



# SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU

## UNIT V: QUALITY CONTROL MEASURES IN INDUSTRIAL AND MARKETING CENTRES

### Quality control system in storage & Quality control aspects in food industries

#### Food storage:

After the products are prepared by various methods they are stored for a different period till they are consumed. During the storage it is very important to see that these products do not pick up any moisture from the environment in case of dried products such as potato chips and do not lose moisture in case of moist foods such as cakes. To achieve this appropriate packaging is essential.

Packaging plays an important role in ensuring that food reaches the consumer in peak condition. It increases the shelf life of products by acting as a barrier against water vapour, air and microbes while preserving the freshness of products. Packaging also conveys important information such as cooking information nutrition and ingredient or use-by dates which help the consumer store and prepare products safely.

#### Storage

#### conditions:

The atmosphere where the foods stored should be free from contamination, appropriate temperature and humidity that is required for a food that is intended to store is important.

#### Humidity

Air that is too dry or too damp damages many fresh foods. Excess humidity can lead to the growth of moulds and bacteria on meat, and fungus on fruit, vegetables and dry cereals. Excessive dryness can dehydrate meats as well as some fruits and vegetables. Controlling humidity is often a question of how air is circulated around products in trucks, shipping containers and storage areas. In turn, air flow is dependent on the type of containers in which food is packed (net bags for certain kinds of vegetables, slatted cartons for certain fruits), and the way these containers are packed together, e.g., with relatively little air flow among them or with spacers between cartons specifically designed to enhance air flow.

Example: Potatoes for processing pose considerable challenges in that storage at temperatures sufficiently low to maintain dormancy causes the formation of higher sugars

in the tubers. These lead to browning of the potato and to an increase in the levels of acryl amides formed during **processing**, from the interaction of the sugars with amino acids naturally present.

To avoid the higher sugar levels potatoes for **processing** are therefore typically stored at 7-9°C. Discoloration from high sugar levels is even more important in potatoes for chip production so these are stored at 9-12°C to help keep sugar levels down.

At these temperatures, sprouting will also cause irregular sugar concentrations in the tubers, resulting in irregular fry colours. Use of effective sprout suppression is therefore vital during storage.

## **Temperature**

Those foods which need to be stored under controlled temperature such as Milk and milk products, vegetables, fish, meat, poultry, prepared meals must be kept at low temperatures throughout **processing**, transport, storage and final sale.

Maintaining low temperatures is indispensable to transporting milk both prior to and after **processing**. Any delay in transport diminishes the shelf life of consumer products. In the retail outlets, liquid milk products (unless sterilized) are maintained at low temperatures both in storage and in consumer displays. To ensure proper procedures are carried out, temperatures are constantly monitored by thermometers on storage and transport tanks for raw milk, as well as thermometers and temperature-recording devices on delivery trucks, and at retail storage and sales locations.

### **Quality control aspects in food industries:**

#### **What Is Food Quality Control?**

Food quality control in food industry is monitoring and verifying food product quality throughout the supply chain – from actual production and shipment to before consumption – through systematic procedures. The ultimate goal is to verify that products meet stringent criteria for safety, taste, appearance, and other factors.

#### **How Do We Maintain High Food Quality Standards?**

There are various food safety requirements and several food safety and quality control regulations mandated by law or by large retailers/chains operating within the food industry. The most common quality standard is the Hazard Analysis and Critical Control Points (HACCP), created to address food safety by analysing and controlling biological chemicals or physical hazards throughout the food supply chain. As well as

implementing and Good Manufacturing Practices (GMP) in your food supply chain.

### What Are Examples of Food Quality Control in Food Industry?

There are various ways to conduct food quality control, including supplier verification, inspecting the quality of the produce, implementation of good manufacturing practices, hazard analysis and critical control points for training and education.

In this article, we'll focus on two commonly discussed aspects related to the export and import of food products, specifically supplier verifications and inspections.

### What Is a Food Supplier Audit?

A food supplier audit assesses and verifies the safety, quality, and compliance of a food supplier's operations, processes, and products against established requirements or guidelines, including yours. Typically, these audits are conducted by an impartial third-party inspection company that assesses the supplier based on various criteria.

#### Food Supplier Audit Checklist:

Company legality information

Bank information

Human resources

Exportation capability

Order management

However, the supplier audit may also encompass a more comprehensive assessment of the supplier's factory and production.

#### Food Supplier Factory Checklist:

Company's background

Manpower

Production capability

Machinery, facilities, and equipment

Food safety management systems (e.g., HACCP)

The manufacturing process and production line

In-house food quality management and quality systems, such as testing and inspection

Management system and capability

Environment

### What Is a Food Inspection?

A food inspection evaluates and verifies whether the food conforms to quality, safety criteria and established requirements. The inspections are carried out by trained third-

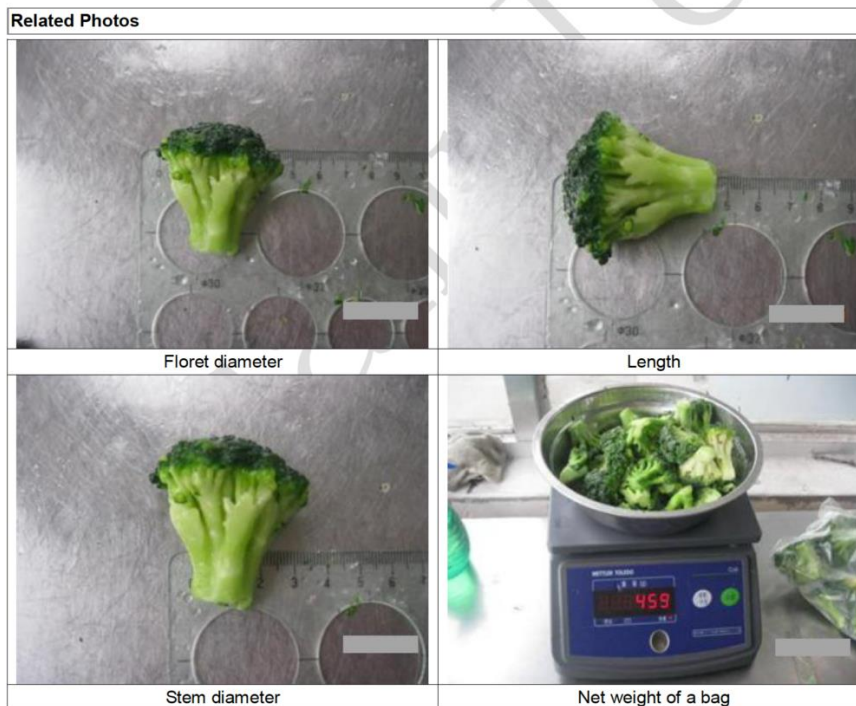
party inspection agencies at various points along the food supply chain. But when it comes to food products exports and imports, the inspections are typically carried out at:

**Before shipment:** This takes place at the facility where the food products are produced, packaged, and prepared for shipment.

**Loading/Unloading Supervision:** At the point of loading or unloading, such as in a warehouse or transportation hub

### *Quantity Verification*

One of the crucial steps is to verify the quantity of the products. The inspector will check if the order quantity matches the order that was placed by the buyer. For example through counting (such as the number of units, boxes) or weighing the products (commonly used for larger orders) using calibrated scales or weighing equipment.



### *Overall Appearance*

The inspector will assess the overall appearance of the food products, taking note of visual characteristics such as the colour, condition, size and shape to ensure that they conform to the required standards and are free from visible damages or abnormalities.

### *Dimensions and Weight*

The inspector will measure the length, width, and height using different measuring



tools or weigh the food products to compare the measurements and weight to the specified size requirement as per the purchase agreement or the contract.

### *Shipping Marks and Packaging*

The inspector will in a pre shipment inspection of food assess whether the packaging is in good condition and appropriate for the type of food product being shipped. He or she will take note of different markings. For example, the product name, quantity, and country of origin, and evaluate compliance with applicable regulations and standards.

### *Storage Condition*

Checking if the products have been stored properly in line with industry standards, including temperature and cleanliness. The inspector may also review record-keeping practices to ensure that proper documentation is maintained, such as temperature logs, product rotation records, and other records.

## **What Is Food Testing?**

There are multiple food quality testing services, ranging from assessing raw materials' food quality and safety to finished products. Below, we've listed three common testing methods for food products.

**Microbiological Testing:** Used to evaluate the levels of microorganisms in food products.

**Chemical Testing:** Analyse the chemical components, such as nutrients, additives, and other substances.

**Physical Testing:** Check the physical properties of a food product. For example, its texture, size, shape, and other relevant characteristics.

## **The Importance of Food Quality Control**

Controlling the quality of food is important to ensure that consumers consume safe food products and safeguard them from risks associated with contaminated foods. For buyers, it also reduces the risks of dealing with fraudulent suppliers and receiving poor goods. Moreover, it ensures compliance with food laws and regulations, including food safety, labelling, and packaging requirements.