using BAW (butanol, acetic acid, and water) and water on isopropanol extracts of red ribbon, rose, tulip, carnation, ginger, and ripe jalapeno pod. I used a spectrophotometer to look at the solutions and determine if they had the same absorption patterns.

Results
The first observation that I made was that the isopropanol extracts varied. The next observation that I was able to make was that the different solvents that I used for my paper chromatography produced different chromatograms. I found from my paper chromatography tests that each of the red extracts were made up of different colored pigments. When I looked at my chromatograms under UV (ultraviolet) light I was able to see differences from when I looked at the same chromatograms under visible light. I looked at my extracts using a spectrophotometer, and found that the extracts all had unique absorption patterns. Some of my extracts did have peaks in similar places, but the height of those peaks differed. I used R(f) (ratio of fronts) to show that the extracts contained similar patterns of pigmentation.

Conclusions/Discussion
From this research I was able to conclude that all reds are not made up of the same pigments. I was able to prove this through paper chromatography, R(f)s, and spectrophotometric analysis.

Summary Statement
The purpose of this project was to determine whether all reds contained the same pigments

Help Received
I used the lab space and equipment of Dr. Zavala from California State University Northridge.