



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> Catherine E. Jedlicka	<b>Project Number</b> <b>J1614</b>
<b>Project Title</b> <b>How Does the Amount of Plant Food Affect the Germination Rate of Black Turtle Beans?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my project was to find how the amount of plant food affects the root and stem germination rate of black turtle beans. I believed that the beans being watered by 1/2 teaspoon of plant food in 1 pint of water would have the fastest average root and stem germination rate.</p> <p><b>Methods/Materials</b> I performed this project by running three trials for each variable level. The variable levels are as follows: 0 teaspoons of plant food, 1/8 teaspoon of plant food, 1/4 teaspoon of plant food, 1/2 teaspoon of plant food, and 1 teaspoon of plant food. Each of these amounts of plant food were mixed with 1 pint of water. There were three cups per variable level and in each cup there were four beans. Every night at 6:00 p.m. I would measure the results of both the root and stem growth per bean and water the beans with two teaspoons of water from the corresponding cup. I performed this experiment for three weeks or twenty-one days.</p> <p><b>Results</b> Through this experiment, I found that the beans with one teaspoon of plant food had a total average root growth rate of 98.0 inches, and a total average stem growth rate of 24.4 inches, while the beans with zero teaspoon of plant food had a total average root growth rate of 22.4 inches and a total average stem growth rate of 5.1 inches. These results have refuted my hypothesis, but they pertain to my objective because they have answered the question that I have asked.</p> <p><b>Conclusions/Discussion</b> My conclusion is that as the amount of plant food increased both the root and the stem growth rate increased. This information expands our knowledge of plant biology because it allows us to know that when plants gain more nutrients they will have a greater root and stem growth rate.</p>	
<b>Summary Statement</b> My project tests how the amount of plant food affects the root and stem germination rate of black turtle beans.	
<b>Help Received</b> Teacher helped get books for project ideas and help purchase the color back board, Mother helped type results into the chart, Mother and Father helped purchase various materials.	