SENSORY EVALUATION OF FOOD
Review Influences on Food Preferences

• Physical
• Psychological
• Cultural
• Environmental
Senses & Food

- Appearance
- Texture
- Hearing
- Flavor:
  - Taste
  - Aroma

Imagine if any one of these experiences was missing.

Would a chip be the same if you didn’t hear it crunch in your mouth?
Sensory Evaluation

- The human analysis of the taste, smell, sound, feel, and appearance of a food

- Used by food scientists to assess how consumers will respond to new products
How we experience food

- Basic taste: Sweet, Sour, Salty, Bitter, Umami, Spicy, Astringent
- Taste: Fullness / Thickness, Aroma
- Flavor
- Palatability: Texture, Temperature, Color / Glossiness, Shape, Sound
- Food Acceptability: Environment (Atmosphere and humidity), Habituation, Social situation, Culture, Personal condition (Mood and Health)
Taste Test Panels

- A **taste test panel** evaluates food flavor, texture, appearance, and aroma
  - *Trained panelists* discern **subtle sensory differences**, as when developing new products
Taste Test Panels

- **Consumer test panels** help determine products the average consumer will prefer.

- These untrained panelists represent the buying public by:
  - comparing a new product to one on the market
  - evaluating new types of products
Taste Test Panels

- Consumer test panels

![Image of taste test panel]

- Factors that could sway results must be controlled
Control of Influencing Factors

- Influence from other testers
  - Products may be tested by one person at a time or by testers in separate booths to prevent seeing facial expressions
  - Panelists receive strict instructions to remain quiet during the evaluation
Control of Influencing Factors

- Environmental factors
  - Light levels in testing rooms are the same
  - Tests take place in a room separate from the food preparation room
  - Testers sip warm water between each sample taste to prevent lingering flavors
  - All product samples are served at the same temperature
Control of Influencing Factors

- Psychological biases
  - Scientists identify samples with 3-digit codes
    - prevent a bias for the lowest number (1) and the letter that starts the alphabet (A)
  - Research indicates tasters can reliably judge only 4 or 5 samples at one time
Product Testing Evaluation Form

Participants fill out an evaluation form

Usually using 1 of the following formats:

**Hedonic Scale:**
- Numerical scoring system form that allows the ranking of the food items

**Descriptive Array:**
- Verbal label form that describes various attributes of each food item
Product Testing Evaluation Form

Universal Form or Smile Scale

- Universal form that uses simple images to convey how a person feels about the food

Discrimination or difference tests

- Used to answer whether there are any differences between two types of products.

Example:

- When a food company uses an alternate ingredient to include in a food product, they want to confirm that consumers cannot tell the difference between the original product and the newly formulated product
TRIANGLE SENSORY TEST: OREO COOKIES

 Discrimination Test
Procedure

- Remain quiet through the entire process
- You will each be given three cookies
- Taste the cookies from **left to right**
- Take a **sip of water** between each sample
- Mark which of the cookies is **different from the other two**. Only one cookie out of the three should be marked as being different.
- It is acceptable to go back and forth and re-taste samples to determine the different cookie.
  - Do no eat the whole cookie all at once, but wait until the test is over before eating the entire cookie sample.
  - If you cannot tell which cookie is different, try to guess.
- Use the provided sensory ballot as a guide
Discussion Questions:

1. Were you able to tell a difference between the samples? If so, which sample did you choose as the different sample?

2. Were you correct?

3. If you were able to detect a difference, what sort of sensory differences were you able to perceive between the two cookies?

4. Which sample did the majority of the class choose as the different sample?

5. Were they correct? Was this statistically significant?

6. Do you think a food company would find these results interesting?