CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
Bridget J. Macmillan

Project Number
J1918

Project Title
An Investigation on the Effect of Different Concentrations of Gibberellic Acid on Spinach

Abstract

Objectives/Goals
The purpose of my science experiment was to determine which concentration of gibberellic acid, if any, produced the best baby leaf spinach for the purpose of an agricultural crop. Different concentrations of Gibberellic acid; 100ppm, 300ppm, 500ppm, 700ppm, and 900ppm, were compared to two controls, water and water with fertilizer. I believe that the 500-ppm concentration of gibberellic acid will form the best agricultural crop defined by plant height, leaf width and length, number of leaves, and leaf color.

Methods/Materials
My hypothesis was tested by applying various concentrations of GA, water, and water with fertilizer, to forty-nine spinach plants (seven each.) Throughout my experiment, fertilizer was applied once a week to all the plants except Water 1, the group containing no fertilizer or Gibberellic acid. I planted all the seeds on the October 31, 2011 and ended the project on 17th Jan 2012.

Results
The results of my experiment show that my hypothesis was incorrect. The 500ppm concentration of gibberellic acid did not produce the best agricultural crop or the healthiest plants. While the GA plants as whole were the tallest, they produced smaller leaves. Also, despite being watered with fertilizer, they were not as green as the Water 2 plants (water with fertilizer) control.

Conclusions/Discussion
My definition of the best agricultural crop belongs to the Water 2 spinach plants, having the greenest, biggest and greatest number of leaves, meaning that they also have the greatest nutritional value. This research can benefit society, as spinach is a crop planted in many countries and is very nutritional and easily grown. My investigation into the effect of gibberellic acid on the growth of spinach plants is important, as GA can be used to increase the crop and feed more people for relatively little effort.

Summary Statement
Testing the effects of different concentrations of gibberellic acid on spinach plants.

Help Received
My Mother helped glue the board together and take photos.