



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: Land v.s. Water: Exploring Plant Cell Pressures in Different Ecosystems.

Finalist's Name: Zander De Jager

School and City: Evergreen High School, Evergreen

Sponsor's Name: Stephanie Seevers

Category: Plant Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

As the global population increases, understanding plant water retention is crucial for food production. This study examined whether aquatic plants develop higher turgor pressure than land-based plants. Green onions were grown in controlled water and sand environments, and their mass was measured before and after a 24-hour water submersion. Results showed only a 4.5% greater mass increase in water-grown plants, with no statistically significant difference between the groups. This suggests that aquatic plants do not necessarily develop stronger turgor pressure. Experimental limitations, such as inconsistencies in growth conditions and sample collection, may have influenced results. Future studies will refine methods to better simulate natural ecosystems and further explore plant water retention mechanisms.

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.**