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DEPARTMENT OF FOOD TECHNOLOGY

COURSE CODE & NAME: 19FTE304 & FOOD ADDITIVES AND NUTRACEUTICALS

III YEAR / V SEMESTER

UNIT : I – FOOD ADDITIVES AND NUTRACEUTICALS

TOPIC 1 : Preservatives - Definition- Natural and Chemical Preservatives

PRESERVATIVES

Under Rule 52 of PFA rule (1955), definition of preservative is given as

A preservative means a substance which when added to food, is capable of inhibiting, retarding or arresting the process of fermentation, acidification or other decomposition of food.

CLASSIFICATION:

- Class I preservatives.
- Class II preservatives.

CLASSIFICATION

1. Class I preservatives. (Natural Preservatives)

(i) Saltish-common salt.

(ii) Sweet-sucrose, dextrose, glucose or its syrup and honey,

(iii) Pungent-spices,, vinegar (natural as well as synthetic)

(iv) Oily-only edible vegetable oils. Other fats like milk fat, animal fat or marine oils have been excluded.

Class II preservatives(Chemical Preservatives)

(i) Benzoic acid including salts thereof,

(ii) Sulphurous acid including salts thereof,

(iii) Nitrates/nitrites of Na/K,

(iv) Propionic acid including its Na/Ca salts and its esters,

(v) Sorbic acid including its Na/K/Ca salts,

(vi) Lactic acid including its Na/K/Ca salts and Na diacetate,

(vii) CH, or C,H, esters of p-OH benzoic acid,

(viii) Acid Ca-phosphate and

(ix) Nicin.

ACIDULANTS

Acidulant food additives are used to lower pH, enhance flavor, and preserve food. Here are the types of acidulants with their typical pH values and examples:

1. Organic Acids:

Citric Acid:

- pH 2.2-3.2 in a 10% solution.
- Used in citrus-flavored beverages, candies, and jams.

Acetic Acid:

- pH 2.4-3.4 in a 5% solution (vinegar).
- Common in pickles, sauces, and dressings

Lactic Acid:

- pH 3.8-4.2 in a 10% solution.
- Found in dairy products, fermented foods, and beverages.

Malic Acid:

- pH 2.5-3.0 in a 10% solution.
- Used in candies, fruit-flavored drinks, and baking powders.

Tartaric Acid:

- pH 2.7-3.3 in a 10% solution.
- Used in cream of tartar, baking powders, and some beverages.

2. Inorganic Acids:

Phosphoric Acid:

- pH 1.5-2.0 in a 10% solution.
- Common in cola drinks and processed foods.

Hydrochloric Acid:

- pH 1.0-2.0 in a concentrated form.
- Used in minor amounts for pH adjustment in some foods.

3. Natural Acidulants:

Lemon Juice:

- pH 2.0-3.0.
- Adds acidity and flavor in cooking and beverages.

Lime Juice:

- pH 2.0-2.5.
- Used similarly to lemon juice in various foods and drinks.
- These acidulants are chosen based on their acidity, desired flavor profile, and functional properties in food formulations.

THANKYOU