

*Module 1. Sensory evaluation, importance, application and terminology***Lesson 2****FACTORS AFFECTING FOOD ACCEPTANCE AND TERMINOLOGY RELATED TO SENSORY EVALUATION****2.0 Food Acceptance****2.1 Introduction**

Acceptance of any Dairy/food products is based on, food attributes , sensory perception, personal attitudes and human physiology, , the manner of serving, decor, social grouping, cultural patterns, climatic conditions, consumer's psychology etc.

Food acceptance is regulated by :

1. Characteristics of the dairy/ food products: These include
 - Purity & Safety
 - Convenience
 - Functional Properties
 - Nutritional Value
2. Environmental surroundings
3. Established food habits
4. Intra organic Chemical conditions – may / may not related to metabolic process.

Food preference, food choice and food habits are important terms which have relationship with food acceptance. Food preference is particular food/s an individual likes or dislikes, food choice is foods selected by an individual at a given time whereas food habits are the sum of the food choices of an individual, constituting total diet. Because of awareness in knowledge of Nutrition Education, food habits are constantly changing. Food taboos of different types are widespread which greatly influence food habits.

2.2 Factors Affecting Food Habits

The major factors which affecting the Dairy/food products habits are:

1. Country Wise, Geography
2. Social Classes
3. Cultural patterns and religion
4. Groups of income and size of the Family
5. Occupational groups

6. Age groups, anxiety, food as gratification of love
7. Emotions on food habits (taboos)
8. Climate, specific environment – social psychology
9. Availability of Food
10. Method of preparation & serving
11. Media Promulgation – radio, paper, TV
12. Personal aspirations & identifications
13. Education
14. Racial & moral prejudices

Our senses particularly taste & smell, are intimately associated with food habits and have influence upon food selection & food habits. The "eating quality " of a food includes all those sensations such as feel taste & smell, experience by the consumer when the product is taken in the mouth.

2.3 General Terms Related to Sensory Evaluation of Dairy Products

Today Sensory analysis of foods is gaining importance all over the world as it provides information which helps in product improvement, quality maintenance, new product development and analysis of market. In sensory evaluation, words and concepts serve as units and means of communicating the results. The value of sensory test depends on terminology which are used to reproduce and communicate the results. Different terms used in sensory evaluation are described below

Absolute Judgment	:	A psychophysical method to estimate the absolute intensity of a stimulus or a categorical judgment based on an observer's experience. It does not include any external standard stimulus.
Acceptance	:	An experience or feature of experience characterized by a positive (approaching a pleasant) attitude or Actual utilization (Purchase, eating) may be measured by preference or liking for specific food item. Both are not the same although, the two definitions are often highly correlated.
Acuity	:	Ability to discern or perceive stimuli: sharpness or acuteness.
Adaptation	:	Loss of or change in sensitivity or response to a given stimulus as a result of continuous exposure to that stimulus or a similar one.
Adequate stimulus	:	Normal stimulus sufficient to elicit a response from a given sense.
Affective	:	Acceptance or avoidance responses. Hedonic scales measure affective responses, that

Response	:	is, degree of pleasantness.
After – Taste	:	The experience which, under certain conditions, follows the removal of a taste stimulus; it may be continuous with the primary experience or may follow as a different quality after a period, during which swallowing, saliva, dilution and other influences may have affected the stimulus substances. (a) After sensation, Negative After - image or after - taste in which the qualities are complements of those originally and normally induced by the stimulus. (b) After sensation, Positive After image or after taste in which the qualities are the same as those originally and normally induced by the stimulus.
Ageusia	:	It is a gustation abnormality which relates the lack or impairment of sensitivity to taste stimuli.
Anesthesia	:	It is an olfactory abnormality which relates temporary impairment of senses of smell and taste.
Anosmia	:	It is an olfactory abnormality which relates lack or impairment of sensitivity to odor stimuli. i.e. temporary/ permanent loss of smelling capacity.
Ante taste	:	A prior taste, or foretaste, usually of short duration, preceding the main taste or flavour characteristics.
Appearance	:	The visual properties of a dairy/food products, including size, shape, colour and conformation.
Appetite	:	Desire or inclination for anything, but more especially for food.
Aroma	:	Sum of olfactory impression derived from the volatile substances of a food product. Differs from odor in the respect that many of these substances are first released through chewing, warmth of the mouth, etc. and only then contribute to the sensation via the throat - nose - duct.
Attribute	:	Classification of individual units as acceptable or unacceptable.
Autosmia	:	It is a olfactory abnormality which relates the odor sensation in absence of odor stimuli.
Aversion	:	Dislike and avoidance of a of a stimulus; repugnance; antipathy
Body	:	The quality of a dairy/food products relating variously to their consistency, compactness of texture, fullness, or richness.
Chewy	:	Tending to remain in the mouth without readily breaking up. or dissolving. Requiring mastication.
Chroma	:	One of the three terms used in the Munsell notations to denote colour referring to the saturation, or purity dimension.
Comparative Judgment	:	Direct Evaluation of one stimulus with another relative to a specified dimension, such as intensity or degree of liking.
Compensation	:	The result of interaction of the components in a mixture of stimuli in which each component is perceived as less intense than it would be alone.

Composite Scoring	:	A method for evaluating quality of a product where specific quality characteristics of a product are rated separately. The rating scale is weighed for the individual quality characteristics in relation to the relative importance of the individual characteristics to the overall quality. Resulting scores are compounded for any one panelist to arrive at a composite score.
Conditioned Response	:	A response, which comes to be elicited by an originally neutral stimulus, as a result of previous learning.
Confidence Interval (Statistical)	:	A range of values, which has a given probability (usually 0.95 or 0.99) of including the true value of the quality attribute being rated.
Contrast	:	Juxtaposition of two different sensations which result in intensifying or emphasizing their contrary characteristics. It may be of two types (a) simultaneous or (b) successive.
Contrast Effect	:	A judgmental phenomenon which appears in evaluation of food samples of different preference levels or quality, where the presentation of one sample tends to make a following sample of the opposite quality rate either higher or lower than it would if they had been rated independently.
Cooling	:	A physical sensation in the mouth resulting from the presence of a cold liquid or solid. Also a result of chemical action (menthol) sensed by the skin.
Critical	:	Refers to a defect of most serious kind. In foods, it is usually reserved for defects which may cause the food to be injurious to health. Tolerance for critical defects is practically zero.
Dilution Index	:	Basically the method involves the determination of the identification threshold for the material under study. The dilution index is expressed in % dilution or as a ratio. The dilution of 1% mean that the material was just identifiable when made up in a 1% solution.
Discrimination	:	a) Perception of difference between two or more objects in respect to certain characteristics. b) A differential response to stimuli which differ quantitatively or qualitatively.
Disguising Potential	:	A testing method wherein various increments of a flavouring compound are added to a substance (usually distasteful) to mask or disguise its sensory properties.
Evaluation Card	:	Wording questions used on semantic, sociological and psychological aspects to obtain the information desired from the panel
Expert	:	Generally, an individual acknowledged to be experienced and skillful in a special practice in the food and beverage field, a specialist with special powers of discrimination sensitivity and perspicacity, who usually confines his diagnostic judgment to a specific product under specific conditions.

Fatigue	:	Condition of organs or organisms which have undergone excessive activity with resulting loss of power or capacity to respond to stimulation.
Flavour	:	Total of sensory sensations perceived at the entrance of the alimentary and respiratory tract, consequently mainly sum of odour and taste, sometimes coupled with warmth, cold and mild pain.
Flavouring	:	Any substance, such as an essence or extract, employed to give a particular flavour.
Flavour Memory	:	As used in descriptive sensory analysis, an ability to recognize and identify many individual odours and flavours.
Flavour Profile Technique	:	A method of qualitative descriptive analysis of aroma and flavour. The method makes it possible to indicate degree of difference between two samples on the basis of individual character notes, the degree of blending and the overall impression of the product.
Forced Judgment	:	A reaction required by an experiment in which "don't know", or other indeterminate answers are not permitted.
Fragrant	:	A pleasing olfactory quality, odours which are distinctly pleasant smelling.
Grading	:	Sorting of products according to size or quality.
Gust	:	A unit of gustatory intensity relating to the threshold of a given substance.
Gustation	:	The process of tasting.
Haptic	:	Pertaining to the skin or the sense of touch in its broadest sense.
Hedonic	:	Pertaining to pleasurable or unpleasurable experiences.
Inadequate Stimulus	:	When a reaction is obtained by the application of energy which is not 'normal' to the sense system involved (such as an electrical current applied to the tongue producing a taste), the non-normal stimulus is termed inadequate.
Intensity	:	A quantitative attribute of a sensation approximately proportional to the intensity of physical energy of the stimulus, such as brightness of colours, loudness of sounds, and concentration of taste or odour compounds.
Intensity Scale	:	Scaling method consisting of numbers of terms used to denote the strength of a medium.
Interaction	:	A measure of the extent to which the effect of changing the level of one factor depends on the level(s) of another or others.
Iso-hedonic	:	Equality in degree of pleasantness and unpleasantness.
Judge	:	Examiner with some experience and / or training regarding the test problem.
Just Noticeable Difference (JND)	:	The smallest detectable difference between two stimuli.
Kinesthetics	:	Referring to the sense of feel by means of the mouth or fingers.

Masking	:	In taste, odour, or flavour application, it is a component quality within a mixture which dominates or over - rides another quality or other quality present, thus changing the quality of the perceived resultant without benefit of chemical interaction of the components themselves.
Matching	:	The process of equating or relating, pair by pair, for experimental purposes, usually to determine the degree of the similarity between a standard and an unknown, or two unknowns.
Merosmia	:	A condition analogous to colour blindness in which odour are not perceived.
MID	:	Minimum identifiable difference; difference threshold.
Mouthfeel	:	The original experience deriving from the sensations of the skin in the mouth during and / or after ingestion of a good or beverage. It relates to density, viscosity, surface tension and other physical properties of the material being sampled.
Multiple Comparison	:	An unlimited number (usually more than three) of samples are presented to the observer simultaneously in random arrangement or in accordance with a predetermined statistical design. Significance of result is usually calculated by the variance method, or a rapid approximation thereof.
Multiple Range Test	:	A test employing different significance values depending upon the number of means being compared.
Objective	:	a) Capable of being recorded by physical instruments or as a consequence of a repeatable operation. b) Not dependent upon the observations and reports of an individual, and thus verifiable by others.
Observer	:	One participating in a test, whose primary attention is directed towards judge's response.
Odorant	:	A substance which stimulates the olfactory receptors.
Odour	:	Impression derived by smelling or sniffing. Positive hedonic sensation (pleasing) is "fragrance". Negative hedonic sensation (offensive) is "stink".
Olfactometer	:	An instrument for controlled presentation of odour stimuli, used for measuring threshold and other quantitative values.
Olfactory Coefficient	:	The smallest volume of vapour of a substance necessary for identification of its odour.
Organoleptic	:	Of the intrinsic quality of food which has an effect on the senses.
Paired Preference	:	Paired comparison method using the preference criterion.
Palatable	:	Pleasing to the taste, and hence, acceptable.
Panel	:	A group of people (observers, subjects, judges) comprising a test population, which has been specially selected or have special knowledge or skills, or may merely be available

		and pre-designated. a) Close Panel When judges work in individual booths and communication between them is forbidden. b) Open Panel When judges sit and work in view of each other, even perhaps commenting aloud and comparing notes.
Preference	:	(a) Expression of higher degree of liking. (b) Choice of one object relative to other, (c) Psychological continuum of affectivity (pleasantness - unpleasantness) on which such choices are based. This continuum is also referred to as that of degree of liking or disliking.
Primary Qualities	:	Within a specific sense, those qualities which are considered basic and from which it is possible to compound all other qualities. For example, salt, sweet, bitter and sour are primary taste qualities.
Psychophysics	:	The study of the physical relations between stimulus variables and psychological measures of sensory variables.
Psychophysical Methods	:	A group of specific procedures used in psychophysical investigation.
Quality	:	(a) An aspect, attributes, characteristics, or fundamental dimension of experience, which involves variation in kind rather than in degree, (b) The composite of those characteristics that differentiate among individual units of a product and have significance in determining the degree of acceptability of that unit by the user, (c) An aesthetic standard for a product usually set by experienced users.
Rank order (Ranking)	:	A psychometric method that may be used in multiple comparisons where the subject considers all of the samples in a series at the same time and is required to rank them in order of some designated dimension; such as preference, intensity and quality.
Rating Scale	:	A method for securing and recording a judgment concerning the degree to which a stimulus material possesses a specific attribute, for example, by placing a mark at an appropriate position between the two extremes or a line that represents the possible range of degrees of the attribute.
Reaction	:	In the behavioral sciences, action in response to known or inferred stimulation.
Score	:	(a) Noun: A value assigned to specific response made to a test item (b) Verb: To rate the properties of a food on a scale or according to some numerically defined set of criteria.
Screening	:	Pre-testing of possible samples, techniques of judges.
Sensitivity	:	Acuity; ability to perceive quantitative and / or qualitative difference.
Sensory	:	Pertaining to the action of the sense organs.
Sequential Analysis	:	A procedure in which the sample number is not fixed in advance but depends to some extent on the outcome of the sampling as it proceeds.
Series effect	:	A tendency to over or underestimate a stimulus according to its magnitude in relation to the series as a whole.

Method of Single Stimulus	:	Any psychophysical or psychometric method in which a judgment follows the presentation of one stimulus only.
Smell	:	To perceive by excitation of the olfactory nerves.
Sniff	:	To evaluate an odor by drawing air audibly and abruptly through nose.
Sorting	:	A generic term for sensory tests that requires splitting of a number of coded samples into a specified number of designated subgroups: sorting involves both discrimination and matching and in some cases ranking.
Standard	:	A sample presented as a model or example. The standard sample conforms to a specified level or degree of quality.
Stimulus	:	That which excites a sense organ.
Subject	:	One participating in a test whose primary attention is directed towards the samples.
Subjective	:	Pertaining to individual experience.
Subliminal	:	Below the threshold; applied to stimuli which are not sufficiently intense to arouse definite sensations but which, nevertheless, have some effect upon the responses of the individual.
Supraliminal	:	Above the threshold, either absolute threshold or difference threshold. See also subliminal.
Texture	:	Impression made by certain soluble substances in the mouth. Salty, sour, sweet and bitter are basic tastes (a) Taste Inhibitor Substance which renders taste organs less able to perceive delicate taste reactions, (b) Taste Sensitizer Substance which conditions the taste organs for keener perception.
Threshold	:	A statistically determined point on the stimulus scale at which occurs a transition in a series of sensations or judgments. Thresholds are of four kinds (a) Relative Threshold (RL) of sensation, stimulus threshold, or absolute threshold, is that magnitude of stimulus at which a transition occurs from no sensation to sensation, (b) The Difference Threshold (DL) is the least amount of change of a given stimulus necessary to produce a noticeable change in sensation, and the interval or units is known as JND (Just Noticeable Difference). (c) Recognition or identification threshold is that magnitude of stimulus necessary for correct identification, (d) Terminal threshold is that magnitude of a stimulus above which there is no increase in the perceived intensity of the appropriate quality for the stimulus.
Time Intensity Test	:	Measurement of the rate duration and intensity of stimulation by a single stimulus.
Whiffing	:	A short, quick sniffing procedure.