CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)

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Project Number

J1615

Project Title

Is It Ripe Yet?

Abstract

Objectives/Goals

The purpose of this project was to find the optimal conditions for fruit ripening, and to determine which technique is the most accurate, as well as efficient, to measure the ripeness of the fruit.

Methods/Materials

Thirty-four bananas and twenty mangos were tested in different conditions with different variables such as light, dark, warm, cold, and in/out of paper or plastic bag. Also, there were three methods used to determine the ripeness of each fruit. These three techniques are the #squeeze test# using the indentometer to measure the amount of fore it takes to indent the fruit in Newtons, daily weight measurements, and changes in the color of fruit as assessed by digital photos and Red/Green/Blue assessment using a photo analysis program.

Results

The most optimal condition for fruit ripening is the multiple fruits in a paper bag at room temperature. The most efficient way to measure the ripeness of fruits is the #squeeze test# using the indentometer.

Conclusions/Discussion

Multiple fruit in a paper bag at room temperature proved to be the most optimal condition for fruit ripening. The paper bag concentrates ethylene gas, the main factor in inducing enzymes for fruit ripening, because it is a larger molecule. Oxygen is able to enter the bag more easily because it is a smaller molecule. The oxygen acts as a co-factor with ethylene gas in enzyme production. These enzymes, which are proteins, cause the fruit to ripen (and eventually over ripen!). The squeeze test (measured by the indentometer) was the most efficient technique used to measure the ripeness of each fruit.

Summary Statement

The purpose of this project was to test fruits and see what the optimal condition for fruit ripening is and which technique is most efficient for measuring the ripeness of the fruits.

Help Received

Mother helped edit report; Father helped build "indentometer and edit graphs; Mother helped put together poster