



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Brooke L. Weber	Project Number J2032
Project Title Investigating the Effects of Nitrogen, Phosphorus, and Potassium on Foliage	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective for this project was to determine what effects nitrogen, phosphorus, and potassium had on foliage. I thought that the plants would grow faster because of the nitrogen. Also I believed that the roots would grow longer and stronger due to the phosphorus. I believed that the color would improve from the potassium. For the sod I believed that it would grow longer but won't have that much noticeable change.</p> <p>Methods/Materials For my project I used many materials. Some of the important ones were the green houses, the Fescue, the Pansies, small backing pans, cups, the Nitrogen, Phosphorus, Potassium, and 8-8-8 fertilizers, fertilizer mixing containers, a color wheel, a centimeter ruler, and the record sheets. To begin my project I had to transfer my flowers into larger cups and the sod into backing pans. After, I put them in green houses. To test my project I had to mix fertilizers into water, then put it in the individual plant section. Every other day I would measure the stems, pedals, and leaves, and the blades of grass then record them on the record sheets. For each section of foliage I would observe the color using a color wheel, then record it on my record sheets. At the end I measured the roots of the plants.</p> <p>Results My results were that the nitrogen did not cause any growth to happen for the leaves, stems, pedals, or roots of the flowers and it had little growth for the sod blades. The Phosphorus and potassium had growth in all five tested areas. The leaves, stems, pedals, roots, and blades of grass all had growth. For the triple eight fertilizer it only caused growth to occur in the leaves. For the color change the pedals, stems, leaves, and blades of grass of the potassium and phosphorus did not have a noticeable color change when compared to the control. The nitrogen and triple eight's color turned to a very light green.</p> <p>Conclusions/Discussion My conclusion did allow me to attain my objective which was to determine what effects the three main macro-nutrients for plants had on pansy flowers and fescue sod. My conclusion did not match my hypothesis exactly. I believed that the plants would grow faster because of the nitrogen; incorrect. I also believed that the roots would improve because of the phosphorus; correct. I believed that the color would improve due to the potassium; incorrect. I believed that the sod would grow just a little. Out of the four only two grew and a little at that.</p>	
Summary Statement My project is about what effects the three main macro-nutrients, which are nitrogen, phosphorus, and potassium, have on foliage, such as fescue sod and pansy flowers.	
Help Received My parents helped by supplying me with the materials I needed. Jeffery Weber helped by giving me professional advice on my project and answering any questions I had, since he is a pest control advisor.	