

Packaging of Cheese

Cheese packaging that keeps the goodness in, and the badness out!

Index

1. Introduction
2. Packaging material for cheese
3. Classify the cheese products
4. Types of packaging for cheese
5. Requirements when packaging cheese
6. Shelf life of cheese
7. Storage condition of cheese
8. Conclusion
9. Reference

1. Introduction

- Cheese is a ripened or unripened dairy product made from milk or milk products
- It can be soft, semi-hard, hard, or extra hard and may be coated in food-grade waxes or poly film
- The whey protein to casein ratio in cheese should not exceed that of milk
- Cheese is made by coagulating milk or milk products using non-animal rennet or other coagulating agents, and partially draining the whey produced
- Cheese may be found in various forms including blocks, slices, shreds, or grated

2. Packaging material for cheese

- Packaging of cheese is mainly done to protect the cheese at the time of storage and transportation.
- Cheese is packaged mainly in two forms:
 - Packaging cheese for storage and ripening (bulk packaging)
 - Packaging for consumers (retail packaging)



2.1 Bulk Packaging of Cheese

- Paraffined or vacuum packed in the flexible film are in use.
- Vacuum packaging machines, gas flushing machines, overwrapping machines and vacuum skin packaging machines are required for vacuum packaging.
- Paraffin is now completely replaced by film packaging as it causes considerable loss of cheese while removing paraffin.
- Packaging of cheese is mainly done to protect it from the outside environment, especially after the completion of the process so that cheese can retain moisture, flavour, and freshness for a longer period.

2.2 Retail Packaging of Cheese

1. LDPE

- Low-density polyethylene is heat sealable, inert, odour free and shrinks when heated.
- It acts as a barrier to moisture and has high gas permeability.
- It is less expensive, therefore widely used.
- Has the ability of fusion welded to itself to give good, tough, liquid-tight seals.



2. PET(Polyethylene terephthalate)

- PET can be made into a film by blowing or casting.
- Melting point of PET is higher than PP which is around 260°C and due to the manufacturing conditions does not shrink below 180°C.
- PET is ideal for high-temperature applications.
- It also acts as a good barrier to oxygen and water vapour.



3. Aluminium Can

- Aluminium is used for packaging as it is highly malleable.
- It can be easily converted to thin sheets and folded, rolled or packed.
- Aluminium cans act as a total barrier to light and oxygen odours and flavours, moistness, and are used broadly in food packaging, including long-life packs.



4. Paper Board (White Lined Chipboard)

- Mostly used for cheese packaging because some variants of cheese is having low moisture.
- Recyclable
- Economic
- Easy to print
- Can be moulded in any shape
- Lightweight



5. Paper wraps/ Cheese paper

- Cheese paper is a special paper produced specifically for wrapping and preserving cheese.
- The 2-ply paper allows proper oxygen exchange as one ply is a permeable cellophane that allows the cheese to breathe, and the other is like butcher paper and retains moisture.
- Formaticum is one of the well-known brands of cheese paper.



3. Classification of cheese products

To better understand the different types of packaging for cheese, it is necessary to classify the products into seven main categories:

- Wheels or half-wheel cheese
- Cheese sold in slabs, also known as portioned fresh and mature cheese
- Cheese squares
- Sliced cheese
- Soft and creamy cheese
- Grated and diced
- Cheese preserved in its liquid, mozzarella

3. Classification of cheese products



Wheels or half-wheel cheese



Cheese slabs, portioned cheese



Cheese squares



Sliced cheese



Soft and creamy cheese



Grated and diced cheese



Cheese preserved in its liquid, mozzarella

4. Types of packaging for cheese

Different types of cheese require different types of packaging:

- Flexible flow wrap packages made using horizontal flow wrappers or vertical form fill and seal machines that use barrier film, shrink or BDF films
- Packages cut around the product, thermo-formed trays made using thermo-forming machines
- Vacuum packaging
- M.A.P. packaging system (Modified Atmosphere Packaging)
- Different types of re-closable packages

5. Requirements when packaging cheese

- Despite the many uses, there are several specifications that must be met when packing cheese in order to preserve all the original organoleptic, physical, olfactory, and flavour qualities of the fresh product:
- Getting rid of the surface dryness
- reducing the growth of fungi that change things, which can be summed up as:
 - cheese moulds for aged or hard cheese
 - ageing or hard cheese yeasts
- reduced oxidation of the fat matter
- reducing swelling brought on by cheese's CO₂ generation and during preservation
- protection of the structure (especially for soft, spongy and holed products) keeping surface mould alive, which requires suitable circumstances

6. Shelf life of cheese

- The shelf life of cheese can vary from a few weeks to multiple years depending on its composition and how it is packaged.
- Area of concern
 - Growth of yeast and mold.
 - Moisture
 - Texture, off-flavours issues

Typical Cheese Shelf-Life	
 ◀ Parmesan (up to 5 years)	 ◀ Aged Cheddar (up to 10 years)
 ◀ Aged Provolone (1 year +)	 ◀ Aged Dry Gouda (2 years)
 ◀ Alpine Style (18 months)	 ◀ Baby Swiss (6 months)
 ◀ Havarti (3 months)	 ◀ Medium Cheddar (6-9 months)
 ◀ Monterey Jack, Colby Jack, Pepper Jack (4 months)	
 ◀ Blue Veined (6 months)	 ◀ Feta (4 months)
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7. Storage condition of cheese

- The recommended temperature range for storing cheese is between 35 and 45 degrees Fahrenheit, at a high humidity level, preferably at the bottom shelf of the refrigerator to avoid accidentally freezing.
- Proper storage requires the following :
 - Natural Hard Cheese and Semi-Hard Cheese and Processed (Cheddar, Swiss, Parmesan, Brick, Bleu, etc.): Refrigerate in the original package and over-wrap tightly in aluminium foil, plastic wrap or plastic bag tightly closed to avoid drying.
 - Soft Cheese (cream, cottage, limburger, camembert): Refrigerate tightly covered.

8. Conclusion

- In conclusion, cheese packaging is an important aspect of the production and distribution of cheese.
- Different types of cheese require different packaging methods to ensure that they maintain their quality and flavor during storage and transportation.
- Soft cheeses are often packaged in small rounds or squares, while hard cheeses are typically packaged in blocks or wedges.
- Grated cheeses are usually packaged in small bags or containers, and feta cheese is often packaged in small blocks or crumbles that are soaked in brine.
- Overall, the packaging of cheese plays a vital role in preserving its quality and flavour and ensuring that it reaches consumers in the best possible condition.

9. Reference

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