CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)

Michael C. de Lyon

Project Number

23083

Project Title

The Germination of Corn, Radish, and Marigolds in Reduced Gravity Environments

Abstract

Objectives/Goals

My experiment was designed to test the germination and growth of corn, radish, and marigolds as the experiment's variable, gravity, was changed.

Methods/Materials

I examined gravity levels of 0g, 0.25g, 0.5g, 0.75g, and normal gravity. I took 10 seeds of each type and spun them around in a clinostat to simulate different gravity levels. After a period of 30 days, I removed the germinated seeds and analyzed the results, which included germination percentage, root/stem length, and root/stem shape.

Results

I found that plants grew very well under normal gravity, while plants rotated to simulate reduced gravity often grew poorly, with withered stems and roots pointing in random directions. In addition, the percentage germination of the plants in lower gravities was always less than or equal to the percentage germination of plants at normal gravity (with no rotation).

Conclusions/Discussion

The results of my experiment suggest that growth of food crops in reduced gravity environments like space may prove to be difficult.

Summary Statement

I germinated corn, radish, and marigold seeds in different gravities and recorded germination percentages, length, and shape.

Help Received

Father helped build the clinostats.