

## Post-Harvest Management Protocols

# DAIRY

## CARE DURING STORAGE

Almost all dairy products need to be stored in the refrigerator. The exceptions include powdered milk products, and products such as UHT (Ultra-high temperature) products, which can be stored in the pantry, or ice cream which needs to be stored in the freezer.

The period each dairy product stays fresh varies significantly. For example, pasteurised milk will be stored for 12–14 days if kept below 4°C, while yoghurt and similar fermented products should remain of a good quality for 30–40 days under the same storage conditions. Shelf life may be increased further as suited to the product end use and industry practice.



Below is the typical shelf-life of dairy products in the refrigerator:

### **Pasteurised whole milk**

12–14 days. Skim and flavoured milks usually have a shorter shelf life.

### **Yoghurt**

From 7– 15 days.

### **Hard and semi-hard cheese**

Depending on the type, it may be kept for several weeks to months.

### **Cottage cheese, ricotta, and cream cheese**

1–2 weeks

### **Butter (salted)**

A shelf-life of about 365 days from date of packing when stored at 4 degree or below. Unsalted butter has a shelf-life of 12 months or more when stored at -18 °C.

### **Ice cream and frozen yoghurt**

In the freezer 2– 6 months.

## TRANSPORTATION

### RAW MILK

Transportation time for raw milk to dairy plant/ Milk chilling centre should be within 4 hours of milking. Food products in conveyances and/or containers are to be so placed and protected as to minimize the risk of contamination.

Milk tankers refrigerated vehicles and insulated vehicles transporting raw milk, processed milk and milk products should be registered with FSSAI through the dairy unit which owns/hires these services. Transporting any commodity/food product along with milk and milk products shall not be permitted as it compromises the hygienic conditions.

Containers used for transporting foodstuffs shall be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and shall be designed and constructed to permit adequate cleaning and/or disinfection. Where direct contact with food may occur, materials used in carrier construction shall be suitable for food contact.

## Storage Guidelines for Finished Dairy Products

Stage	Butter	Cultured/Fermented products like Yoghurt, Chach, Probiotic drink	Cheese	Ice creams	Pasteurized Milk	Ultra- High Treated Milk, Condensed Milk, Flavoured Milk
At the processing plant	-18 °C	4 to 8°C	4 to 8°C	Below - 18 °C	↓5°C	Ambient Temperature
Plant to Hub storage area	-18°C (Storage/ Transporting vehicle)	4°C (Storage/ Transporting vehicle) not below 2 °C	4°C (Storage/ Transporting vehicle) not below 2 °C	-18 °C +/-2°C (Storage/ Transporting vehicle)	↓5°C	Ambient Temperature
Transportation From Storage area to retail Shops/distributors	Refrigerated transport with temp not exceeding 4 °C	Refrigerated transport with temp not exceeding 4 to 8 °C	Refrigerated transport with temp not exceeding 4 to 8 degree C	Refrigerated vehicle with temperature of -18 +/-2 °C	Refrigerated/ insulated vehicle with temperature ↓5 °C	Ambient Temperature
Retail Storage	Not to exceed 4 °C	Not to exceed 4°C	2 to 4 °C	Not to exceed - 18 +/- 2°C	↓5 °C	Ambient Temperature



## TRANSPORTATION GUIDELINES FOR FINISHED DAIRY PRODUCTS



- i. Different products with their stipulated shelf life require different temperature in their cold chain transportation and suitable infrastructure is to be arranged.
- ii. Vehicles used by the establishment must be designed, constructed, maintained, cleaned and utilized in a manner to prevent food contamination.
- iii. Vehicle must provide effective protection from contamination, including dust and fumes. The manufacturer shall have a program in place or assurances to demonstrate the adequacy of cleaning and sanitizing. The plant should have records that the carrier is properly cleaned and sanitized. Special attention should be given to carriers used to transport goat and sheep milk from the farm to the establishment to ensure that these meet the appropriate requirements.
- iv. The transportation of pasteurized dairy products in bulk multi-use containers without re-pasteurization is strongly discouraged as there is no guarantee that equipment is adequately cleaned. Re-useable plastic totes are not acceptable for the transporting of pasteurized product. Different products with their stipulated shelf life require different temperature in their cold chain transportation and suitable infrastructure is to be arranged.
- v. For establishments who do not wish to re-pasteurize already pasteurized product, food carriers, tanks, transport lines and transfer pumps must be dedicated to pasteurized product only. Containers shall always be cleaned prior handling pasteurized product to avoid contamination
- vi. Ingredients and finished product requiring temperature controls must be transported in a manner to prevent temperature abuse that could result in deterioration affecting product safety. Dairy products which require refrigeration are transported at a temperature of 4°C or less; frozen ingredients at temperature that does not permit thawing.
- vii. Transportation temperatures must be monitored and recorded to ensure proper temperatures for refrigeration and freezing. Finished product must be transported under conditions to prevent microbiological, physical, and chemical contamination.
- viii. To assess this task, the written program must be examined to verify that the requirements for food carriers as outlined in the program are being followed, records are kept, and acceptable deviation procedures occur when conditions are not met.
- ix. It is important that dairy products are not transported in carriers that do not meet the requirements of the program, thereby posing a contamination risk to the product. This can be verified with visual and organoleptic inspections of the carriers by the inspector and visual observations of personnel responsible for loading and unloading carriers.
- x. Carts used for transportation of ingredients and finished products within the processing operation as well as forklifts used in the warehouse are subject to abuse, so careful attention is required maintain these pieces of equipment.
- xi. Forklifts and carts tend to have painted surfaces so it is important that the exterior of these items be free of rusting/ corrosion that may contaminate the products.
- xii. Transportation equipment must be frequently washed; carts should have sanitary drain cocks to prevent accumulation of water in the carts.
- xiii. It is imperative that waste and scrap carts be clearly labelled to avoid adulteration of ingredients or product. Also, the type of forklift dictates the area where it may be used. Propane may contaminate some stored food so electric forklifts should be used in food processing areas.