BITTER TASTE TEST

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Background:

- Test is done with a chemical PTC (Phenylthiocarbamide), Thiourea, Sodium Benzoate.
- Taste is caused by a single gene that codes a taste receptor on the tongue.
- Papillae contains multiple taste buds that are filled with gustatory cells.
- Nerves carry signals from the gustatory cells to the brain, which results in the ability to discern bitter taste as a mechanism to prevent early humans from eating poisonous plants.
- PTC sensitivity is often used as an example of a simple Mendelian Trait dominant inheritance.
- PTC gene covers about 85% of the total influence

Abstract:

The Bitter Taste Test Project we hypothesize that 50% of the people we tested will have the bitter taste, as their taste buds are more sensitive to become a super taste tester.

In our project we had 18 participants taste three different taste test strips to see if they have the bitter taste. Our early people tasted different types of herbs , and plants to determined if it was poisonous by the bitterness taste. When Testing out participants it was interesting seeing the reactions to the test strip and hearing what they tasted was even more interesting. There were different tastes from a rubber band, to a hot toothpick, dental floss and I even had one participants taste aluminum which was very odd.

We recently found out that telling participants what they should taste affected the data. One main reason that causes the people to taste or not taste the bitterness is the taste buds. Some people have sensitive taste buds which makes them be able to taste the bitterness. In conclusion 88% of the people tasted the PTC test, 100% of people tasted Thiourea test, and 77% of people tasted the Sodium Benzoate.

Question?

How many people will have the bitter taste?

Taken from Microsoft jpg

Hypothesis

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We hypothesize that 50% of the people tested will have the bitter taste, because their taste buds are more sensitive to become a super taste tester.

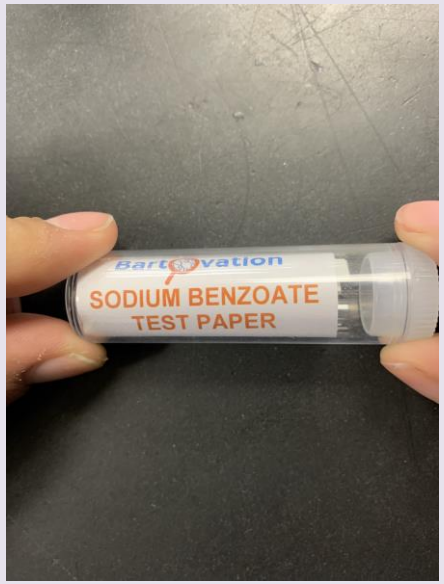
Materials:

Super- Taster Genetic Test Kit

Control Paper

PTC Test Paper

Thiourea Test Paper



Sodium Benzoate Test Paper

Gloves

Photos taken by O.Lowe - exhibitor

PROCEDURES:

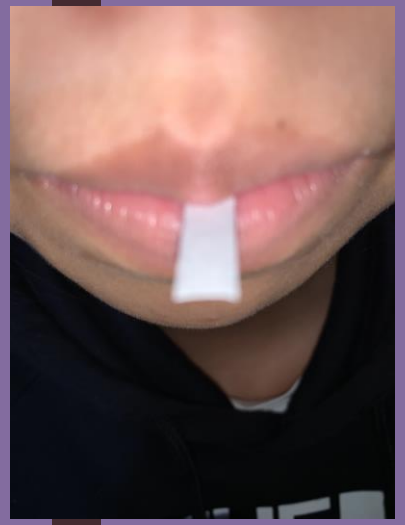
Step 1

Step 2

Step 3

Step 4

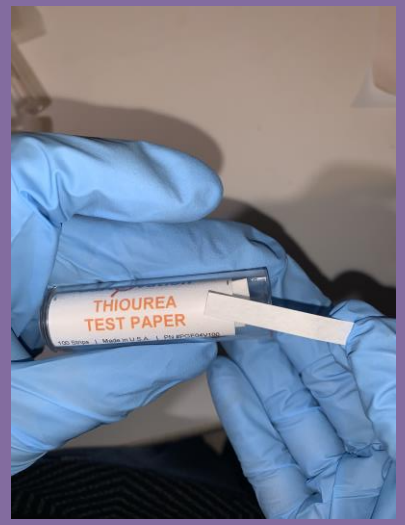
Photos taken by O.Lowe - exhibitor



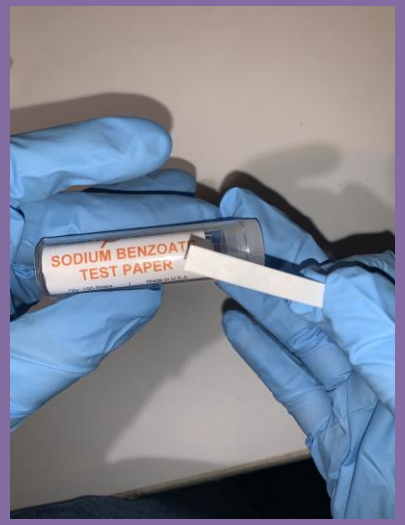
Step 5

Step 6

Step 7



Step 8



Step 9

Step 10

Data

Participants	Control	PTC	Thiourea	Sodium Benzoate
Subject 1	No Taste	Taste -Medicine	Taste-Very Bitter	Taste-Sweet
Subject 2	No Taste	Taste-Hand Sanitizer	Taste-Bitter	Taste-Sweet
Subject 3	No Taste	Taste-Bitter	Taste-Very Bitter	No Taste
Subject 4	No Taste	Taste-Bitter	Taste-Bitter	Taste-Sweet
Subject 5	No Taste	Taste-Bitter	Taste-Very Bitter	Taste-Salty
Subject 6	No Taste	Taste-Mild Bitter	Taste-Burn	No Taste
Subject 7	No Taste	Taste-Mild Bitter	Taste-Bitter	Taste-Salty
Subject 8	No Taste	Taste-Salty/Bitter	Taste-Very Bitter	Taste-Sweet
Subject 9	No Taste	Taste-Bitter	Taste-Very Bitter	Taste-Aluminum
Subject 10	No Taste	No Taste	Taste-Mild Bitter	No Taste
Subject 11	No Taste	Taste-Bitter	Taste-Very Bitter	Taste-Bitter
Subject 12	No Taste	Taste-Bitter	Taste-Bitter	Taste-Mild Salty
Subject 13	No Taste	Taste-Bitter	Taste-Very Bitter	Taste-Rubber Band
Subject 14	No Taste	Taste-Bitter	Taste-Very Bitter	Taste-Dental Floss
Subject 15	No Taste	Taste-Bitter	Taste-Very Bitter	No Taste
Subject 16	No Taste	No Taste	Taste-Bitter	Taste-Hot tooth-pick
Subject 17	No Taste	Taste-Bitter	Taste-Bitter	Taste-Rubber band
Subject 18	No Taste	Taste-Bitter	Taste-Bitter	Taste-Bitter

Taken from Microsoft jpg


Bitter Taste Test
20
15
10
5
0
Control
PTC
Thiorea
Sodium Benzaoate
Participants

Conclusion:

In the beginning of this experiment we hypothesized that 50% of the people would have the bitter taste. We found that 88% of the participants tasted the PTC test, 100% of the people tasted the Thiourea test, and 77% of the people tasted the sodium benzoate test. Therefore, our predictions of this experiment were false.

Taken from Microsoft jpg

Future Directions:

In the future we would like to do this with food such as Brussel sprouts, kale, broccoli and cauliflower. Bitterness is in many vegetables and Fruits. We would like to find out how many people are sensitive to the bitter test with these vegetables. Another thing we would like to see is if the texture of these food affect why people do not like them. Overall, this can also help us with some survival skills.

Taken from Microsoft jpg