CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
J2019

Project Title
Do Plants Grow Better in Composted, Ground, or Fertilized Soil?

Abstract

Objectives/Goals
To determine whether using compost and fertilizer actually help in plants growth.

Methods/Materials
Procedure. Blend assorted fruit peels and meats to make compost. Put soil in the pots. Add plants to the pots. Add fertilizer to plants, two of each of the three types. Add compost to plants, two of the remaining four of each type. Place all the plants in an area of equal sunlight. Water the plants. Measure the length, no. of leaves, no. of stems, and color of each plant. Take readings every 3 days over a period of 6 weeks. Materials. 6 Basil, 6 Mint and 6 Rosemary Plants, 18 Pots, 1 Display Board, 1 Notebook, Miracle Gro, Potting Soil, Assorted Fruits, Blender, Water.

Results
1. Plants with Fertilized soil were dying but had shiny leaves. 2. After 2 weeks, Basil & Mint plants started to flower, Composted plants flowering first and in plenty. 3. After 6 weeks, the Rosemary plants started to spread, starting with Compost first but the Ground plants spreading more. 4. The Composted plants had the darkest colored leaves and stems, followed by the Ground and the Fertilized plants. 5. Surprisingly, the Fertilized Mint plants began to spread when the other Mint plants were growing taller. 6. Also, Plant 16, a Fertilized Mint, was the only plant that lost 3 stems by the end of the 6 week; all others recording growth. 7. Only in one case did a Fertilizer plant grow more in length compared to a Ground plant, the Fertilized plants growing significantly less in all other cases.

Conclusions/Discussion
The key conclusions of my 6 weeks study for 18 plants of 3 different types, are: The Composted plants registered the best growth in all the 3 categories. The Composted grew 37% more in length than the other two soil types and 26 % and 48% more leaves compared to the Ground and the Fertilized plants respectively. The stems of the Composted plants also grew 26% and 63% more than the latter two. The Composted Basil plants again showed significantly better results; growing 32% and 48% more leaves, 25% and 30% more in length, and 32.5% and 62.5% more no. of stems, for the Ground Basil and Fertilized Basil plants respectively. The Composted Mint and the the Rosemary plants showed similar results. So my investigative question, #Would a plant grow better in Composted, Ground, or a Fertilized soil?# gets fully answered. And my hypothesis that the Composted soil is better for plant growth, is proven correct.

Summary Statement
Do plants grow better in composted, ground, or fertilized soil?

Help Received
My parents for helping me with the recording of the plant growth and for buying me the necessary supplies for this experiment. Ms. Babish for providing me the necessary rubrics and answering any questions. The Biologist at the Ask the Scientist night for helping me choose the plants.