



CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

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Project Title Seedling Responses to Starter Fertilizers	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this experiment is to determine if the complete starter fertilizer grows the best rye grass seedlings compared to the incomplete starter fertilizers or without any fertilizer at all.</p> <p>Methods/Materials In the first phase of the experiment the rye grass seedlings were planted and fertilized with 5 different treatments with 6 replications of each treatment. Each fertilizer was expected to effect the growth of the rye grass seedlings differently. Treatment 1: 4-0-0. Treatment 2: 4-5-0. Treatment 3: 4-0-3. Treatment 4: 4-5-3. Treatment 5: Untreated control (water only). These numbers represent the % by weight of nitrogen, phosphorus, and potassium in that order. The growth of the plants was recorded daily and then watered every 3 or 4 days.</p> <p>Results After recording all of the final averages of the five treatments, the third treatment with only Nitrogen and Potassium turned out to grow the highest plants with a 6.43 cm average height. The fourth treatment that included a fertilizer with Nitrogen, Potassium, and phosphorus had the second highest averages with a 5.63 cm average. The next highest was the fifth treatment that did not include any fertilizer (just water). That treatment had a 5.37 cm average height. The second and first treatments had the two lowest growth averages. Treatment two, which had Nitrogen and phosphorus only, had a 5 cm average growth rate and the first treatment, which had only Nitrogen, had a 4.66 cm average height.</p> <p>Conclusions/Discussion Based on the results that were received from the experiment, it was obvious that the treatments without potassium did not grow as well as the plants that had potassium included in their fertilizer and they also did not grow as high as the plants treated with only water. However, the third treatments, which included only nitrogen and potassium without phosphorous, grew higher than the fourth treatment (treated with nitrogen, phosphorous, and potassium), which was a little unexpected.</p>	
Summary Statement Starter fertilizers were used on seedlings to determine which fertilizer components stimulated the most growth of the seedlings.	
Help Received Mr. Guerard helped us with the fertilizers and planting.	