

SNS COLLEGE OF NURSING COIMBATORE-35

COURSE NAME : B.Sc., Nursing I Year

SEMESTER : II semester

SUBJECT : Applied Nutrition & Dietitics

UNIT : V

TOPIC : Additives & Adulteration

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Objectives

At the completion of lecture, the students will be able to describe the Food Additives and Adulteration with clinical implications, develop desirable attitude and apply in clinical practice

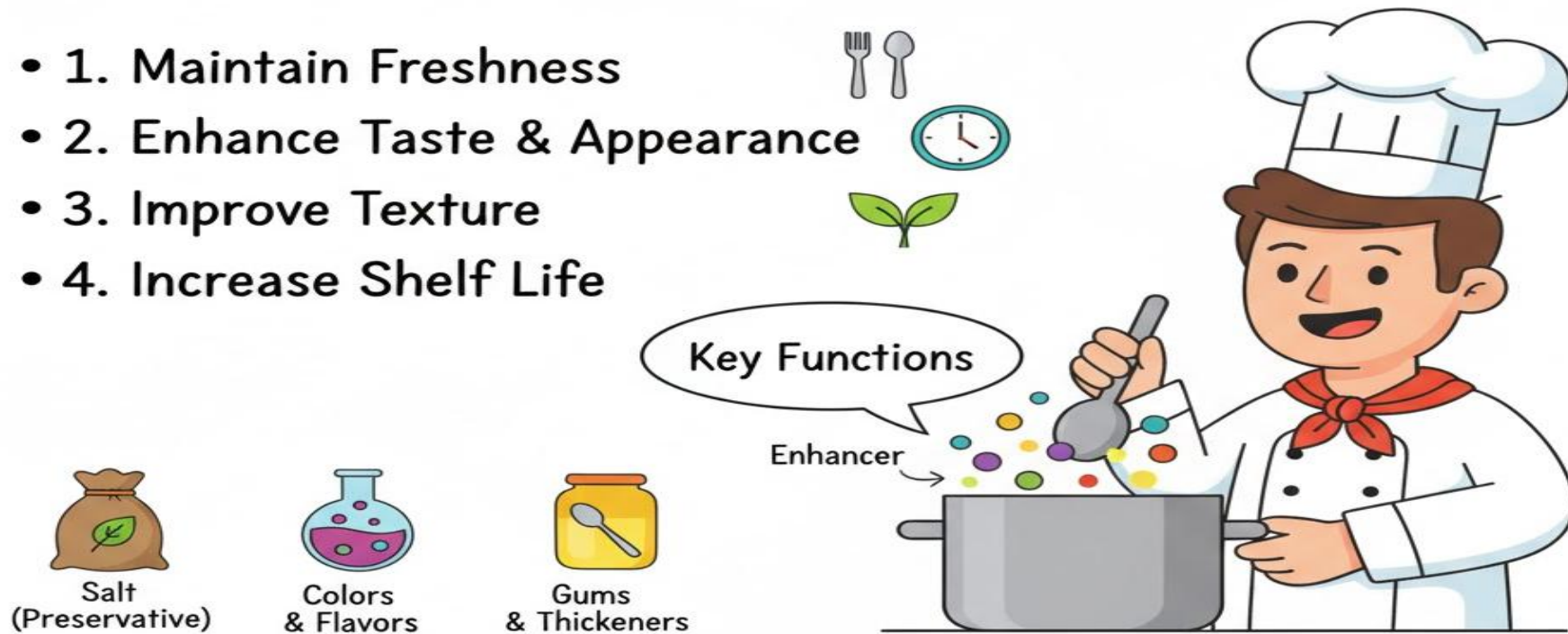
Food Additives and Adulteration



Food Additives

Substances added to food to...

- 1. Maintain Freshness
- 2. Enhance Taste & Appearance
- 3. Improve Texture
- 4. Increase Shelf Life



Food Additives

Key Functions:



1. Preservation
& Safety



2. Flavor & Texture



Appearance
& Appeal



4. Shelf Life
Extension

Common Examples

Categorized by Function

PRESERVATIVES



- Salt, Sugar, Vinegar
- Nitrites, Sulfites



FLAVORINGS & SPICES

- Natural Extracts
- MSG, Artificial Flavors



COLORANTS

- Caramel, Turmeric
- Synthetic Dyes (e..gl, Tartzazine)



THICKENERS & EMULIFFIRIS

- Gums (Xanthan, Carrageean)
- Lecithin, Carrageean



PRESRVATIVES - Keeping Food Fresh

Key Functions:



PRESRVATIVES

1. Prevent Spoilage

- Slow down microibal growth
- Inhibit chemical reactions (oxidation)



PICKLES



BREAD



Extend Shelf Life

- Food stays safe longer
- Maintains quality (color, texture)



e.g., Salt,
Vinegar,
Nitrites

COLORANTS & FLAVORINGS - ENHANCING APPEAL

Making Food Look & Taste Better



COLORANTS

- 1. Visual Appeal
- 2. Synthetic Dyes (e.g., Tartrazine)
- 3. Natural Pigments (e.g. Turmeric, Beetroot)



FLAVORINGS

- 1. Taste & Aroma
- 2. Taste & Aroma
Taste & Aroma
- 3. Natural Extracts
(e.g. Spices, Fruits)



Adulteration

Adding Inferior or Harmful Substances

DEFINITION:



1. Intentional addition of low-quality or harmful substances
2. Removal valuable ingredients
3. Deceiving consumers for profit
4. Reduces food quality & purity

KEY CHARACTERISTICS:



1. Reduces food quality & purity
2. Poses health risks
3. Violates food safety laws



Protecting Public Health is Crucial

Why does Food Adulteration occur ?

Motivations Behind the Deception

1. Economic Gain

- 1. Higher profits by using cheaper alternatives
- 2. Increasing product weight/volume
- 3. Reducing production costs



2. Other Factors

- 1. Lack of strict regulations (developing regions)
- 2. Andequate testing facilities
- 3. Consumer demand for low-cost products



Driven by Greed & Systemic Weakness

Common Examples

Recognizing the Deception



Protecting Public Health

Health Risk of Food Adulteration

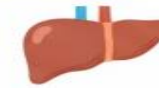
Protecting Our Well-being

SHORT-TERM EFFECTS

1. Nausea, Vomiting, Diarrhea
cheaper alternatives
2. Allergic Reactions
3. Food Poisoning



LONG-TERM COMPLICATIONS



1. Organ Damage regulations
(Liver, Kidneys)
2. Poses health (Liver, Kidneys)
1. Nutritional Deficiencies
Cancer
4. Impaired Child Development



Adulterated Food = Serious Health Threats

Detecting Food Adulteration

Simple Home Tests

MILK PURITY



Test: Water Dilution

Method: A drop of milk on to sloped surface. Pure milk leaves a white trail.

SPICE AUTHENTICITY



Method: Add spoon 2 in powder to glass of water. Adulterant settles at bottom

LONG-SYGAR SYRUP ADDTION



Dip cotton wick in honey & light. Pure burns steady; adutearated will crackle/pop

References

Gilbert, J. A., & Schlenker, E. (2023). *Williams' essentials of nutrition and diet therapy* (13th ed.). Elsevier.

Swaminathan, M. (1974). Essentials of Food and Nutrition (Vol. 1: Fundamental Aspects; Vol. 2: Applied Aspects). Ganesh & Co.

Srilakshmi, B. (2024). Dietetics (9th ed.). New Age International Publishers.

THANK YOU!