SNS COLLEGE OF TECHNOLOGY

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Coimbatore – 35

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DEPARTMENT OF FOOD TECHNOLOGY

19FTT302– FOOD SAFETY & QUALITY REGULATIONS

III – YEAR V SEMESTER

UNIT 2 – FOOD QUALITY AND QUALITY EVALUATION OF FOODS

TOPIC 2- Quality and Quality attributes: Classifications of Quality Attributes and their role in Food Quality
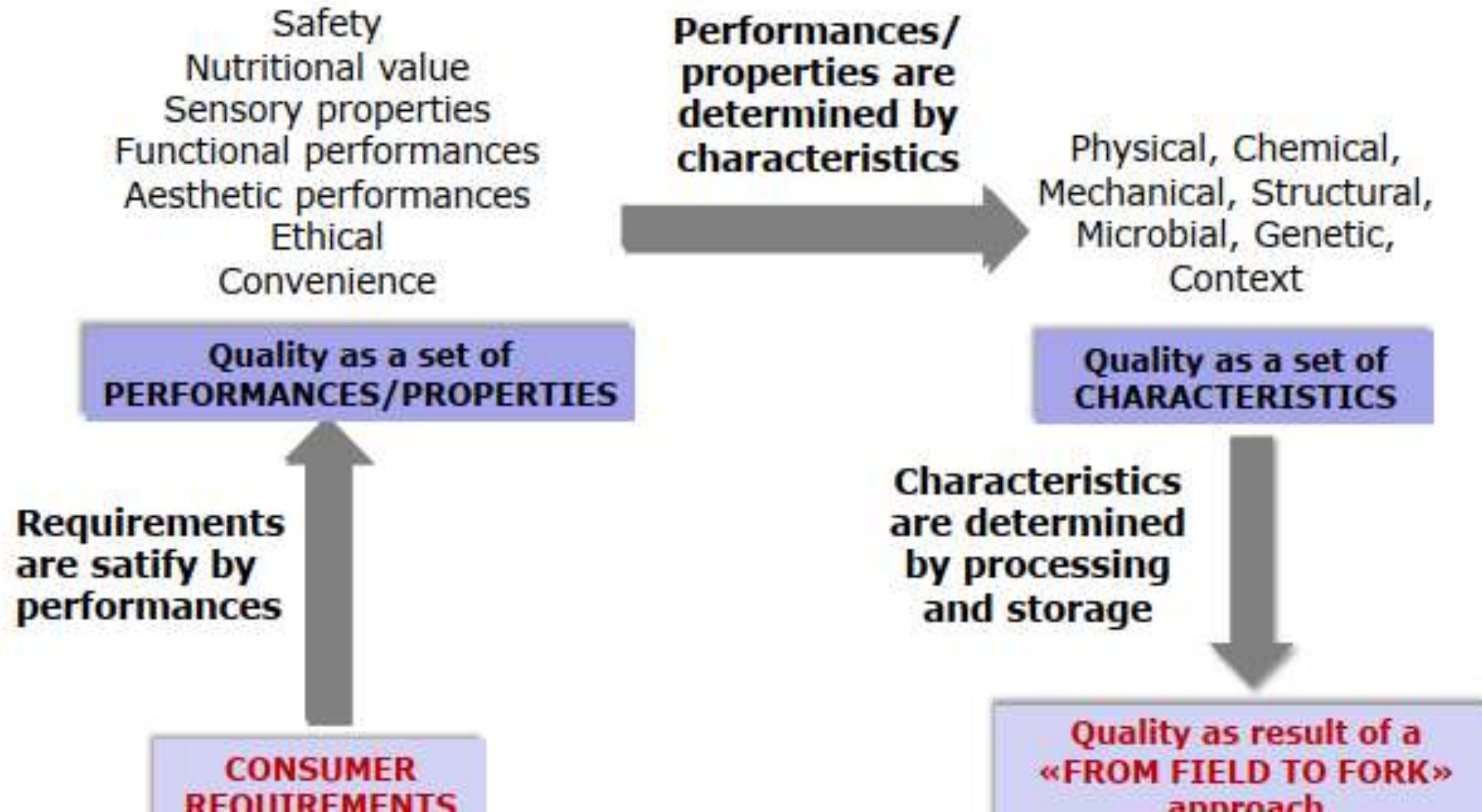
INTRODUCTION

WHAT IS FOOD QUALITY ?

HOW TO EVALUATE IT?

INTRODUCTION

Safety
Nutritional value
Sensory properties
Functional performances
Aesthetic performances
Ethical
Convenience

Performances/
properties are
determined by
characteristics

Physical, Chemical,
Mechanical, Structural,
Microbial, Genetic,
Context

Quality as a set of PERFORMANCES/PROPERTIES

Quality as a set of CHARACTERISTICS

Requirements are satify by performances

Characteristics are determined by processing and storage

CONSUMER REQUIREMENTS

Quality as result of a «FROM FIELD TO FORK» approach

Safety

Quality attribute (intrinsic) associated to the acceptable risk of :

☐food poisonings and infections

☐carcinogenesis, mutagenicity

☐parasitic traumatic injuries

☐toxic substances and dangerous components

due to:

- Biological organisms

- Chemical agents

- Physical agents

This is related to no spoiled foods, in good preservation, no altered, adulterated or spoiled.

Nutritional value

Propriety associated to the presence and content of:

micro- e macro-nutrients, e.g.

• proteins

• lipids

• carbohydrates (sugars, starch)

• vitamins, salts, ….

Energetic value

Healthy properties

Proprieties related to the ability of a food or a food component to

positively contribute to healthy status of consumers, e.g.

• Absence of anti-nutritional components

• Absence of components that may cause allergies and intollerances

• Presence and availability of components (bioactives)

able to exert positive effects on human(quantità e

disponibilità)

Sensory properties:

They depend on the stimuli that a food induces during eating on our senses:

- Eyesight: visual aspect (shape, colour, etc..)

- Smell and taste: flavour and aroma

- Tact: texture, hardness

- Hearing: sound produced during consumption (e.g. crunchiness)

These properties affect significantly the attractiveness, palatability and acceptability of a product by the consumer. It is a property evaluated by individuals in a subjective way and affected by many environmental factors (social, cultural, etc.)

Convenience :

Related to the easiness to be used or consumed .

It may include aspects related to:

• stability over storage and transportation (shelf stable, packaging)

• easiness to prepare (e.g. ready-to cook food, microwavable products)

• easiness to consume ready-to-eat, snack)

• waste management (ready-to-cook)

Emotional

They are referred to the role that a food has in a population/group of consumers also referred to a geographical region/area due to history, culture, diet habits and anthropology .These property give an added value to typical and traditional products

They depend on:

- the geographical framework (region, nation)

- history of the product

Ethical requirements :

Referred to religious, political, ideological issues. Ethical requirements include, among others:

☐organic agriculture and farming products

☐environment protection/sustainability

☐the defense of biodiversity against mass production

☐ "Kosher" o "Halal" products

☐Vegetarian, vegan products

☐"GMO-free"

☐"Social Accountability"

☐Fairtrade"

and related certification requirements.

Technological properties:

1. Related to the performances of raw materials

2. and ingredients to be processed

3. Each product/ingredient has specific technological

4. properties to comply when used for processing.

These include:

• Availability and price

• Intrinsic quality properties (meeting the specifications of the final product for which they are used)

• Suitability to be processed, e.g.:

❖ resistance to mechanical stresses (eg. and mechanical picking up and washing of vegetables)

❖ easiness to selection

❖ respondence to standard quality properties (in large industrial production)

Stability and shelf-life

It depends on the ability to resist to the evolution of the reactions and processes that cause food degradation over storage time or the expected shelf- life (= saleability/consumption/usable time), like

- Microbial growth

- Chemical and enzymatic/biochemical reactions

- Physical processes.

Food processing has the general aim to :

- Slow down/inhibit the reactions and processes causing food degradation

- Destroy microrganisms (both patogenic and alterative) and degradative enzymes and ingredients to be processed

- Each product/ingredient has specific technological

- properties to comply when used for processing.

THANK YOU