

Multiple Choice Questions Strategy Practice

Home cheesemaking

Home cheesemaking has been in practice for thousands of years and comprised nearly all cheese production until the 19th century. While factory cheese production has taken over the majority of the market, many people still make cheese in the traditional fashion.

Milk contains a wide variety of fats and proteins. Some of these are suspended solids and minerals; others are liquids. The process of separating the solids from the liquids is curdling; the white solid remainder is known as curds, and the greenish liquid remainder whey. Cheese is curds in a wide variety of forms. Soft cheeses are little changed from the original curd; they are typically drained but not pressed, and are usually unaged. Semisoft (or semihard) cheeses are drained and lightly pressed, and may be aged. Hard cheeses are drained and well pressed, and are almost always aged.

To cause milk to curdle requires a curdling agent. There are a wide variety of curdling agents available in nature, both plant and animal based - a quick search of the internet will show some to you. In practice, only a few are regularly used in cheesemaking. Vinegar and lemon juice are commonly used in soft cheeses, such as ricotta; they create a sticky curd in small flecks. Tartaric acid is the sharp, lemony curdling agent that makes mascarpone cheese, and creates a very fine sticky curd. For most semisoft and hard cheeses, rennet is used. There are three types of rennet in common usage. The most traditional rennet is an animal rennet; this is an enzyme taken from the digestive tract of mammals. For vegetarians, many companies are producing a "vegetable" rennet. These are not truly vegetable, but are microbial based. There are two types of vegetable rennet. The more traditional rennet is based on non genetically engineered bacteria. Unfortunately, its curd is often ill-suited for many hard cheeses. Typically used in modern times is one made from genetically engineered bacteria that make the animal-rennet style enzymes. In addition to being vegetarian, it has a higher degree of reliability and consistency than animal rennet, and is widely recommended for use in home cheesemaking.

Aged cheeses change flavor due to the microorganisms that metabolize the sugars and produce by-products (typically bacteria related to lactic acid creation) whose taste people enjoy. Note that having the wrong kind of microorganisms, while unlikely to ever be dangerous, will leave your cheese tasting like vinegar or alcohol, which generally tastes quite bad. Both bacteria and molds are used in cheeses for aging. Bacteria are used in almost every aged cheese. There are two main types:

thermophilic (which are found in yogurt) and *mesophilic* (which are found in buttermilk). There are various species that belong to each category, but as an amateur, the home cheesemaker doesn't need to worry about that. As for molds, there are a wide variety that are used, and each has its own unique properties and flavors. Some of the more widely used ones are *Penicillium roqueforti* (blue cheeses) and *Propionic shermani* (Swiss cheeses). Molds, unlike the bacteria used in cheeses, can spread from cheese to cheese, and thus should be isolated as much as possible when aging. The longer a cheese is aged, the stronger it tastes; this is why Parmesan cheese and Pecorino Romano cheese have such strong flavors. Additionally, cheeses with molds, such as blue cheeses, often develop their flavor faster than those without molds.

Color is related to two things: the natural color (which is usually a creamy white to pale yellow), and additives. The most common color additive is annatto, an extract of the dark red seeds of plants in the *Bixacae* family, typically grown in South America. Their dark red/orange color dilutes into the typical cheddar-yellow that we're all familiar with. Annatto coloring is generally available in two forms: powder and liquid. The powder can take time to dissolve, and should be added as early in the cheese making process as possible (preferably during pasteurization, as the heat helps it dissolve). The liquid extract is easily mixed in, and can be added at any point before the curdling agent is added.

Traditional food coloring does not work well at all for coloring curds; it tends to remain in the whey instead of the curd. However, adding food coloring to uncolored curds after they have been drained but before they have been pressed leads to an attractive mottled pattern rarely found in commercial cheeses.

General home cheesemaking rules

- Always pasteurize your milk - even if you bought it from the store. Leave your utensils in it while you do this. This will sterilize your pot and utensils, and guarantee that the only things in the milk are going to be what you put there.
- When pasteurizing milk, do not forget to stir. If you're forgetful, set a timer. If you forget to stir, the milk will scald; scalded milk should never be used.
- Do your best to avoid contaminating your sample. Try not to put anything that's not clean (including unclean hands) into your cheese.
- Make milk-cheeses in batches of at least two gallons to save time (this requires a large pot).

Questions 1-10

Choose the appropriate letters A, B, C or D

1. Most cheesemaking



- A. was done at home until the middle of the last century.
- B. is nowadays done industrially.
- C. was done in traditional factories in the 19th century.
- D. is currently performed by traditional means.

2. Curds

- A. are one substance that remains when the solid and liquid fats and proteins in milk are separated.
- B. come in various forms but are often greenish in colour.
- C. are a component of cheese as well as whey.
- D. are used to make milk from fats and proteins.

3. Pressing

- A. is performed most in the case of hard cheeses.
- B. is rarely performed in the case of semihard cheeses.
- C. is generally performed, but only a little, in the case of soft cheeses.
- D. is never performed when the cheeses are aged.

4. Vinegar, lemon juice and Tartaric acid

- A. can only be used in the production of semisoft cheeses.
- B. are present in milk as natural agents.
- C. are all sticky substances.
- D. can be added to milk in order to make it curdle.

5. Rennet

- A. can only be used in the manufacturing of cheese when it is genetically modified.
- B. is a curdling agent that can be suitable for vegetarians.
- C. is traditionally given to animals to help them digest enzymes.
- D. is a more reliable curdling agent when it is animal-based.

6. Microorganisms

- A. make eating certain cheeses less dangerous.
- B. cause aged cheeses to exhibit certain flavors.
- C. increase the sugar content of cheese.
- D. are produced by the action of lactic acid.

7. The molds used in cheeses

- A. cause the cheeses to develop flavours more quickly than the cheeses that don't have molds.
- B. can only move from one cheese to another when they are accompanied by bacteria.



- C.** all have very similar tastes.
- D.** are only used in blue cheeses.

8. The additive annatto

- A.** is the only determiner of a cheese's colour.
- B.** should not be added to the cheesemaking process as early as the pasteurization stage when it is in powder form.
- C.** in its liquid form should be added during curdling.
- D.** is responsible for the well-known colour of cheddar cheese.

9. Conventional food coloring

- A.** doesn't usually color the whey.
- B.** is often used in commercial cheeses.
- C.** can be an effective coloring agent for curds if added at the right moment in the process.
- D.** can help the draining process.

10. It is a good idea when making cheese at home

- A.** to pasteurise your milk and sterilise your utensils separately.
- B.** to use a timer to prevent you from pasteurizing the milk for too long.
- C.** to only contaminate your cheese with your own hands.
- D.** to make cheese in large quantities as a means of saving time.