Name(s)

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Project Number

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Project Title

The Effect of Temperature on the Sucrose Content of Grapes

Abstract

Objectives/Goals
To see if temperature has an effect on the sugar content of grapes after they are picked.

Methods/Materials
I exposed five different types of grapes to three different temperatures and measured their sugar content using a refractometer on the Brix scale. For this experiment, I needed a refractometer, a thermometer, and 60 of each type of the following grapes: green, red, black, organic green and organic red. I sorted the grapes into the three temperature groups, cut the grape in half, then put the juice from the grape on the inside of the refractometer and closed the lid. I then looked through the refractometer to read the "sugar weight" of the grape and recorded it in a lab notebook to later analyze in excel.

Results
When temperature increases, the sugar content of grapes increases. Conversely, when temperature decreases, the sugar content of grapes decreases.

Conclusions/Discussion
The data support my hypothesis that if gapes are exposed to higher temperatures, then their sucrose levels will increase. This research can be extremely beneficial to diabetics because it could lower the risk of having their blood sugar spike or crash unexpectedly by being able to predict their blood sugar levels by knowing the relative sugar content of their fruit based on temperature. In addition, it can help athletes because before a work-out, they need foods that are lower on the glycemic index to sustain them, and after the work-out they need foods that are higher on the glycemic index to help speed up recovery of their muscles. Both diabetics and athletes can choose which temperature to have their fruit at so they can alter the sugar levels of that fruit to ultimately benefit them.

Summary Statement

How temperature has an effect on the sucrose content of grapes.

Help Received

Father bought refractometer for me.