CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

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Project Number

J2115

Project Title

An Analysis of Water Content in Determining the Efficacy of Emollients

Abstract

Objectives/Goals

The goal of this project is to determine the most effective moisturizer by measuring the amount of water loss in each moisturizer. The less water loss in the emollient the more moisture stays on the skin therefore that emollient is the most effective.

Methods/Materials

Gravimetric analysis, balance, a packet of agar flakes (model for human skin), 9 petri dishes, hot plate, latex gloves, wooden stirrers, beaker tongs, 100 mL of distilled water, graduated cylinder, glass stir rod, beaker, pinch mittens, and moisturizer brands (Cetaphil, Nivea, Aveeno, Loreal, Lubriderm, Neutrogena, Olay, and CeraVe)

Results

The result showed that Nivea was the most effective over long periods of time because it had lost the least amount of water over 24 hours and Lubriderm was the most effective over short periods of time because it had lost the least amount of water over 3 hours.

Conclusions/Discussion

The repeated experiment using the most common moisturizers (such as Loreal, Aveeno, Olay, and Nivea) showed that different moisturizers are effective over different time periods. The change in results show that different moisturizers impact the results because of their reactions towards the agar flakes (used as the model for human skin in experiment).

Summary Statement

This experiment was conducted to find out the most effective moisturizer by determining the amount of water loss among them.

Help Received

A chemistry teacher in my school helped us conduct this experiment the first time around so that we could conduct it ourselves like we did the next multiple times. Our science teacher had guided us through this project. A earth science teacher at our school had given us the idea to use agar flakes as our model for