



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: Making A Leather Substitute Out of Kombucha SCOBY

Finalist's Name: Ansley Martin

School and City: Challenge School, Denver

Sponsor's Name: Shannon Martin

Category: Engineering (ENGR)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

When making kombucha, a symbiotic culture of bacteria and yeasts(SCOBY) grows on top of the liquid, aiding the fermentation of the beverage. The purpose of the project was to see if this SCOBY could be harvested off the top of the tea, dried, and conditioned into a leather substitute that is vegan, green, and biodegradable. The hypothesis created at the start of the study stated that a batch of kombucha containing a higher amount of sugar would produce a thicker, stronger more flexible leather. This hypothesis can be supported by the results of the project. The average amount of growth between measurements was much higher for the SCOBY with more sugar than the one with less. In the drying and conditioning process, the SCOBY with 66g of sugar withstood handling and movement significantly better than the SCOBY with 16.5g of sugar, and in the testing, the recipe with 66g of sugar was substantially more flexible, stretchy, and movable. The correlation observed is that the amount of sugar added to the tea before growing is very important to the overall sturdiness of the final leather, and the question of whether we can use dried SCOBY to make an adequate substitute for leather is yes, indeed it is possible, and in a commercial setting, may even be ideal.

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.