



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: Rain, Rain, Don't Go Away

Finalist's Name: Asha Thompson

School and City: Limon High School, Limon, Colorado

Sponsor's Name: Becky Thompson

Category: Earth & Environmental Sciences (EAEV)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

Food insecurity is still a worldwide problem that needs to be addressed. Today farmers and ranchers are trying to feed the growing population on less farmland and with less water. Farmers use GMOs and irrigation to help combat the growing human population. What can farmers do if they live in a place where water is a scarce resource?

Using different tilling methods in dryland, semi-arid agriculture crops is the solution that many farmers have. The top three tilling strategies are No-Till, Minimum-Till, and Full-Till. The research in this experiment is to figure out which tilling strategy is the best for dryland, semi-arid agriculture crops. The overall goal of this project is to help farmers find a tilling strategy that helps hold water in crops, leading to higher yields, and eventually end food insecurity.

The researcher's work involved experimentations of water saturation and runoff testing. Samples of topsoil were collected from each tilling strategy. Each sample was sprinkled with one inch of simulated rainfall, and weighed after. The samples were collected for runoff testing.

The researchers' hypothesis was proved partially correct. For example the researcher thought that the Minimum-Till strategy would be the best for both water saturation and runoff testing. After analyzing the data, No-Till did the best on water saturation not far ahead of Full-Till; however, the Minimum-Till strategy did the best when the runoff water was tested, the No-Till was the second best.

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:

Asha Thompson

Date:

2-28-24

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.