Straws

Abstract

Thank you for listening till the end. This project has been enjoyable, and now I have hundreds of straws at my house. My project is "What brand of paper straw proves to be most durable in carbonated drinks?".

To make this project happen, I first begin by laying out all the materials: three cups, three straws, sparkling water, and a timer. Second, I pour half a cup of sparkling water into the measuring cup and pour it into a clear cup. Then I repeat for two other cups. After that, I drop each straw into its corresponding cup at the same time. (Obtain help from a partner) I begin the timer. Check each straw every 2 minutes to observe its durability status. Continue this process until one straw is no longer durable. After taking the straw out, I did a scratch test to see if the paper was still sticking to the straw or falling off.

Then compare the results. After doing my results, Gusto is less durable, and it did not hold up as expected. On the other hand, Naturalik came in first and held up very well, and Weemium is better than Gusto but worse than Naturalik.

In conclusion, my hypothesis was incorrect, and Gusto was not the most durable. Naturalik proved to be the most durable of the 3. Weemium was as durable as Gusto, but just a bit more durable. Towards the end of this experiment, I did a scratch test on all of the straws. During this test, Gusto easily shredded apart, while Weemium proved more durable in the scratch test, only failing apart slightly. On the other hand, Naturalik barely fell apart during this test, proving to be the best.

Hypothesis

I hypothesized that GUSTO straws are going to last longer in carbonated drinks over Naturalik and Weemium because, GUSTO is a multi layer straw and it's designed to be sturdy and soggyness resistant. The other brands will most likely be very good too because they have many materials in common, like Polyethylene and similar water resistant coatings. However these other brands do not focus on making the straws soggy resistant, supporting my hypothesis that GUSTO will prove to be more durable.

Research

Paper straws are made from paper which is rolled up and is sticked together with adhesives. The straws are also often made with a water resistant coating around it. The coating that is put around the straw is often made with polyethylene and acrylic resin, the same materials used to make plastic bags. The only downside about paper straws is that the manufacturing process itself can have environmental implications.

Work cited

https://www.hbfuller.com/

https://www.usatoday.com/

https://phys.org/

What brand of paper straw proves to be most durable in carbonated drinks ?

by: Fredy Torres

Materials

1. The 3 brands of paper straws (Naturalik, Gusto, and Weemium)
2. A liter of Sparkling water
1. Measuring cup
2. Timer

Procedures

1. Begin by laying out all the materials, 3 cups, 3 straws, sparkling water, and timer.
2. Pour half a cup of sparkling water into the measuring cup and pour into a clear cup.
3. Repeat for two other cups.
4. Drop each straw into its corresponding cup at the same time. (Obtain help from a partner)
5. Begin timer.
6. Check each straw every 2 minutes to observe each straw's durability status.
7. Continue this process until one straw is no longer durable.
8. Then compare end results.

Key words

1. Paper straw - a thin tube of paper that is used to suck a drink into the mouth.
2. Carbonated - effervescent on account or containing dissolved carbon dioxide.
3. Adhesive - a substance for sticking objects or materials together.
4. Water resistant- able to resist the penetration of water but not entirely.

Variables

Dependent variables: results of straws

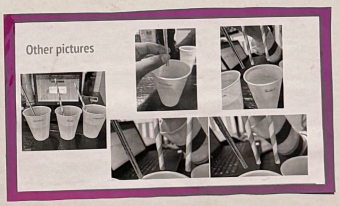
Independent variables : time, cups, liquid in cup.

Data

Weemium has bubbles sticking to it Gusto has a decent amount as well. However, Naturalik has zero bubbles built up on it. After our first 2 minutes I retrieved all straws to check for durability. Naturalik proved to be most durable in the first round while Gusto and Weemium were weakening. In the second round, in the 4th minute, Gusto was the most flimsy while Weemium was still bearing durability. Naturalik on the other hand was still firm and extremely durable. In 3rd round, 6th minute, Naturalik was beginning to lose durability and Gusto was close to losing durability while Weemium had slightly more than Gusto and much less durability than Naturalik. Fourth round, 8th minute, Naturalik still consistent with its 3rd round results. Finally on their 5th minute Weemium and Gusto, easily bent and had several zero durability On the 5th round, 10th minute, Naturalik held its durability while Gusto lost it entirely. Weemium fell in the middle of them both. After doing a scratch test on all the straws at the end of the 5th round, Gusto began to fall apart easily. Weemium was not as bad, but Naturalik had the most durability even after the scratch test.

Time	Naturalik	Gusto	Weemium
2	strong	strong	strong
4	strong	weakening	weakening
6	strong	weak	weakening
8	weakening	dissolving	dissolving
10	very weak	dissolved	dissolved

Other pictures



Results

As a result, Naturalik came on top, proving to be the most durable among the three. I was very surprised that it was the best because in my research, all signs pointed to Gusto being the best. Which did not end up happening. It turned out to be the worst and lasted the least. Weemuim was neither good nor bad; it was really in the middle, but still didn't last as long as Naturalik, but lasted longer than Gusto.

Conclusion

In conclusion my hypothesis was incorrect and Gusto was not the most durable. Naturalik proved to be the most durable between the 3. Weemium was as durable as Gusto,but just a bit more durable. Towards the end of this experiment I did a scratch test on all of the straws. During this test, Gusto easily shredded apart while Weemium proved more durable in the scratch test only failing apart slightly. On the other hand, Naturalik barely fell apart during this test, proving to be the best.