



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Madison A. Zeller</b>	<b>Project Number</b> <b>J1630</b>
<b>Project Title</b> <b>Does the Density of Stomata in a Plant's Leaf Affect the Amount of Water Lost?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I investigated whether or not the density of stomata in a plant's leaf affects how much water is lost during transpiration. My hypothesis was that different numbers of stomata would have an affect. <b>Methods/Materials</b> I placed four different plant species into separate graduated cylinders filled with 10 ml of water. A controlled cylinder held no plant. I let them sit for three days and then calculated each plant's average water loss. <b>Results</b> The average losses and standard deviation values were Dieffenbacia 3.9/2.6 ml, Spathafillum 3.3/2.3 ml, Philodendron 2.4/1 ml, Ivy 1.9/0.7 ml, and the control 0.4/0 ml. <b>Conclusions/Discussion</b> After performing a statistical analysis on the results, I concluded that stomata numbers do not affect water loss amounts. My hypothesis was proven wrong, though differences in plant characteristics such as a stem's thickness could have impacted the water loss results.	
<b>Summary Statement</b> My project is about how the density of a plant's stomata affects the amount of water lost during transpiration.	
<b>Help Received</b> Borrowed microscope and slides from Sierra Canyon School; Parents helped gather supplies and explained graphing program.	