



Colorado Science and Engineering Fair

2024 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: Roots of Success: Investigating the Optimal Water Conditions for Corn Root Growth

Finalist's Name: Jaden DePue

School and City: Wray High School, Wray, CO

Sponsor's Name: Danae Knust

Category: Plant Sciences (PLNT)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

Yuma County is the leading corn producer in Colorado. In the last decade the government has shut off water rights due to the increasing concern of low water levels. Therefore, farmers have had to find another way to water their crops consistently. This project is to help find a solution to our increasing demand for water and our shortage of it.

The purpose of this research was to find out how different amounts of water affected corn plants root growth. Over a 3 week period, 60 corn plants were set in a grow lab, 6 variables were tested, 0", 0.5", 0.75", 1", 1.5" and 2". In the beginning test all of the plants received 200 mL of water. Before being watered, the soil was all 0.00% Electrical soil Conductivity (EC). Once being watered and recorded, the plants were left to grow in a grow lab for a week. Once a week was up, the researcher removed all the plants from the grow lab and tested their temperature and EC. Once the researcher had tested everything before being watered, the researcher distributed the water to all the plants with varying amounts of water. After that the researcher tested the temperature and EC. This process continued for 3 weeks. After the third week was up, the researcher pulled all the plants from the soil, washed them, and weighed them. In conclusion, the hypothesis is rejected as the plants that received 1" of water showed the most growth.

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:

3-1-24

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.