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: Bacteria

Finalist's Name: Nataly Rojas

School and City: Risley International, Pueblo CO

Sponsor's Name: Yvonne Dowd

Category: Mathematics & Computer Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Bacteria are known to reproduce very rapidly. When bacteria creates colonies they can be seen by the naked human eye. The purpose is to figure out if touching bread affects how much mold grows in a week. This experiment was carried out by taking 2 pieces of bread and touching 1 piece of bread. Photos were taken every single day to see how much mold grew. The data collected was the area of mold on each piece of bread and this was collected by taking a photo and measuring the amount of mold on the bread.

On day 1 there was 0 bacteria for both pieces of bread. On day two there was 4mm2 on the dirty bread. On the clean bread there was 16mm2 of mold. On the third day there was 132mm2 on the clean bread and on the dirty bread there was 40mm2. On the fourth day there was 105mm2 on the clean bread and 24mm2 on the dirty bread. On day 5 there was about 582mm2 on the clean bread and 198mm2 on the dirty bread. On day six there was 600mm2 on the dirty bread and there was 1,198mm2 on the clean bread. On day 7 there was 1065mm2 on the clean bread and on the dirty bread there was about 2029mm2. On the eighth day there was 1391mm2 on the dirty bread and for the clean one there is about 2,300mm2. The error in this experiment could have been the height of which the photos were taken. It may have affected the measurements of the bacteria.

The experiment disproved the hypothesis because the clean bread had more bacteria than the dirty bread. The clean piece of bread had 2,300mm2 of bacteria, while the dirty piece of bread only had 1,391mm2 of bacteria.

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.**