CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
J0518

Project Title
Measuring CO(2) with Kernels of Millet

Abstract

Objectives/Goals
My project was to determine what temperaure has the most down-up motions of kernels of millets. I anticipated the down-up millet motion would have more frequency as the temperature of the carbonated water decreases.

Methods/Materials
12 Lemon Lime Seltzer sodas with 1C, 6C, and 22C temperature
3 beakers
36 kernels of mille
A thermometer
A stop watch

Results
Throughout these experiments there are three results useful in our practical life. First, you know which temperature is the best for drinking carbonated water to feel fresh. Second, you can figure out which material is a good conductor or a poor conductor. Finally, you can determine the roughness of any materials that can be very hard with your eyes.

Conclusions/Discussion
In my data obtained from the three different temperatures which are 1C, 6C, and 22C, the 6C carbonated water has shown the most frequent down-up motions of millets. By looking at the data, the 6C carbonated water has the most active action of carbon dioxide than the others. I guess the reason is that the optimal heat exchange between one glass of 6C carbonated water and the air at the room temperature (25C) contributes to the greatest emission of carbon dioxide in the three cases.

Instead of using kernels of millet, I used a metal bead and a marble to see which one would have the most carbon dioxide produce on its surface. In the beginning, a large amount of carbon dioxide sticks more to the metal bead, but after a while, the metal bead produces less amount of carbon dioxide than at the beginning and on the surface of marble.

In another experiment I found that among plastic bead, metal bead, millet, and marble, the plastic bead had the most long-lasting down-up motions.

I also sanded a kernel of millet to make it rough, and put both of the harsh and original kernels of millet in the carbonated water. As a result, the rough one has more bubbles at the surface than the original one.

Summary Statement
I found that the 6C temperature carbonated water has the best activation of carbon dioxide or the most down-up motions of millets.

Help Received