



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Joseph A. Nora</b>	<b>Project Number</b> <b>S1918</b>
<b>Project Title</b> <b>Effects of ABA on the Inhibition of IAA in Thigmotropic Reactions and Resistance toward Weather on Pisum sativum</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to test the effect of ABA (Abscisic acid) on the inhibition of IAA (Indole-3-Acetic-Acid) in thigmotropic reactions alongside ABA's ability to increase a plant's resistance by retaining water. My hypothesis is plants with higher concentrations of ABA will have lower thigmotropic activity but higher resistance toward weather. <b>Methods/Materials</b> In this project varying amounts of an aqueous solution of ABA was applied to plants. The thigmotropic activity of plants will be measured by the curvature of the most dominant stem. Curvature is measured with an equation " $da / dl = k$ " da represents change in stem angle, dl represents change in stem length and k represents curvature. Because it is measured in the change of an upright stem at 90 degrees at the average length of stems on the plant was used as a reference point. Plants were set near a mechanical stimulus so that they may react toward it for thigmotropic reaction. <b>Results</b> My hypothesis was partially correct, plants with a higher amount of ABA had lower thigmotropic activity however had less resistance toward opportunistic fungus. Because ABA increases the amount of water and surface area the opportunistic fungus were able to take advantage of the increased moisture and growing space. <b>Conclusions/Discussion</b> Because ABA increases resistance toward weather by helping retain water the increased surface area and water allowed opportunistic fungus to invade the plant. ABA is also naturally used in plants in times of harsher weather like winter the concentration of ABA was much higher than it would normally be in another season. By applying ABA the natural balance between IAA and ABA was disturbed causing in a failure to continue the plant's normal functions.	
<b>Summary Statement</b> Effects of ABA on the inhibition of IAA in thigmotropic reactions	
<b>Help Received</b> Used gram scale at UCI's toxicology department	