CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)

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Project Number

S0621

Project Title

Phi of Black Tea and Green Tea

Abstract

Objectives

In this experiment, increasing steep times were used to analyze the pH of black tea and green tea. A pH probe was used to record pH.

Methods

Beakers, flask, pipette, hot plate, buffer capsules, tea, pH sensor, temperature probe, pH paper. Measured minutes of steep using stopwatch for 5 different pH measurements of black tea and green tea.

Results

As minutes of steep increased for black tea, the pH measurement decreased - tea became more acidic - from approximately 5.50 at 1 minute to about 5.20 at 5 minutes of steep. As minutes of steep increased for green tea, the pH measurement decreased - tea became more acidic - from approximately 5.80 at 1 minute to about 5.60 at 5 minutes of steep.

Conclusions

Repeated trials with black tea and green tea revealed that both teas became more acidic as the teabag was steeped for a longer amount of time. It is concluded that using a pH sensor and increasing steep times are an effective way of measuring the acidity of black and green tea.

Summary Statement

Using a pH sensor, I measured the pH values of black tea and green tea at 1, 2, 3, 4, and 5 minutes of teabag steep.

Help Received

Except for the buffer solutions, I designed and carried out my experiment by myself. My chemistry teacher helped me by teaching me how to create buffer solutions.