CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

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Project Number

36755

Project Title

How Do Chemically Treated Seeds Affect the Quality of Soil in Comparison to Untreated Seeds?

Abstract

Objectives/Goals

To determine the effects of chemically treated seeds on the quality of the soil, using the characteristics of moisture, acidity, and quantity of nitrogen, phosphorus, and potassium nutrients as comparison

Methods/Materials

Used soil, eight pots, and chemically treated tomato/corn seeds, non-chemically treated tomato/corn seeds, water. I used two varieties of plants (corn/tomato) because these tomato is a C3 plants and corn is a C4 plant, which have different photosynthesis processes from each other. For independent variables, I used a beaker to measure an exact amount of water and a balance to measure an equal amount of soil in each pot. The soil properties tested for comparison are the following: NPK soil test kit to test nitrogen/phosphorus/potassium levels of the soil, pH meter to measure acidity of soil, moisture meter

Results

There was no common trend amongst the factors tested (NPK, moisture, pH) between the corn and tomato plant. Therefore, each soil quality factor are independent of each other and should be accounted for individually.

Conclusions/Discussion

In order to improve this experiment, it would be useful to quantify the exact amount of nutrients and amount of water in the soil some way, rather than using relative calculations found with the NPK test kit. It would also be helpful to normalize the pH in relation to size as well.

Summary Statement

I compared the soil quality of chemically treated and untreated seeds and found both correlations and differences between the C3(Tomato plants) and C4(Corn Plants).

Help Received

I designed, built, and performed the experiments myself. However, Stanford students helped review my procedure and calculations.