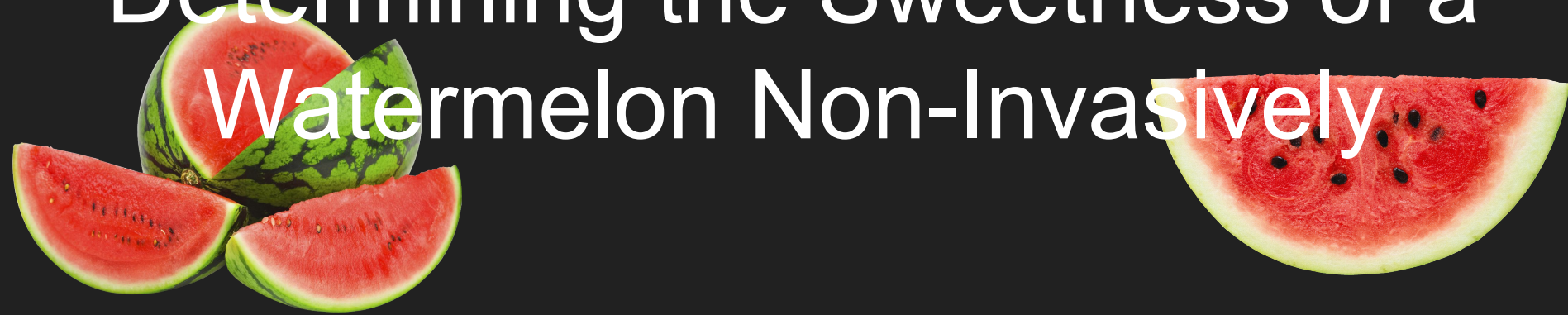


Determining the Sweetness of a Watermelon Non-Invasively



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Mentor: Michael Swift

How do you pick the good fruit?



There are unscientific ways of doing this

People try all types of techniques: tap, shake,
look at color

Watermelons would be a good model because we
remember our parents tapping the watermelons
to see if they are good

Problem & Solution

Problem: unable to determine the sweetness of a watermelon without getting into it

Scientific solution: Quantitatively analyze the colors and sounds of each individual watermelon, then measure its sweetness to find a relationship.

Plan of Action



Photographs & microphone recordings



Measure Sweetness

Find relationship between color and sweetness

Procedures

1. First we would take our watermelon and take controlled pictures of it
2. Then my partner and I ran the pictures of the watermelon into a coding software
3. The software gave us the individual colors of the picture and their relative quantities
4. Then we jotted down our results into our notes
5. After running the program we would cut into the watermelon
6. My partner and I would then get our refractometer and test it with water to make sure it was calibrated (at zero BRIX for water)
7. Next was measuring the BRIX of our watermelon
8. We would smash the watermelon to get juice piled up for our transfer pipette
9. Deposit a couple of drops into the refractometer (2-4)
10. Hold up to light and take measurement with three different samples
11. Record the measurements
12. We would repeat steps 6-11, for each watermelon.

Brix is a measure of sweetness

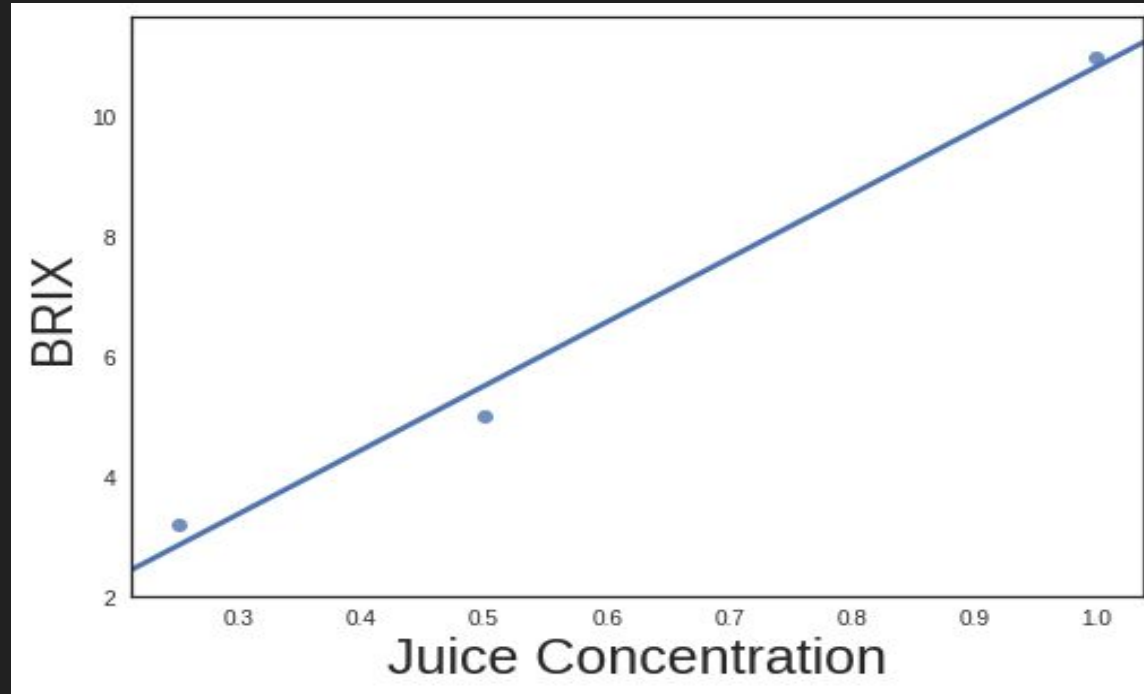
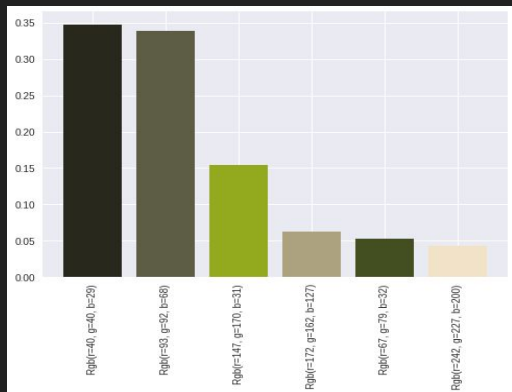


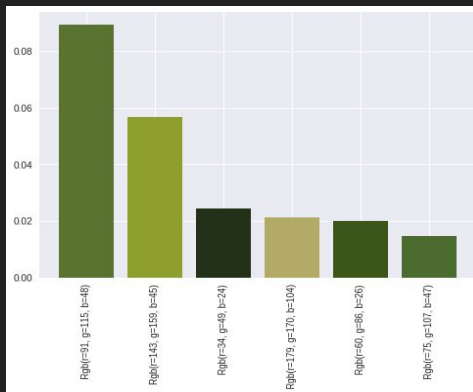
Figure 1: We measured how accurate our refractometer was by systematically diluting Cranberry juice with water, and measuring the BRIX.

Watermelons have different color content

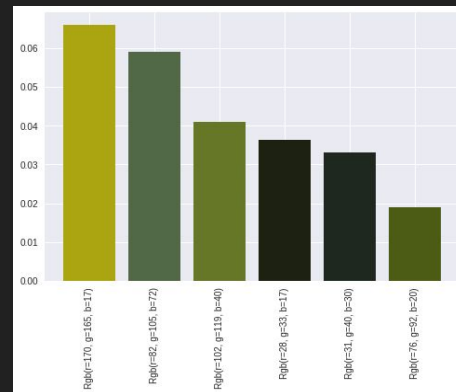
Watermelon 4



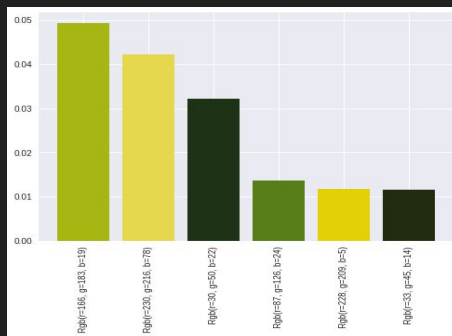
Watermelon 6



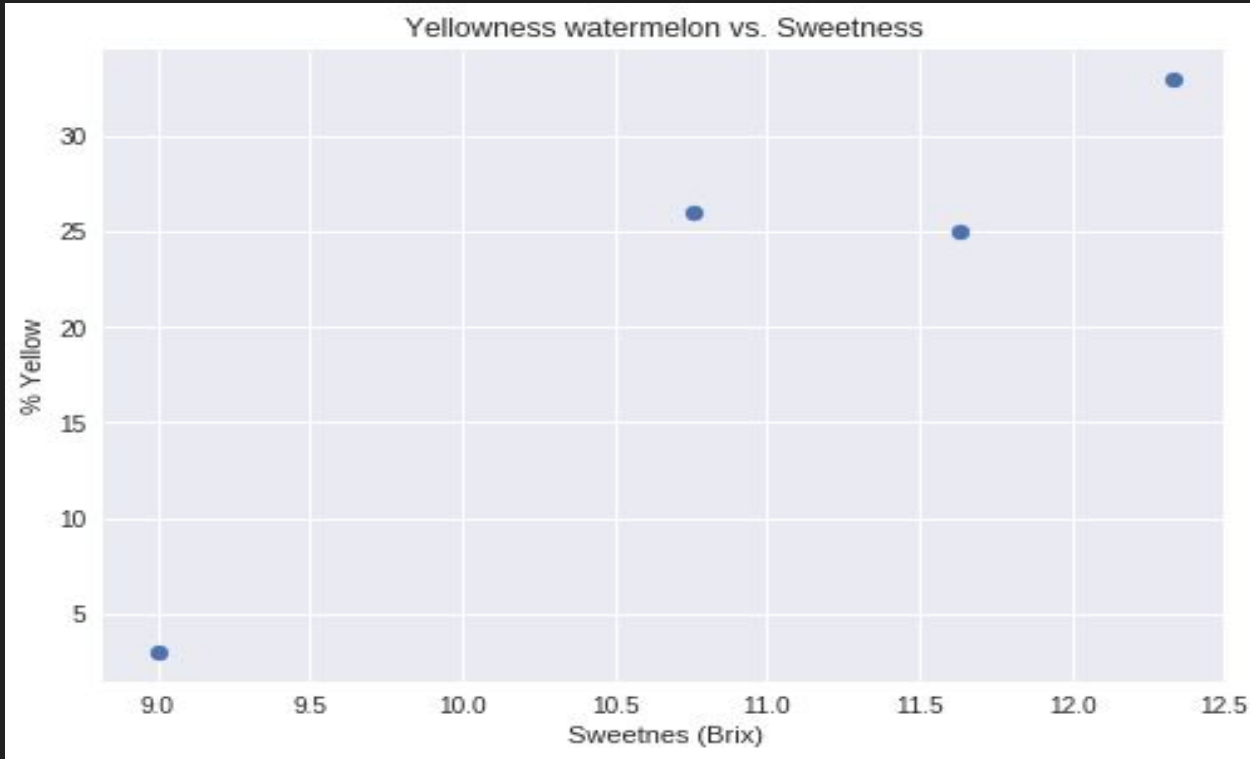
Watermelon 7



Watermelon 5



Brix is a measure of sweetness



Future Directions

- Do more test with many more watermelons
- Add sound to test the watermolens
- Make a app to help everyone in the world





rep1



File Edit Select View Transport Tracks Generate Effect Analyze Tools Help

Transport controls: Play, Stop, Previous, Next, Record.

Editing tools: Insert, Delete, Erase, Undo, Redo, Copy, Paste, Split, Merge, Solo, Mute, Volume, Pan.

Monitoring: Click to Start Monitoring.

Volume sliders: -54, -48, -42, -36, -30, -24, -18, -12, -6, 0.

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