

CHEESEMAKING 101

**CREATED BY
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OUTLINE

- History
- Process
- Ingredients
- Demo



HISTORY

- Cheesemaking is documented in Egyptian tomb drawings and in ancient Greek literature.
- May have originated from nomadic herdsmen who stored milk in vessels made from sheep and goat stomachs. The stomach linings contain a mix of lactic acid, bacteria as milk contaminants and rennet, which caused the milk to ferment and coagulate.
- Cheese is more compact and has a longer shelf life than milk



A Roman Era cheese press found in Kent, England.

PROCESS

Culturing

- Ferment the lactose into lactic acid

Coagulation

- Rennet is added to separate the fat (curds) from the whey (liquids)

Draining

- Separate the curd from the whey

Scalding (hard cheeses like cheddar)

- Cut the curd and heat to promote the release of more whey
- Press to allow the curd particles to bind together

Ripening (soft cheeses like camembert)

- Allow surface mold to grow and the mold-ripening of the cheese by fungi

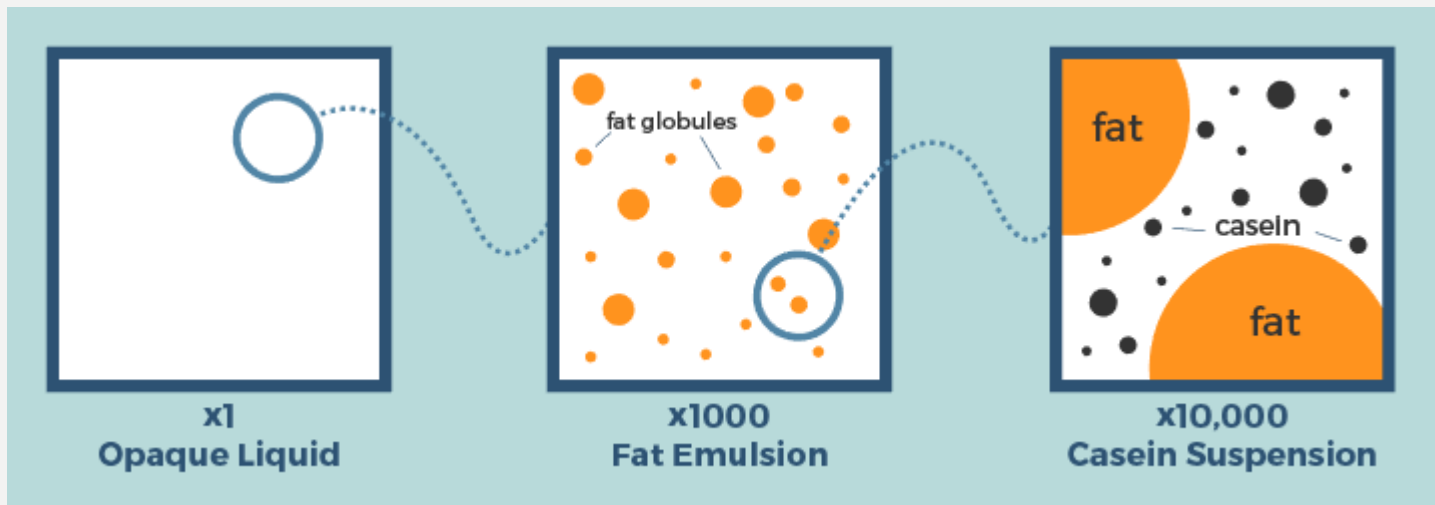
INGREDIENTS

- Milk
- Rennet
- Acid
- Salt
- Calcium Chloride
- Flavorings



MILK

- Most important ingredient in cheesemaking process
- Milk is an emulsion – a dispersion of fat and casein in water
- Homogenization: fat globules are broken into smaller pieces
 - Prevents milkfat from separating as easily, delays the formation of curds
- Pasteurization: heating milk to kill bacteria or mold present
 - Ultra-pasteurization can also destroy the proteins (casein) in the milk, disrupting the binding process



MILK

- Need whole dairy milk – curds are largely milkfat
- Can use Raw, Pasteurized, Homogenized, or Pasteurized and Homogenized milk
 - Raw milk *can* carry dangerous bacteria
 - Non-homogenized preferred
- If those cannot be found, cream can be mixed with milk
- Locally, Homestead Creamline is minimally processed and works very well for cheese
 - Non-homogenized and minimally pasteurized



RENNET

- Enzymes produced in the stomachs of some animals
- Many modern types of rennet come from vegetable or microbial sources
- Used to separate milk into solid curds and liquid whey
- Many soft cheeses (cream cheese, paneer, etc) are produced without use of rennet, by coagulating milk with acid



ACID

- If cultures are not used to ferment lactic acid, an acid must be added to separate the curds from the whey
- Citric acid is commonly used, but lactic acid or acetic acid are also used
- Lemon juice or vinegar can be used if acid cannot be sourced



SALT AND FLAVORINGS

- If the cheese is fermented, salt halts the fermentation process
- Salt also helps preserve the cheese and add flavor
- Flavorings like dried fruit, smoke, herbs, etc add more complexity to a cheese
 - More common in soft cheeses
- Calcium Chloride produces firmer setting curds
 - Can improve yield from store bought milk



LOCAL RESOURCES

- Standard Grocery Store
 - Salt, Homestead Creamery milk, flavorings
 - Do not use Junket rennet tablets – it is much weaker than cheese rennet
- Eats Natural Foods
 - Rennet, citric/malic/lactic acid, various milks (including goat)

MOZZERELLA DEMO

1. Prepare Rennet
2. Mix Citric Acid & Milk
3. Heat Milk
4. Add Rennet
5. Cut & Cook Curd
6. Transfer & Drain Curd
7. Heat Curd & Remove Whey
8. Knead & Stretch Curd

