



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Michael D. Gonsalves</b>	<b>Project Number</b> <b>J0404</b>
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<b>Project Title</b> <b>Do Different Parts of a Plant Yield Different Amounts of DNA?</b>
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<b>Objectives/Goals</b> The main purpose of my project is to determine whether different parts of a plant will yield different amounts of DNA.	<b>Abstract</b>
<b>Methods/Materials</b> Materials: A·Blender; A·Hot plate; A·Thermometer; A·Ice bucket; A·Balance; A·95% ethanol solution; A·Plastic gloves; A·100ml liquid dishwashing detergent; A·Table salt; A·Cutting board; A·Plant leaves; A·Plant stem; A·Plant roots; A·Knife; A·Funnel; A·Cheesecloth or coffee filter; A·2 100ml graduated cylinders; A·3 beakers; A·Glass rods.  Procedure: 1.Wearing plastic gloves, cut leaves/stems/roots into cubes 2.Weigh 50g of diced plant material and put in 250ml beaker 3.Prepare a detergent/salt solution by dissolving 2g of salt in 90ml of water, and 10ml of detergent 4.Add detergent/salt solution to diced plant material and maintain incubation at 60 degrees Celsius for 15 min 5.Cool to 15-20 degrees Celsius in an ice bath 6.Pour into blender and homogenize for 45 seconds at low speed, and 30 seconds at high speed 7.Pour into 1L beaker and cool in ice bath for 15-20 min 8.Filter through cheesecloth or other filter into 500ml beaker 9.Place beaker into ice bath, let it cool until it reaches 10-15 degrees Celsius 10.Put 80ml of ethanol into a cold graduated cylinder and add down the side of the beaker containing the solution until white stringy DNA precipitate appears 11.Spool DNA onto a glass rod by rotating it in one direction in the beaker of DNA. 12.Ease it into vial filled with 50% ethanol and seal	
<b>Results</b> I found that the stem and leaf material yielded some DNA whereas the root material didn't produce any visible strands of DNA. I was shocked to find that my hypothesis seemed incorrect because no DNA was visible in the root liquid container but there was some in the other containers. From my observations I can see that the leaves and stems yielded more DNA than the roots by a considerable amount.	
<b>Conclusions/Discussion</b> The above results of the experiments proved that my hypothesis was incorrect. After further research, and	

<b>Summary Statement</b> The main purpose of my project is to determine whether different parts of a plant will yield different amounts of DNA.
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<b>Help Received</b> I would like to thank my father for helping me research my topic and ordering the materials needed for the procedure over the internet for me. I would also like the thank Jim Rayburn for listening and giving me information about my topic. I would like to thank Mr. Hobbs for pointing out the flaw in my first topic
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