

FOOD QUALITY AND SENSORY EVALUATION

THEORY

Paper No.	:	9
Maximum Marks	:	150
Credits	:	4
Teaching Period	:	4 Theory + 1 Students' Presentation/ Week
Teaching Load	:	48 Theory Periods + 12 Presentation/ Semester

Objectives

- To understand basic quality attributes of food in raw as well as processed form.
- To learn various systems of objective and subjective evaluation and their application in industry.

CONTENTS

UNIT 1 INTRODUCTION TO QUALITY ATTRIBUTES OF FOOD (Potter) (4 lectures)

Appearance, flavor, textural, sanitary, nutritional and other quality attributes of food in food quality evaluation.

UNIT 2 GUSTATION (Amerine, Rao) (10 Lectures)

Introduction and importance of gustation; Structure and physiology of taste organs- tongue, papillae, taste buds, salivary glands; Mechanism of taste perception, Chemical dimensions of basic tastes- sweet, salt, sour, bitter and umami; Factors affecting taste quality, reaction time, taste modification, absolute and recognition threshold; Taste abnormalities; Taste measurement

UNIT 3 OLFACTION (Amerine, Rao) (10 Lectures)

Introduction, definition and importance of odor and flavor; Anatomy of nose, physiology of odor perception; Olfactory abnormalities; Mechanism of odor perception; Odor classification, chemical specificity of odor; Odor measurement using different techniques – primitive to recent techniques; Merits and demerits of each method.

UNIT 4 COLOR (DeMan, Rao) (10 Lectures)

Introduction and importance of color, Dimensions of color and attributes of color; gloss, appearance etc., Physiology of color perception, Color abnormalities, Measurement of color; Munsell color system, CIE color system, Hunter color system, spectrophotometry and Colorimetry etc.

UNIT 5 TEXTURE (DeMan, Rao)

(14 Lectures)

Introduction, definition and importance of texture, Physiology of touch in texture perception, receptors involved in texture perception, Phases of oral processing; Rheology of foods, viscosity, plasticity; Texture classification; Texture Measurement – basic rheological models, forces involved in texture measurement, Application of texture measurement in cereals, fruits and vegetables, dairy, meat and meat products.

Recommended Readings

1. Rao E. S. (2013). Food Quality Evaluation, Variety Books.
2. DeMan J. (2007). Principles of Food Chemistry, 3rd ed., Springer.
3. Meilgard (1999). Sensory Evaluation Techniques, 3rd ed. CRC Press LLC,
4. Potter, N. and Hotchkiss, J.H. 1995. Food Science, 5th Ed., Chapman & Hall.
5. Amerine, Pangborn & Roeissler (1965). Principles of Sensory Evaluation of food, Academic Press, London.

PRACTICALS IN FOOD QUALITY AND SENSORY EVALUATION

Maximum Marks	:	50
Credits	:	4
Teaching Period	:	4 / Week
Teaching Load	:	48/Semester

CONTENTS

1. Training of sensory panel.
2. To perform sensitivity tests for four basic tastes
3. To perform analytical and affective tests of sensory evaluation.
4. Recognition tests for various food flavours, flavor defects in milk.
5. Sensory evaluation of milk and milk products.

6. Extraction of pigments from various fruits and vegetables and study the effect of temperature and pH
7. Texture evaluation of various food samples- crispies/ cookies/ biscuits/ snack foods
8. Textural measurement of various food products using Texture Analyzer
9. Measurement of colour by using Tintometer/ Hunter Colour Lab etc.

Recommended Readings

1. Amerine, Pangborn & Roessler (1965). Principles of Sensory Evaluation of food, Academic Press, London.
2. Meilgard (1999). Sensory Evaluation Techniques, 3rd ed. CRC Press LLC, DeMan J. (2007). Principles of Food Chemistry, 3rd ed., Springer.
3. Rao E. S. (2013). Food Quality Evaluation. Variety Books.