Colorado Science and Engineering Fair

2025 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Salinity Solution: A Study of How the Salinity in Water Affects Plant Growth

Finalist's Name: Elaina Consaul

School and City: Sargent Middle School Monte Vista

Sponsor's Name: Terri Rae Paulson

Category: Plant Sciences

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

This is an investigation into how the salinity in water and soil affects the overall growth and health of the potato plant. My goal in this project was to understand how salinity affects the growth and health of potato plants. For this project, I took water samples from my dad's field BW and converted it to grams per gallon. Other than testing the control (100% clean water), I tested ½ X BW (0.2479g per gallon), 1 X BW (0.4959g per gallon), 1.5 X BW (0.7438g per gallon), and 2 X BW (0.9918g per gallon).

Throughout the process, I planted, watered, observed and gathered data. Once I shook out the dirt from the roots, it was very visually apparent that the less salt added to the water, the thicker and the healthier the roots looked. The control Set had the longest and strongest roots compared to the roots of Set 4 and Set 5, which were burned because of the salt damage. After testing with a color chart, I saw that the Control set had the darkest leaves, showing that they are the healthiest, and Set 5 had the lightest colored leaves, showing that they were the least healthy. Set 3 had the least amount of tubers, while the Control Set and Set 4 had the most tubers. Control Set and Set 5 had the most amount of stems, while Set 3 had the least amount of stems. Set 3 had the tallest stems, and all the other test groups were very similar in height. Set 2 had the thickest stems while Set 4 had the thinnest stems. The outcome of this investigation supports the need for farmers to annually check and monitor the nutrients and salinity levels of the soil and water in their fields.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature: Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**