CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J1415

Project Title
Can Beta-Carotene Prevent Plant Cancer?

Abstract

Objectives/Goals
The objective of my project is to see if beta-carotene can prevent cancer in sunflowers.

Methods/Materials
I took six pots and filled them with potting soil. Then I planted sunflower seeds in each pot. Three pots of seeds were given beta-carotene in their water. I watered each pot 150ml of their appropriate water (3 were given beta-carotene with their water) for six weeks bi-weekly. After those six weeks I inoculated all plants with Agrobacterium tumafaciens which causes cancer in plants and observed them for three weeks.

Results
After all of the plants were inoculated, I found that the plants that did not receive beta-carotene developed more galls, had more numbers of plants in each pot die and did not grow as rapidly.

Conclusions/Discussion
Those plants given beta-carotene from the beginning appeared healthier. beta-carotene seemed to help the plants immune system and helped the plant grow thicker stalks and greater foliage. Those plants receiving beta-carotene had the strength to fight off the cancer better. This would be worthy to further investigate to see if beta-carotene might be helpful in preventing cancer in humans.

Summary Statement
My project was to see if Beta-Carotene (Vitamin A) could in some way boost a sunflower's immune system enough to prevent Crown Gall Disease (a form of cancer).

Help Received
Father and Mother helped put board together.