

Frequently Asked Questions:

1. Define Cheese?

Ans: Cheese is a food derived from milk consumed throughout the world, with a wide range of flavors, textures, and forms. The Food and Agricultural Organization devised the different definitions of cheeses. Cheese is the fresh or matured product obtained by the drainage of liquid after the coagulation of milk, cream, skimmed or partly skimmed milk, or butter milk. A second definition was added for cheeses made from the liquid whey obtained during manufacturing of cheese. Modern cheese manufacturing techniques deviate slightly from the details of these definitions but not from the general concepts.

2. Which are the different kinds of milk used for the production of cheese?

Ans: It is believed that goat and sheep milk were the first milks used to prepare cheese. This assumption is drawn from the idea that these were the first milk-producing animals that were domesticated. Today, cow's milk is the basis for most cheeses, which are produced. It is followed in turn by sheep's milk, goat's milk and buffalo's milk. Yaks, camels and llama are also milk-producing animals whose milk are utilized to prepare cheeses.

3. Mention the five basic cheese categories.

Ans: The important five categories of cheeses are as follows

1. *Fresh or Unripened Cheeses:* These are uncooked and unripened. They are generally mild and creamy with a slight tanginess. They usually have a high moisture content ranging from 40-80%. Because of their high moisture content, they are highly perishable.
2. *Soft Cheeses:* These have thin skins and creamy centers. They are among the most popular and delicious cheeses in the world. They ripen quickly and remain at their peak of flavor for 3-5 days. They are highly perishable possessing a moisture content of 50-75%.

3. *Semi-Soft Cheeses*: These include mild, buttery cheeses with smooth, sliceable textures. Some cheeses in this category are referred to as monastery cheeses because their origins can be traced back to monasteries during the Middle Ages. The moisture content of these cheeses ranges from 40-50%, giving them a longer shelf life than the fresh or soft cheeses.
4. *Firm Cheeses*: These have a dense texture. Many of the cheeses have a slightly flaky consistency making them difficult to slice thinly by hand. They have a moisture content of between 30-40% giving them a longer shelf life than previously mentioned cheeses, and making it less perishable as well.
5. *Hard Cheeses*: These cheeses that have been carefully aged for extended periods of time. Many of these cheeses are cooked at high temperatures in order to create a tight protein bond prior to aging. These cheeses have a moisture content of approximately 30%. Hard cheeses are well suited for grating because of the combination of low moisture and tight protein bonding. Grating cheeses have the longest shelf life of all the natural cheeses.

4. Discuss the different types of fresh or unripened cheeses available in the market.

Ans: Fresh or Unripened Cheeses: Under this category, the most popular cheeses available in the market are

- *Cream Cheese* is a soft cow's milk cheese produced in the United States. It can be purchased in solids, whipped or flavored, with regular fat content, light or fat free. It has many uses in the kitchen beginning with spreads for bagels in the morning right through to the main ingredient in a cheesecake for a dinner dessert.
- *Goat* cheese usually has its own category as do blue cheese, but here it will be treated like the other fresh cheeses. This cheese is usually produced exclusively from goat's milk, but some varieties combine goat and cow's milk. Goat's milk is higher in fat and protein than cow's milk and has a more concentrated, sharp, tangy flavor. Most goat cheese sold is fresh, making it very soft and creamy with an average life span of a couple weeks. Some goat cheeses are aged for a longer period of time, creating a firmer product that will have a longer shelf life. All these cheeses are produced in a

- variety of shapes and sizes, ranging from cones to disks and from pyramids to cylinders. Many times they are coated with seasonings, herbs and ash.
- *Mozzarella* is an Italian cheese, which was traditionally made from buffalo's milk. Today it is primary made from cow's milk, although excellent buffalo mozzarella can be ordered from distributors in South America and Italy. The flavor of fresh mozzarella is directly impacted by the amount of salt utilized in the final stretching, kneading and forming process. Usually it is a smooth, soft mild white cheese that can be smoked, flavored or rolled with different complimentary ingredients creating a stunning presentation.

5. Briefly discuss the different types of soft cheeses available in the market.

Ans: Soft Cheeses: the most popular cheeses available in the market are

- *Bel Paese* is a recent Italian creation made from cow's milk and containing approximately 50% fat. It melts easily and has a wonderful fruity flavor that attracts and keeps many who taste it for the first time. It is usually a party favorite.
- *Brie* is a mold ripened French cheese. It is produced using cow's milk and possesses a fat content of approximately 60%. Prior to it reaching it peak of ripeness, it is firm and chalky. When ripe, its interior is soft and creamy sometimes to the point of having a custardy consistency. This period of peak ripeness will last for a few days. An ammonia smell will begin to dominate the cheese when it over-ripened. At this point, the cheese should not be served. This cheese can be served on its own at room temperature, baked in puff pastry and served hot or stripped of its moldy exterior and blended into a soup to create a full body and full flavor. This is a very popular and versatile cheese.
- *Boursin* is a triple cream cheese from France. It contains approximately 75% fat. This cheese is white, spreadable and usually flavored with either fresh herbs and seasonings or peppercorns. It is sold in small foil wrapped cylinders, which can be quickly unwrapped and served immediately with crackers, etc. This cheese can be used as a flavoring base for tea sandwich. It can be incorporated into hot food preparations such as stuffings or sauces.

- *Camembert* is a French ripened cheese similar in appearance to Brie. It contains approximately 45% fat. It possesses the same ripening characteristics as Brie but has a milder flavor. Camembert's window of ripeness is slightly shorter than that of Brie. Many customers will purchase this product in tins or cans so it will not be exposed to the air thereby stunting the aging process.

6. Name the different types of semi-soft cheeses available in the market?

Ans: There are two most popular semi-soft cheeses available in the market are

- *Gorgonzola* is a bluish-green veined Italian cheese prepared from cow's milk. It contains 48% fat and becomes very creamy when allowed to sit at room temperature. All blue cheeses are versatile, finding uses in salads, dressings, dips, soups, sauces, appetizers, entrees and desserts.
- *Roquefort* is a blue-veined cheese made in France. It is prepared from sheep's milk and possesses a 45% fat content. It is a pungent, salty cheese with a very aromatic quality. As with the Gorgonzola, Roquefort becomes very soft and creamy at room temperature and is very versatile.

7. Discuss the different types of firm cheeses available in the market.

Ans: *Firm Cheeses: the most popular cheeses available in the market are*

- *Cheddars* were originally produced in Great Britain. The United States now producing a tremendous amount of Cheddar as well. The more famous American Cheddars are produced in Wisconsin, Vermont, New York and Oregon. They contain anywhere from 40-50% fat. The best of these Cheddars are aged at least 60 days. Many Cheddars are aged longer and have a sharper flavor and firmer more crumbly texture than their younger cousins. Colby cheese is a cheddar that is prepared with a slightly open-face. All these Cheddar cheeses, come in a variety of sizes, from rounds (wheels), to blocks, to cylinders (longhorns).
- *Emmenthaler* is a Swiss cheese containing approximately 45% fat. It is a mellow, rich and nutty cheese with a light yellow interior and a variety of hole sizes. Authentic

Emmentaler is sold in 200-pound wheels with the word Switzerland stamped on the surface like the spokes of a bicycle. This cheese is considered to be the original Swiss Cheese.

- *Provolone* is a product of southern Italy containing approximately 45% fat. Provolone is sold in a number of different varieties. It can be aged 3 months, 6 months or 9 months, regular or smoked. An older provolone is sometimes mistaken for Parmesan. It comes in a variety of shapes and sizes and is popular in sandwiches, pizzas and pasta dishes.

8. Write an account on different types of hard cheeses available in the market.

Ans: *Hard Cheeses: the most popular cheeses available in the market are*

- *Asiago* is an Italian cow's milk cheese containing approximately 30% fat. This cheese is usually aged for one year at which point it has developed a sharp, nutty flavor with a cheddar-like consistency. Asiago is not as grainy as other hard grating cheeses. It has a very long shelf life if properly cared for.
- *Parmigiano-Reggiano* is a cow's milk made near Parma, Italy. It contains 30-35% fat and is used primarily for grating and cooking. It has a sharp, rich spicy flavor, where a little goes a long way. It is sold in 80-pound wheels with the name Parmigiano-Reggiano stamped all over the exterior. This cheese is produced from mid-April through mid-November.
- *Romano* is a cheese made in central and southern Italy. It is made exclusively with sheep's milk and contains approximately 35% fat. Romano has a brittle consistency and a very sharp tangy flavor. The flavor is noticeably sharper. This is aged in large cylinders and possesses a yellow rind. It is primarily used for grating, but can also be served in small portions with olives, sausages and other antipasto items.

9. Explain the general cheese processing steps.

Ans: The basic principles behind the preparation of natural cheese are pretty much the same today as they were hundreds of years ago. Today, many of the steps have been mechanized.

General Cheese Processing Steps includes

- Standardize the Milk
- Pasteurize/Heat Treat the Milk
- Cool Milk
- Inoculate with Starter & Non-Starter Bacteria and Ripen
- Add Rennet and Form Curd
- Cut Curd and Heat
- Drain Whey
- Texture Curd
- Dry Salt or Brine
- Form Cheese into Blocks
- Store and Age
- Package

10. Mention the typical starter cultures used for the cheese production.

Ans : The metabolism of the starter cultures contribute desirable flavor compounds, and help prevent the growth of spoilage organisms and pathogens. Typical starter bacteria include *Lactococcus lactis*, *Streptococcus thermophilus* and *Lactobacillus delbruckii*.

11. What is the role of starter culture bacteria in the cheese production?

Ans: Typical starter bacteria used in cheese making are either gas producers or acid producers. Gas producers release carbon dioxide, while the acid producers form lactic acid from lactose. It is the gas producers that determine the texture of a cheese and the acid producers determine the flavour.

12. How to pasteurize or heat treat the milk selected for cheese production?

Ans: Depending on the desired cheese, the milk may be pasteurized or mildly heat-treated to reduce the number of spoilage organisms and improve the environment for the starter cultures to grow. Some varieties of milk are made from raw milk so they are not

pasteurized or heat-treated. Raw milk cheeses must be aged for at least 60 days to reduce the possibility of exposure to disease causing microorganisms (pathogens) that may be present in the milk.

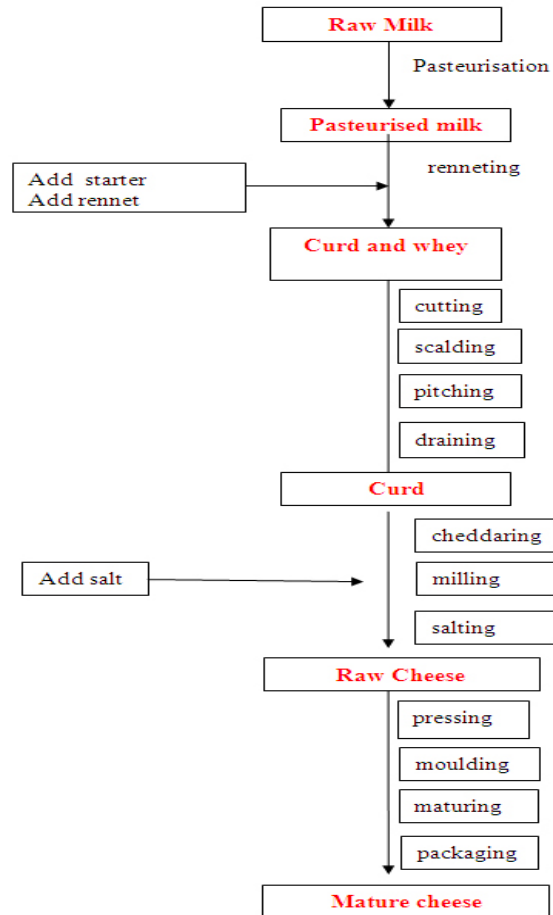
13. What is the purpose of using dry salt or brine during some varieties of cheese production?

Ans : For cheddar cheese, the smaller, milled curd pieces are put back in the vat and salted by sprinkling dry salt on the curd and mixing in the salt. In some cheese varieties, such as mozzarella, the curd is formed into loaves and then the loaves are placed in a brine (salt water solution).

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14. Outline the schematic representation of various stages in the manufacture of cheddar cheese.

Ans: The different stages used for the production of cheddar cheeses are as follows



15. Explain the nutritional composition of the cheese.

Ans: Cheese contains a good number of essential nutrients, including protein, calcium, zinc, phosphorus, magnesium, vitamin A, vitamin B2 (riboflavin) and vitamin B12. The amount of nutrients in cheese may vary depending on the composition of milk used and also how the cheese is made, but the major nutrients found in cheese includes

- Protein – is important for growth and development, and helping to build and repair tissues in the body.
- Calcium – is important for the health of bones and teeth, and for normal nerve and muscle function.
- Zinc – can contribute to the structure of skin, can assist in wound healing, and can also help to support immune system.

- Phosphorus – is important for the health of bones and teeth.
- Vitamin A – is a fat soluble vitamin which is important for vision, for maintaining the health of skin, as well as being important for bones.
- Vitamin B2 (Riboflavin) – is involved in converting energy from food, for use by the body.
- Vitamin B12 – is important for producing cells in the body, such as red blood cells.