



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Brittany M. Weems	Project Number S0423
Project Title Common Roots?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to observe similarities and differences in the DNA of various fruits and vegetables by extracting the DNA and performing gel electrophoresis. I believe that both fruits and vegetables will have common traits, considering they are all plants, but I hypothesize that the fruits and vegetables will each have distinct DNA patterns that may be attributed to different qualities such as duration of shelf life, coloration, and other traits that are unique to each fruit or vegetable.</p> <p>Methods/Materials I used a blender, measuring cup, strainer, wire, glass rods, test tubes, strawberries, banana, blueberries, kiwis, pear, grapes, broccoli, cauliflower, onion, Brussels sprouts, carrots, raspberries, and the lab at California State University Bakersfield. I extracted the DNA at my home by blending the fruits and vegetables, straining the mixture, adding detergent, adding contact solution, and using rubbing alcohol to separate the DNA. I then had the assistance of Dr. Szick-Miranda at CSUB and performed gel electrophoresis to separate the DNA of the fruits and vegetables. After running the gels for 45 minutes each, we put the gels on a UV light and took pictures to compare.</p> <p>Results In the first trial I was only able to extract DNA from strawberries, banana, and blueberries. The gel electrophoresis did not work properly, and not much DNA was visible. There are some factors that may have caused this, too much water mixed with the fruits and vegetables, not using cold alcohol, adding too much water to extracted DNA, not letting mixture sit with rubbing alcohol long enough, and other variables that I changed. The second trial had better results; I was able to extract DNA from strawberries, banana, blueberries, as well as broccoli, cauliflower, onion and Brussels sprouts.</p> <p>Conclusions/Discussion The initial results that I achieved were not enough to form a conclusion, because the DNA did not show up properly in the electrophoresis, and I was only able to extract fruit DNA. I learned from my first trial and attempted to extract the DNA again. The second trial yielded better results in DNA extraction, but I was still unable to get an efficient electrophoresis reading. I have come to the conclusion that I must try a more complex procedure in order to get the results I am looking for. I have acquired a new procedure and plan to work in my school lab to achieve better results.</p>	
Summary Statement My project was conducted to compare the DNA of various fruits and vegetables through gel electrophoresis.	
Help Received I used lab equipment at California State University Bakersfield under the supervision of Dr. Kathy Szick-Miranda, and I plan on getting help from my teacher Mr. Matt Day at Ridgeview High School on my new procedure	