Learning activity 2

Sensory Evaluation for New Food Products

In the research and development of food, sensory evaluation is carried out to understand the food and food market.

There are various methods of sensory evaluation. In this exercise, students will learn the principles of two methods:

* Quantitative Descriptive Analysis (QDA)
* Paired Comparison Test

**Method**

1. Students are divided into groups and will create a new food product (e.g. cookie, muffin, sandwich) in class.
2. The product is then exchanged for sensory evaluation among groups (Quantitative Descriptive Test).
3. Students discuss the areas for improvement.
4. Students modify the product and make the product again.
5. The product is then exchanged for sensory evaluation again. This time, both the original and modified products are to be evaluated to see if customers can notice the changes (Paired Comparison Test).

***Quantitative Descriptive Analysis (QDA)***

Panel of QDA is usually composed of 8 – 15 of experienced panelists. Product evaluations are performed by each panelist individually, usually in isolated booths. Standard sensory practices such as sample coding, booth lighting, expectorating and rinsing between samples are used.

A line anchored with words generated by the panel is used. The resulting data can be analysed statistically. QDA may be used to describe the sensory sensations associated with a product from initial visual assessment to aftertaste, or to focus on a narrow range of attributes such as texture descriptors.

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**Sensory Evaluation Ballot** **for** **Quantitative Descriptive Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Evaluate each sensory attribute and put a mark on each line: | | Sample number: \_\_\_\_\_\_\_\_\_\_ | |
|  |  | |  |
| Example | Mark here to indicate degree of crispness. | |  |
| a) | Crispy | |  |
|  |  | |  |
|  |  | |  |
|  | Not at all | | Very |
| 1. Appearance |  | |  |
| a) | Paleness | |  |
|  |  | |  |
|  |  | |  |
|  | Weak | | Strong |
|  |  | |  |
| b) | Greasy | |  |
|  |  | |  |
|  |  | |  |
|  | Thin | | Thick |
| 2. Texture (mouthfeel) |  | |  |
| a) | Crumbly | |  |
|  |  | |  |
|  |  | |  |
|  | Not at all | | Very |
|  |  | |  |
| b) | Soggy | |  |
|  |  | |  |
|  |  | |  |
|  | Not at all | | Very |
| 3. Taste |  | |  |
| a) | Buttery | |  |
|  |  | |  |
|  |  | |  |
|  | Not at all | | Very |
|  |  | |  |
| b) | Sweet | |  |
|  |  | |  |
|  |  | |  |
|  | Not at all | | Very |

***Paired Comparison Test***

Paired comparison test is a type of discrimination test. The researcher wants to determine whether the two samples differ in a specified dimension, such as sweetness, yellowness, crispness. The two samples are presented to the panelist simultaneously and the panelist is asked to identify the sample that is higher in the specified sensory attribute.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Paired Comparison Score Sheet**  Please rinse your mouth with water before starting. There are two samples for you to evaluate. Taste each of the coded samples in the sequence presented, from left to right. Take the entire sample in your mouth. NO RETASTING. Are the samples the same or different? Circle the corresponding word. Rinse with water between samples and expectorate all samples and water. Then proceed to the next set and repeat the tasting sequence.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Sample no. |  | Sample no. |  |  |  |  |  | |  |  |  |  |  | Same |  | Different |  | |

Reference:

Lawless, H. T., & Heymann, H. (2010). *Sensory evaluation of food: Principles and practices*. New York: Springer.

SENSORY DESCRIPTORS (Tasting words)

We use our senses to evaluate what we eat, so s**ensory descriptors** are words for describing the appearance, taste and texture of food.

The following word bank gives examples of words used for food tastings. The list is not exhaustive, add your own words to the list. Some words fit under more than one heading.

|  |  |  |
| --- | --- | --- |
| SENSORY DESCRIPTORS | | |
| **Appearance** (Looks) – colour, aesthetics | **Texture** (Mouthfeel) – how food and drink feels in your mouth | **Taste, flavour and smell** |
| Appetising | Airy Lumpy | Acid |
| Attractive | Brittle Mushy | Bitter |
| Boring | Chewy Powdery | Bland |
| Bright | Cold Rubbery | Burnt |
| Clear | Crispy Slimy | Creamy |
| Cold | Crumbly Smooth | Dry |
| Colourful | Crunchy Soft | Fatty |
| Crumbly | Dry Soggy | Fishy |
| Dry | Fine Springy | Fruity |
| Dull | Firm Sticky | Herby |
| Fattening | Fizzy Stiff | Old |
| Fresh | Flaky Stringy | Peppery |
| Fruity | Foamy Tender | Salty |
| Glowing | Greasy Thick | Sharp |
| Greasy | Gritty Thin | Sickly |
| Healthy | Hard Tough | Smoky |
| Hot | Hot Watery | Soggy |
| Moist | Juicy Warm | Sour |
| Mouth-watering |  | Spicy |
| Smooth |  | Stale |
| Soggy |  | Sweet |
| Tasty |  | Watery |
|  |  | Wet |
|  |  | Tasteless |
|  |  | Tasty |
|  |  | Undercooked |