Sugar Content of Fruit using a Refractometer

Abstract

In this project the sugar content of fruit was investigated. It was hypothesized that the
sugar content of each sample fruit would increase as it ripened over the study period. The fruit samples examined were bananas, strawberries, red grapes, and green grapes. A refractometer was used to measure the sugar content of each sample fruit throughout the experiment. Results showed that the sugar content of each sample fruit did increase as the fruit samples ripened over a five day period.

Understanding the ripening process helps farmers know when to pick
different fruits and grocery stores understand the shelf life of their fruit products. Scientists can also use sugar content information when developing new kinds of foods. Knowing what is in our foods helps each of us make healthy decisions.

Question / Hypothesis

Question: Does the sugar content of fruit increase during the ripening process?

Hypothesis: Ripe fruits have a higher sugar content than an unripe fruits

Backgound Research

Measurement: How is the sugar content of fruit measured? Refractometers measure sugar content.

Unit of measurement: Brix, the percentage of sugar found in a sample.

Materials

<u>Samples</u>

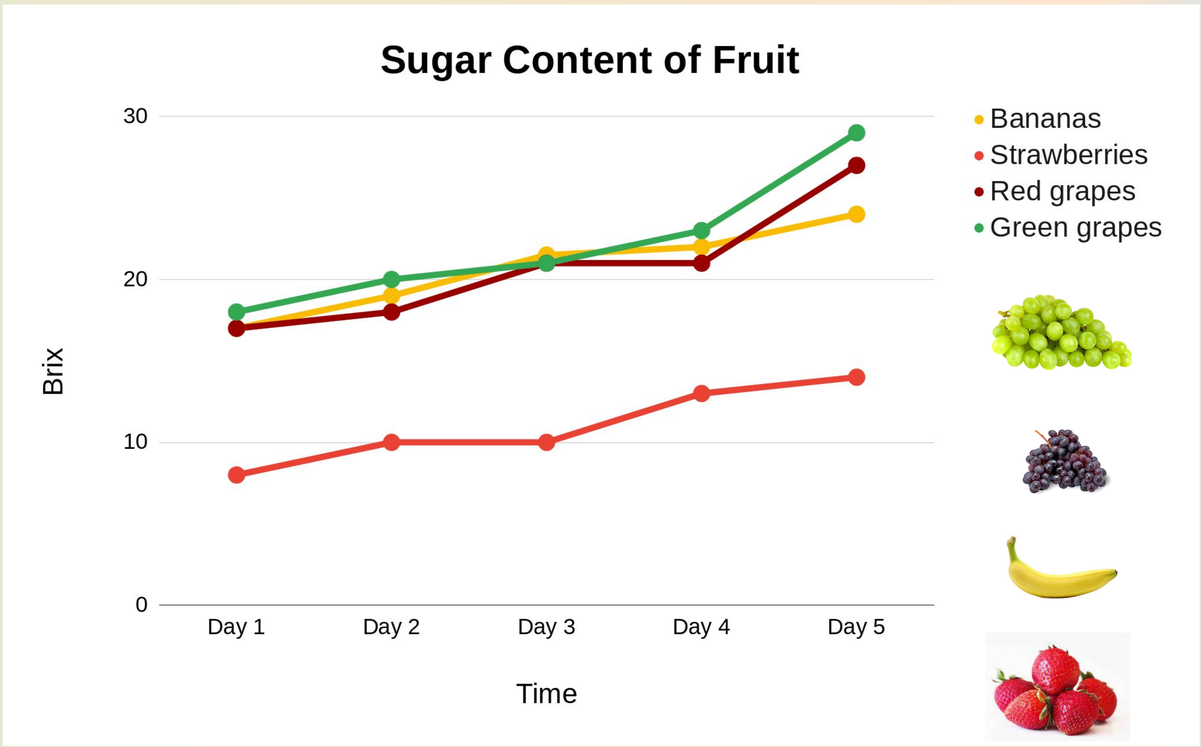
Bananas
Strawberries
Green grapes
Red grapes

<u>Measurement Device</u>
Refractometer

Procedure

1. Mashed up fruit sample
2. Inserted sample into the refractometer
3. Measured the reading
4. Cleaned out the Refractometer between each sample measurement

Results



Conclusion

- Sugar content of each fruit increased during the ripening process

- Of the sample fruits, the strawberries had the lowest sugar content

- Of the sample fruits, the green and red grapes had the highest sugar content

<u>Future Study</u>
Why is the sugar content of fruit important?

Growers: need to understand the sugar content of fruit to know when to pick fruit crops

Food stores: need to understand the sugar content of fruit to know when the fruit is fresh and also when it is going to spoil

New developments in food: Understanding the properties of different fruits helps scientists create new food products

Personal Health: Fruit has natural sugar. Some people need to know how much sugar is in each fruit