



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Darrick L. Gowens</b>	<b>Project Number</b> <b>S1705</b>
<b>Project Title</b> <b>Effectiveness of Different Amounts of Almond Ash as a Fertilizer on the Germination and Growth Rate of a Radish Seed</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My goal is to determine if wood ash at various amounts have any effect on germination rate and if it will produce a stronger and healthier plant.</p> <p><b>Methods/Materials</b> I obtained soil from a field and ashes from a fireplace. I made 3 soil mixtures containing different amounts of ash. All contained 2 cups of soil. The various amounts of ash used were 1 cup, 1/2 cup, and 1/4 cup. I placed the same amount of soil into four (50-cup) planter boxes. I planted the radish seed 1/4" deep. After 7 weeks I harvested the plant and recorded the height, weight, length and width of the plant.</p> <p><b>Results</b> The control group averaged 5 days to germinate. The average plant height is 23 cm, taproot length is 17 cm long and width is .030. The average width of the plant stem is .125 and weight is 1.5 grams. The difference between the plants that have 1/4-cup ash added took 2 days to germinate. They were about 4 cm taller, the taproot was 4 cm longer and about .02 wider. The average stem width was .02 wider and average weight was .96 of a gram more. The smaller amount of ash that is placed in the soil the faster the plant germinated, the bigger and healthier the plant becomes than the plants with more than a 1/4 of a cup of ash. The more percentage of ash that was added to the soil the lower the growth rate. When more ash was added to the soil the higher the Ph level increased and the plant size and weight decreased.</p> <p><b>Conclusions/Discussion</b> The control group averaged 5 days to germinate. The average plant height is 23 cm, taproot length is 17 cm long and width is .030. The average width of the plant stem is .125 and weight is 1.5 grams. The difference between the plants that have 1/4-cup ash added took 2 days to germinate. They were about 4 cm taller, the taproot was 4 cm longer and about .02 wider. The average stem width was .02 wider and average weights were .96 of a gram more. The smaller amount of ash that is placed in the soil the faster the plant germinated, the bigger and healthier the plant became than plants with more than a 1/4-cup of ash. The more percentage of ash that was added to the soil the lower the growth rate. When more ash was added to the soil the higher the Ph level increased and the plant size and weight decreased.</p>	
<b>Summary Statement</b> Analyzing the effectiveness of different amounts of wood ash as a fertilizer on seed germination and growth.	
<b>Help Received</b>	