



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> Sarah Waliany	<b>Project Number</b> <b>J1628</b>
<b>Project Title</b> <b>The Effect of Estrogen on the Growth of Cruciferous Vegetables</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective was to evaluate the relationship between the phytonutrient I3C, found in Cruciferous vegetables, and estrogen in the soil, and to show if estrogen in the soil can promote the growth of these vegetables by acting like auxin (a natural plant hormone that promotes the growth of these vegetables). <b>Methods/Materials</b> During a seven month period, estrogen tablets were grinded and mixed with 240 ml of water, and 10 ml of this solution was given to 48 broccoli and 41 cabbage plants labeled as "Group II," while another 48 broccoli and 41 cabbage plants in Group I did not receive estrogen. The growth of these plants was measured in inches and was recorded. <b>Results</b> The average growth for the broccoli plants that received estrogen was 19 inches compared to 16 inches for broccoli plants that did not receive estrogen. The average growth for cabbage plants that received estrogen was 7 inches compared to 6 inches for plants that did not receive estrogen. <b>Conclusions/Discussion</b> The study showed that the plants that received estrogen had a higher growth rate compared to plants that did not receive estrogen. The phytonutrient I3C probably reacted with estrogen, and estrogen could have acted like auxin to promote the growth of these vegetables.	
<b>Summary Statement</b> My project was conducted to find the effect of estrogen on the growth of Cruciferous vegetables.	
<b>Help Received</b> Father brought estrogen tablets, soil, seeds, and pots.	