



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: Plants built for the future: Testing the effects of different mediums on cost effective hydroponic lettuce growth

Finalist's Name: Abigail.rosenhahn@d11.org

School and City: William J Palmer High School

Sponsor's Name: Nathaniel Lohmann

Category: Earth & Environmental Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

The purpose of this project is to examine how cost-effective wick mediums impact growth in a hydroponic wick system. To make the wick systems, cut the plastic bottle in half so the top can fit in the bottom half. On the top half, drill a small hole in the bottle cap to feed the wick through. After feeding the wick through both ends, add the nutrient solution to the bottom, and the specific medium being used to the top. Then, dig small holes (or drop) into the medium depending on the type, and add the seeds throughout. After this wait until plant growth and measure the pH every three days, using the pH stabilizer to maintain the levels healthy for the medium. The original hypothesis stated that the sand would have the best results and growth. This hypothesis was not supported, because due to low temperatures my plants did not grow. While it wasn't fully supported, I was still able to find that the sand had comparable or superior pH levels and nutrient absorption to the coconut coir (which was the more expensive medium) therefore making it the best alternative for a cost effective system.

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.**