



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Quintin J. Arretche</b>	<b>Project Number</b>  35488
<b>Project Title</b> <b>The Effect of Hydrogels on Water Conservation in Soil</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this project was to determine the effect of hydrogels on soil water retention in various potted plants. <b>Methods/Materials</b> <b>Methods</b> In 42 pots of soil, incorporate 3 grams of hydrogels in 14 pots, 1 gram of hydrogels in 14 pots, and leave the other 14 pots as the control. In each of the groups plant 5 corn, 5 snap peas, and 4 sweet william. Water each pot and record initial mass. After one week, record the mass of all pots then re-water. Record the mass of all pots every 24 hours for four more days. <b>Materials</b> #Miracle-Gro Water storing Crystals (hydrogels) #12 sweet william dianthus plants ( <i>Dianthus barbatus</i> ) #15 snap peas plants ( <i>Pisum sativum</i> var. <i>macrocarpon</i> ) #15 corn plants ( <i>Zea mays</i> ) #Scale #water #Sta-green potting soil <b>Results</b> The data indicated the experimental group (pots with a higher amount of hydrogels in the soil) recorded higher masses than their initial masses: the 3 gram group with larger mass gain than the 1 gram group. The control group (pots with no hydrogels) recorded less mass than their initial masses. <b>Conclusions/Discussion</b> Based on my data, my hypothesis was supported. The data indicated the groups with hydrogels conserved more water. Both experimental groups ended with a higher percentage of mass whereas the control group recorded less mass due to loss of water from the soil.  The data exhibited a trend that more hydrogels in soil results in an increase of mass in the soil. This demonstrates the hydrogels do absorb water thus conserving it in the soil.  Due to hydrogels ability to retain water, their use in soil could possibly provide a solution both	
<b>Summary Statement</b> My project was to determine the effect of hydrogels on water retention in soil using various plants.	
<b>Help Received</b> Besides my father purchasing necessary materials, none.	