CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

Nicolas A. Martinez

Project Number

J1021

Project Title

Is Your Kitchen Trash Useful? The Secret Power of Eggshell Powder

Abstract

Objectives/Goals

My project is about the use of organic fertilizer like eggshell powder on plants. If the eggshell powder is a good organic fertilizer, then the medium amount (1/4tsp) of this fertilizer will work best for more plant growth.

Methods/Materials

This project included grinding the dried eggshells until powder consistency is obtained. Then mixed plain top soil with the eggshell powder at different concentrations (1/8tsp, 1/4tsp and 1/2tsp) making 3 different group plus a control group (no fertilizer). Grass seeds were added to each pot (average of 50 seeds per pot) including a control group for comparison. Then I watched them grow for 6 weeks. Each pot grew between 20-40 grass plants. I measured the 3 tallest grass plants for each pot and calculated the average. I recorded the results (average growth for each group of pots and pH) and made the graphs.

Results

I discovered that this organic fertilizer did not change the acidity of the soil (pH). The group with highest amount of fertilizer (1/2 tsp) was the one with lowest height and the group with the lowest amount 1/8tsp) was the most successful with an average height of 18 inches. These results showed that this organic fertilizer worked but it did not work out the way I predicted.

Conclusions/Discussion

The hypothesis was incorrect because my estimation on the amount of fertilizer that would grow the plants the tallest was off. The best result was achieved with the smallest amount (1/8 tsp). The results varied within the different groups of amounts of fertilizer. I was surprised that the group of pots with the highest amount (1/2 tsp) of fertilizer had the shortest measurement. I discovered that the eggshell powder did not affect the acidity of the soil because the pH remained the same for all of the plants, including the control group (pH8). I think the 1/8 tsp measurement was the most successful because the size of the small pot only allowed 1 cup of soil and this amount of fertilizer must have been the right proportion for that amount of soil.

Summary Statement

Eggshell powder is a great organic fertilizer when it is used in the right proportion for your plants.

Help Received