CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
Allison Park; Lucas Salzman

Project Number
S2014

Project Title
The Correlation between the Part of a Banana and the Amount of Potassium It Contains

Abstract

Objectives/Goals
The goal is to determine if there is a correlation between the location of a banana, and the potassium concentration within the location.

Methods/Materials
The materials used were five bananas of the same hand, a Cardy Potassium meter, distilled water, garlic press, standard solution, sampling sheets, cheese cloth, plastic pipette, and scissors.
To test to see if the location had an effect, cross-sections from the tops, middles and bottoms of five bananas were obtained. The interior meat, the exterior meat, and the skin/peel were tested from each of these cross-sections. Using a garlic press to extract the juice, the juice from each of these pieces was soaked onto a sampling strip. The sampling strip was then placed on the meter itself and a reading was taken. The Cardy Potassium meter indicated the potassium concentration in parts per million. The location of the banana where the potassium concentration was tested was altered. Five bananas were tested. Each banana had three cross sections tested. Within each cross-section three areas were also tested. There were total of 45 measurements taken from these different areas of the banana. Each location tested was from a piece of a banana about 1 cm by 1 cm.The measurements were taken of potassium concentrations in portions of the banana from the interior, exterior, and skin of cross-sections that came from the top, middle, and bottom of five bananas.

Results
There was an overall mean of 3300 ppm in the interior meat, in comparison to the 2900 ppm in the exterior meat, and 2400 ppm in the skin. The average deviation of the interiors was 200 ppm, the exteriors contained an average deviation of 240 ppm, and the skin contianed an average deviation of 180 ppm. In the top portions of the bananas, there was an average of 2900 ppm, compared to 2700 ppm in the middle and 2800 ppm on the bottom.

Conclusions/Discussion
It was found that location did have an effect on the potassium concentration. It was found that the highest potassium concentration lied in the interior meat of the bananas. This study indicated that the outside of the banana compared with the inside, had an effect on potassium concentration, rather than the distance from the tip of the banana.

Summary Statement
This project determines which specific part of the banana has the highest concentration of potassium.

Help Received