



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Sally E. Stanton	Project Number S1615
Project Title The Ability of Salicylic Acid to Reduce the Damaging Effects of Salt Water Stress on Phaseolus vulgaris	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine whether or not applying a low concentration of salicylic acid (SA) to green bean plants will reduce any damaging effects caused by exposure to salt water stress during early growth.</p> <p>Methods/Materials I planted 72 green bean plants from seeds under an indoor fluorescent light with one of four different treatments: one group (of 18 plants) was given only a treatment of water for a total of 11 days, the second group (18 plants) was given a treatment of .5mM SA at the time they were planted and then only water for 11 days, the third group (18 plants) was planted with only water and then treated with 15 cc#s of 100mM NaCl every day from day 6 to day 11, and the last group (18 plants) was treated with .5mM SA when first planted, and also exposed to five days of salt stress. After 11 days of growth I cut the plants and measured their stalks, their two largest leaves, and took their biomass.</p> <p>Results I analyzed my data by finding the standard deviation for each measurement, and then I did a t test for all three measurements of growth comparing the results. I found that the results of biomass and height of the plants treated with SA and exposed to salt stress were significantly greater than those only exposed to salt stress but only slightly significantly greater for the length of the leaves. All of the results of plants exposed to salt stress were significantly less than results of the control plants.</p> <p>Conclusions/Discussion In my experiment the use of salicylic acid on green bean plants helped them to resist damages caused to green bean plants by salt water stress. Salt water stress inhibited the growth of green bean plants so that they were shorter, had smaller leaves, and less biomass than plants grown without any extra chemicals. A pretreatment of salicylic acid significantly increased the mean height and mean biomass of green bean plants exposed to salt stress, but not the mean leaf length. A .5mM treatment of SA alone did not have any significant damaging effects on the green bean plants.</p>	
Summary Statement Looking at whether or not salicylic acid helps green bean plants resist damages caused by salt water stress.	
Help Received Cathy Messenger (friend of my teacher) helped me find an interesting topic idea.	