CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
Au K. Vo

Project Number
J2199

Project Title
Effects of Water Pollution on Radishes

Abstract

Objectives/Goals
The purpose of this project is to find out which possible pollutant stops radishes from growing the most and to find out how much pollution affects plants around the world.

Methods/Materials
Radish seeds, bleach, motor oil, pesticides, ethanol, microscope, Toluidine blue, hydrochloride acid. Radishes were grown and watered with bleach, motor oil, pesticides, and ethanol. Plant growth was measured every other day for 23 days. Radishes were observed under a microscope.

Results
Bleach inhibited the growth of the radishes the most and has a negative effect on plants. Ethanol affected the radishes the least, negatively. Motor oil damaged the radishes, but not as much as bleach. Pesticides is not good for plants according to the experiment. Radishes watered with pesticide mixtures grew less than the control watered with tap water. The data was obtained from two trials.

Conclusions/Discussion
Bleach, motor oil, and pesticides affect the growth of the radishes negatively. Only ethanol has little effects on radishes. Bleach in high concentrations kills the radishes, but in low concentrations, only lessens the growth. Motor oil in small concentrations damages the radishes more than higher concentrations of motor oil. Pesticides are not good for plants as the radishes watered with pesticides has limited growth. All the pollutants tested are bad for plants, as radishes watered with tap water have the best weight and growth.

Summary Statement
The project shows that the pollutants, bleach, motor oil, pesticides, and ethanol, are bad for plants' growth and cells.

Help Received
I conducted the experiment by myself, and got help from my parents in staining the radishes' cells and observing the cells under a microscope.