

# UNLOCKING FLAVOR SECRETS: GUIDELINES FOR FOOD AND BEVERAGE SENSORY ANALYSIS

Sensory testing your food or beverage innovations helps ensure you satisfy taste expectations and achieve in-market success. Our technical team outlined guidelines you can use to evaluate your next new formulation.



## THE IMPORTANCE OF A SENSORY ANALYSIS FRAMEWORK

**FOR VALID AND CONSISTENT SENSORY ANALYSIS RESULTS, TRY TO IMPLEMENT THE FOLLOWING CONDITIONS FOR EACH FOOD OR BEVERAGE SENSORY TEST:**

1. An odor-neutral, clean, quiet environment
2. A room with standardized lighting and temperature
3. Utensils, plates, cups, and trays that are white or colorless
4. Individual tasting spaces for evaluators
5. Randomized product codes for each food or beverage sample
6. Randomized tasting order for multiple sample evaluations
7. Standardized evaluation metrics for each sample



## CONDUCTING A SENSORY ANALYSIS

**THE SENSORY TESTING PROCESS BEGINS BY DEFINING WHAT YOU WANT TO LEARN FROM THE TEST. WITH YOUR OBJECTIVE DEFINED, YOU CAN PROCEED WITH THE FOLLOWING STEPS:**



1. Choose the Appropriate Sensory Test
2. Select Your Sensory Panelists
3. Prepare the Samples
4. Conduct the Sensory Test
5. Analyze the Data
6. Determine Next Actions

## YOUR SENSORY ASSESSORS

**THE PEOPLE PARTICIPATING IN YOUR SENSORY ANALYSIS CAN RANGE FROM “NEWBIES” TO EXPERTS, COLLEAGUES, AND CONSUMERS. BE SURE TO SCREEN ALL ASSESSORS BEFORE THE SENSORY TEST TO DETERMINE:**

1. Familiarity with the food or beverage evaluated
2. Allergies or sensitivities to ingredients that could be present in the sample
3. Sensory disabilities such as color blindness, anosmia, or ageusia
4. Current health status for conditions like colds or sore throats that would affect the assessors’ ability to smell or taste

**YOUR PANELISTS CAN BE:**

1. **“naïve,”** meeting minimal criteria to participate in the test
2. **“initiated”** with some experience in sensory evaluations
3. **“selected”** based on their ability to perform a particular sensory test
4. **“expert”** based on demonstrated sensitivity or training and ability to consistently and repeatedly assess foods or beverages



## TYPES OF SENSORY ANALYSIS

### DISCRIMINATION (DIFFERENCE) SENSORY TESTS

If you’re making an ingredient substitution, a process change, or striving to emulate an in-market product, discrimination testing helps determine if differences are perceptible. Types of differences tests include:

- Triangle Test
- Duo-Trio Tests
- Paired Comparison Test

### AFFECTIVE (ACCEPTANCE OR PREFERENCE) SENSORY TESTS

Affective testing is helpful as you move from concept to benchtop to prove your idea is desirable. The methods also offer valuable insights about the acceptability of your food or beverage innovation during scale-up, with reformulations, or for shelf-life testing. Affective test methods include:

- Paired Preference Test
- Ranking Test
- Hedonic Rating Test

### DESCRIPTIVE SENSORY TESTS

When you want details about specific differences and attribute intensity, a descriptive test can produce a comprehensive profile of your food or beverage innovation. Descriptive tests are often part of quality control initiatives like storage stability or minimum shelf life. Unlike difference tests, descriptive tests require qualified assessors, usually between three and 12, to produce statistically reliable results. Descriptive sensory tests include:

- Simple Descriptive Test
- Conventional Profiling
- Check All That Apply (CATA) Test

### TECHNOLOGY AND SENSORY ANALYSIS

Even trained sensory panelists have subjective biases that can affect their evaluation of food and beverage samples. Technological advancements now allow formulators to pair sensory analysis with more objective techniques such as:

- Spectroscopy
- Artificial Senses
- Biometric Measurements
- Virtual and Augmented Reality Techniques

For more details about the types of tests, please visit our [blog](#)!