CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1717

Project Title
Does Hydrogen Peroxide Affect Germination?

Abstract

Objectives/Goals
To find out if hydrogen peroxide, a common fungicide and algaecide, at different concentrations, affects germination.

Methods/Materials
Materials: Snap Pea Seeds, plastic cups (4), cotton balls, hydrogen peroxide (3%), tape, bowls (4), teaspoon, tablespoon, measuring cup, black Sharpie.

Procedure:
1.Use the measuring cup to create these solutions, place in seperate bowls, and mix.
A. One cup of water. Label this bowl as None.
B. One cup of water and one teaspoon of hydrogen peroxide. Label this bowl as Low.
C. One cup of water and three teaspoons of hydrogen peroxide. Label this bowl as Medium.
D. One cup of water and five teaspoons of hydrogen peroxide. Label this bowl as high.
2. Place 10 seeds into each of the growing solutions in the bowls.
3. Record the root and stem growth for two days.
4. After two days, use the Sharpie to label the cups as None, Low, Medium, and High.
5. Spread a cotton ball along the bottom of each cup.
6. Move the seeds into the cups made earlier. The bowls should coorespond (The none seeds in the none bowl, etc.)
7. Spoon in four tablespoons of each mixture into the cooresponding cup.
8. Record the root and stem growth for 8 days.

Results
The hydrogen peroxide had a positive effect on the plants. The ones with a low concentration of hydrogen peroxide grew the fastest, then the medium, then the high, and lastly came the ones with only water in their cup (dependant variable). Since the hydrogen peroxide contains oxygen, the plant roots grew faster. The roots need oxygen, and it was always readily available in this way. As the concentration of it got higher, the acidity of the hydrogen peroxide began to affect the seeds and made them grow slower.

Conclusions/Discussion
My hypothesis was proven wrong. I thought that the hydrogen peroxide would slow down the germination or even kill the plants, but the exact opposite occured. I would like to further test this on fully grown plants.

Summary Statement
My project is about the effects of hydrogen peroxide, a common fungicide and algaecide, on plant germination.

Help Received
Mother helped glue papers onto the board.