



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Anthony Castillo</b>	<b>Project Number</b> <b>J1805</b>
<b>Project Title</b> <b>Is Less More? The Effect of Fertilizer Microdosing on Non-GMO Diploid Yemeni Watermelon Seeds</b>	
<b>Objectives/Goals</b> This project was designed to test the effect of three different fertilizer microdosing application methods on the growth of Non-GMO diploid watermelon seeds.	
<b>Abstract</b> <b>Methods/Materials</b> First, I tested my soil for nutrient deficiencies. The results showed a nitrogen deficiency, adequate amounts of phosphorous, and a surplus in potassium. Blood meal (N=13.25% P=1.0% K=0.6%) was used to correct the nitrogen deficiency. I planted 20 seeds, 5 for each method. I brushed seeds with vegetable oil and rolled them in blood meal fertilizer, put a capful of fertilizer in the seed hole, and mixed a capful of fertilizer in the soil line. The control group had no fertilizer. I measured the stems from the soil line every week for 3 weeks. Depending on the dryness of the soil, I watered the plants nightly either 30 or 60 mL. A soil thermometer, heating mats, and kitchen oven were used to maintain optimal soil temperature. I recorded the soil temperature daily.	
<b>Results</b> The control group showed the most growth with an average of 11.1 cm. Seed coating had an average of 3.5 cm. The seed hole group average came in a tenth of a centimeter smaller at 3.4 cm. All of the plants in the soil line application group died after week one. The week one average of the soil line application group was 1.25 cm.	
<b>Conclusions/Discussion</b> My hypothesis was that the seed coating group would grow the most. My results disproved my hypothesis. I attribute this to the fact that watermelons don't need much nitrogen, a random heat wave killed a few plants and caused stress for others, and my seeds were two years old. If I were to repeat this experiment, I would use newer seeds and a fertilizer with a lower nitrogen content, such as cottonseed meal or crab shell meal.	
<b>Summary Statement</b> My project tested the effect of small (micro) fertilizer doses on the growth of a Non-GMO watermelon.	
<b>Help Received</b> Mother purchased materials; Grandfather obtained seeds; Hydroponics store owner offered suggestions and guidance in the planning of the project.	