



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Caitlin A. McCabe	<b>Project Number</b> <b>S1611</b>
<b>Project Title</b> <b>Alterations of Growth and Genetic Make Up Due to the Introduction of Organic Compounds</b>	
<b>Objectives/Goals</b> By feeding 2 young tomato plants carrot juice with organic substance, injecting 1 tomato plant with carrot juice, and by cutting a tomato plant open and injecting carrot juice into the wound characteristics of carrot plants will appear in the tomato plants either visually (by human sight) or by molecular testing and make the tomato plants a form of a recombinant organism.	
<b>Abstract</b> <b>Methods/Materials</b> In this experiment I grew six young tomato plants and let them grow under their conditions stated in the hypothesis for 13 days. After 13 days I took the plants and put them under several tests. The first test was Thin Layer Chromatography in which small portions of the plants were taken and tested for pigmentation to see if there were any carrot cell uptake into the tomato plants. The second test was DNA Extraction in which the DNA from the tomato plants was extracted in order to perform Gel Electrophoresis. The third test was Gel Electrophoresis in which the extracted DNA was run in order to compare the DNA from the tomato plants grown to a carrot plants DNA, a tomato plants fruit, and a carrot root.	
<b>Results</b> In growing the tomato plants the plants fed were significantly smaller in size than the controls. Also the plants fed had shown newer characteristics such as leaf shape, size, and color not found in the controls or the injected. In Thin Layer Chromatography there were significant amounts of Carotenoid pigment in the tomato plants that had been fed the carrot juice and small traces of Carotenoid in the injected and cut tomato plants. In the DNA Extraction there was no DNA extracted from any of the test subjects. Instead of DNA I used the protein extract to perform the Gel Electrophoresis. In the Gel Electrophoresis the protein substance that had been extracted in the previous test was run and the results concluded that the plant that had been injected the carrot juice had a small trace of carrot protein in themselves. It also showed that the plants fed carrot juice had a small bar but not as significant as the injected plant.	
<b>Conclusions/Discussion</b> In conclusion the results of the experiment proved that the hypothesis was true because there was an intake of the carrot cells and carrot protein and that it had caused some of the tomato plants to show new or modified characteristics different to the normal tomato plants growth.	
<b>Summary Statement</b> The effects of specific organic compounds on tomato plants growth and characteristics.	
<b>Help Received</b> Used Ribet Academy lab facilities and equipment under the supervision of my teacher Mr. Michail.	