

Finest Kind

CHEESE KIT
MANUAL

COMPOSITION OF MILK AND ITS AFFECTS ON CHEESE

The composition and quality of the milk are important factors in the cheese making process. Milk is made up of 87% water, 4.8% lactose, 3.4% protein, 4% fat and .8% minerals. It is best to use full cream raw milk but if this is not obtainable, then next best is full cream pasteurized milk. Most milk available from the supermarket is pasteurized and homogenized. If pasteurized or pasteurized and homogenized milk is the only source you can access, then the Calcium Chloride supplied must be added to the milk. Rennet requires calcium to coagulate the milk which may have been affected by these process's. Make sure the milk is as fresh as possible.

50U FLORA DANICA DVS CULTURE

The "good" bacteria used to produce dairy products are also called cultures or starter cultures and are the most important ingredient in cheese making. The bacteria consume the sugar (lactose) in the milk and produce lactic acid. At a later stage the bacteria are also responsible for breaking down proteins and fats giving cheese its aroma and flavour.

The freeze-dried DVS cultures are supplied in 50U alufoil bags. 50U means 50 Units which is enough for the production of 250 liters soft cheese. DVS means Direct Vat Set—it can be added directly to the milk. The DVS cultures should be stored at -18°C or below (deepfreeze). If a portion of the culture is used, cut open a corner of the packet and close immediately by taping down with sticky tape. Place back in the deep-freeze. No items should be inserted into the bag such as spoons. If too much culture is poured out the excess should not be returned to the packet. The culture must be kept dry. The culture must not be dispensed into another container.

RENNET

Rennet is an enzyme added to milk in order to coagulate the milk thereby separating the solid part from the liquid part of the milk. Coagulation of milk is the fundamental process of cheesemaking. The coagulation process is governed by temperature, acidity and calcium ion concentration. Store in the fridge (but not in the door)

CALCIUM CHLORIDE

Add to milk, especially store bought milk, if you are getting a sloppy coagulation. Dosage for cheese: 5 drops per liter milk. Add to milk before the rennet and stir well. Dosage for brine: 15 ml per liter water. Prohibits calcium leaching from the cheese in the brine. Store at room temperature.

SALT

Salt preserves the cheese and makes it less susceptible to bacterial infestation. The taste of the cheese is improved. It is best to use un-iodised salt as supplied. The more moist the cheese, the more it will absorb salt. Salt kills a portion of the "good bacteria" which slows the acid production in your cheese. The bacteria killed by the salt release their enzymes into the cheese which break down the proteins and fats giving the cheese its aroma and flavour. If you find your cheese too salty, simply make a weaker brine solution or add less salt to the cheese.

MEASURING ACIDITY

The culture or "good bacteria" feed on the lactose in the milk and produce lactic acid. The acid helps to preserve the cheese. One way to know that your bacteria are alive and kicking is to measure the acidity of the whey using the pH sticks provided. Wet the pH sticks with the whey dripping from the mould or by dipping it in the whey. The middle block will change colour. Compare the colour with the blocks with numbers on them and read off the pH. The smaller the number the higher the acidity. The pH sticks are also required to make brine for the feta as the brine must be slightly more acid than the cheese. Use the citric acid provided to acidify the brine.

CLEANING

Clean all equipment well after and before use. Rinse in warm water, wash in warm water with a good detergent and sterilise in a weak solution of sodium hypochlorite (25ml Jik/5 liters water). Air dry. Before use rinse well in clean water and towel dry with paper towel. Alternatively boil equipment for 5 minutes in clean water.

FROMAGE FRAIS

Fromage Frais is a soft fresh cheese similar to smooth cottage cheese or quark. It is easy to make but because of its high moisture content it has a short shelf life.

MILK: 2 liters full cream milk (3.5% butterfat). Use milk directly after milking or use fresh pasteurized milk.

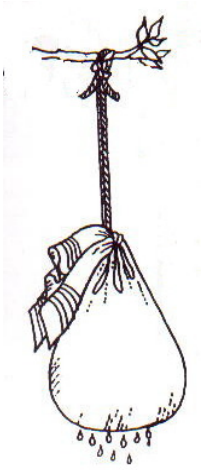
MILK TEMPERATURE: 18°C - 24°C

CULTURE: Add a teaspoon tip of DVS Flora Danica culture to the milk.

RENNET: Dosage: ½ a drop rennet. Add 1 drop of rennet to 50ml cool water and add 25ml of this solution to the milk.
STIR WELL !!!!
Let the milk stand undisturbed and covered at 18°C - 24°C until it has set like jelly and a little whey has appeared on the surface. It should have a **dull** appearance. This should occur within 12 – 24 hours, usually 16 hours.

DRAINING OR MOULDING
At this point one can either use:

A. BAG METHOD (Maas Kaas) or
(lactic cheese)



Carefully ladle the curds into a cheesecloth lined co4lander, tie the four corners of the cheesecloth together and hang the cheese to drain over the sink. Collect the whey in a pot. Once the cheese has drained, 1 – 2 days, mix the cheese with some salt and place in a container with a lid in the fridge.

If the cheese is too dry, return some of the collected whey to the cheese. The cheese can be made smooth with an electric cake mixer.

Add a little cream if desired.

B. MOULD METHOD

Carefully ladle the curds into the mould supplied. Fill the mould to the top, wait a while and fill it some more. Place the mould on a cake rack which is placed over a container so that the whey can drain into the container.

SALTING THE CHEESE

Salt the surface of the cheeses. Turn the cheese after 8 hours or when it is firm enough to be turned. Turn the cheese after salting by removing it from the mould onto the palm of your hand, turning it around by letting it fall into your fingers, and placing it back into the mould.

Salt the other side of the cheese. Turn the cheeses twice more with intervals of 8 hours. If you have a very hot climate you can place the cheeses in the fridge to drain. The cheese should drain in the mould for a total of 24 – 36 hours or until it is firm enough to be removed from the mould. Place the cheese on the draining gauze, in the fridge. Make sure you do not have mouldy vegetables or strong smelling food in the fridge. Spores from the moulds that travel unnoticed through the air land on your cheeses! Turn the cheese after 6 hours and then every 12 hours.

MATURING THE CHEESE
This cheese can be eaten at various stages:

SOFT
While still draining in the mould with jam or sugar and fruit.

SEMI – SOFT
When it has air dried for a few days it can be eaten as a spread on bread or crackers. It can be rolled in dried or fresh herbs such as origanum, black pepper or chives. To make the cheese more interesting one can use different shaped moulds, such as H984, H901, H986, H985. See our on line shop.

If you add a little more cream to the milk before starting and use heart shaped moulds, you will have a *Neufchatel* cheese.

If you use a roll mould, and spray the penicillum candidum, H060, mould onto the cheese while it is drying, you will have a S*aint Maure* cheese. Here you must be careful as the mould prospers on all the cheeses in the fridge.

The cheese can also be preserved in olive oil with a few dried herbs – ½ tsp. Thyme, ½ tsp. Rosemary, 4 black peppercorns and 1 clove of garlic per liter of olive oil.

MOULDY
The cheese can be left to dry for some time. It will become quite hard and first get a white mould then a blue mould. The French love it like that, but it is an acquired taste! For re-sale purposes the cheese can be wrapped in H206 butter paper cut to size and tied with a thin blue ribbon (available at C.N.A) or natural raffia. One can even wrap them in vine leaves and tie them with raffia – soak the vine leaves in brandy overnight before wrapping – it gives the cheese a wonderful taste!



CHEVRE

Chevre is made from goats milk. Follow the same procedure as for Fromage Frais but make sure to add Calcium Chloride to the milk and increase the rennet slightly by adding 40ml of the rennet /water mixture to the milk (3/4 drop rennet)

CREAM CHEESE

Follow the same process as for Fromage Frais but use the Bag Method to drain the cheese, add 500ml pasteurized cream to the drained curd and make the mixture smooth with an electric cake mixer. If the cheese is not dry enough, drain in the cheese cloth for a little longer.

Fromage Frais moulded in different shapes with herbs sprinkled over them.

FETA CHEESE

Recipe for smaller Cheese Producers

Summary:
3.5 – 4% milk at 32°C
Add 2% mesophilic culture
Add additives
Add rennet
Stir 2 minutes
Set 1 hour
Cut 5 minutes
Stand until ½ curd, ½ whey
Mould until pH 4.6
Brine

Milk: 2 liter whole milk with approx. 3.5 – 4% cream.

Temperature: Place milk in a pot which is wide rather than deep. Adjust the milk temperature to 32°C.

Starter: Add a teaspoon tip of the Flora Danica culture. Let the milk stand at 32°C (pre ripen) for 30 minutes.

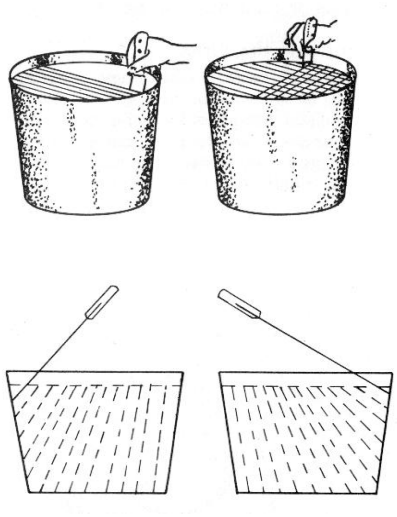
Calcium Chloride: Add 5 drops to the milk.

Rennet: Re-heat milk to 32°C. Dilute 8 drops rennet in a little cool water before adding to the milk.

Stir well!!!

Let the milk stand at 32°C for 45-60 minutes or until the milk has set like jelly. The pot can be placed in a water basin (bigger pot or basin filled with water) at 38 - 40°C to maintain temperature while the milk sets. Test the curd to check whether it has set by inserting a knife and pulling it to one side. The knife should make a clean cut.

Cutting: Cut the curd into 12mm cubes with a long sharp knife Cut down and across and at an angle as pictured below.



Resting: Let the curds rest for 1 - 2 hours or until there is as much whey as curd. Take care to maintain the temperature at 30°C using the water bath.

Moulding: Drain the whey and fill the mould to the top with curd. Handle the curds gently. Herbs such as HU09, HU231 (see the on line shop for herbs) can be mixed into the curd before moulding. Let the cheese drain at room temperature for 12 - 48 hrs or until the pH of the whey is 4.6. Turn the cheese 3 times while draining. It is important that the cheese is not placed in the brine before the pH is at least 4.8. The cheese will melt in the brine if the cheese does not have the correct pH. In winter the cheese can take a number of days before it reaches a pH of 4.8.

Brining: Place the cheeses in a saturated 10% brine solution. Make up the brine by adding 100 gram salt and 15ml CaCl to every liter water. Correct the pH of the brine to pH 4.4 by adding a tiny pinch Citric Acid and testing with the pH sticks as you go. The pH of the brine must be lower than that of the cheese. The cheese must be totally immersed in the brine.

Ripening: Allow the cheese to mature at 10 - 14°C for 1 - 3 months. Or in the fridge if you are unable to maintain temp at 10 - 14°C

Cleaning: Clean all equipment well after and before use. Rinse in warm water, wash in warm water with a good detergent and sterilise in a weak solution of sodium hypochlorite (25 ml Jik/5 liters water). Air dry. Before use rinse well in clean water and towel dry with paper towel. Take care not to leave sodium hypochlorite residue on the equipment.

HALLOUMI CHEESE

Halloumi is a favourite cheese in Cyprus, Greece and Lebanon. In Cyprus, it is frequently made in the home when plenty of milk is available. Sheep's milk is traditionally used, but cow's milk gives a satisfactory result. The Cyprus home cheese maker uses reed baskets called talaria for draining the curds. Sprinkle cheese after salting with black cumin seeds or dried mint.

Milk: Use 2 liters whole milk with 3.5% cream.

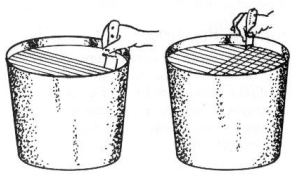
Temperature: Place milk in a pot which is wide rather than deep. Adjust the milk temperature to 32°C.

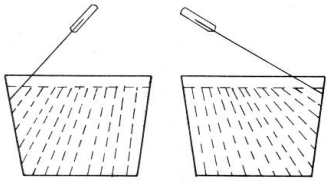
Starter: Add a teaspoon tip of the Flora Danica culture. Let the milk stand at 32°C (pre ripen) for 30 minutes.

Calcium Chloride: Add 5 drops to the milk.

Rennet: Re-heat milk to 32°C. Dilute 8 drops rennet in a little cool water before adding to the milk.
Stir well!!!
Let the milk stand at 32°C for 45-60 minutes or until the milk has set like jelly. The pot can be placed in a water basin (bigger pot or basin filled with water) at 38 - 40°C to maintain temperature while the milk sets. Test the curd to check whether it has set by inserting a knife and pulling it to one side. The knife should make a clean cut.

Cutting: Cut the curd into 12mm cubes with a long sharp knife Cut down and across and at an angle as pictured below.





Heating: Heat curd to 40°C very slowly over 10 - 15 minutes on low heat while stirring gently. Place pot back in water bath with temperature of water at 45°C. Leave for 45 minutes at 40°C and stir every 5 - 10 minutes. Add hot water to water bath to ensure correct temperature is maintained.

Draining: Pour curds into the mould supplied. When drained, wrap curd in cheesecloth and place on a board. Place a board on top of the cheese and a 1 - 2 kg weight on the board. Press for 1 hour or until the cheese is flattened to a desirable height for frying.

Boiling: Return collected whey to original pot and heat to 90°C . When curds are well-drained and compact, cut into 5 - 6 pieces and carefully put pieces into whey. When cheese floats lift out each piece and place on a plate.

Anari: Add a sprinkle of citric acid to the whey and stir. Drain the whey through cheese cloth to collect the curds. The curds are like ricotta but called Anari.

Storing: Cheese may be eaten when freshly made, or allowed to mature in salty whey for 6 weeks. Sprinkle salt on both sides of the cheese if frying immediately. Or place in a sterilized jar, dissolve 4 tablespoons salt per liter whey and pour over cheese. Seal and store in a cool place at approx. 12°C or in the fridge.

RICOTTA

Ricotta is a whey cheese. Fresh whey must be used. 5 liters of whey will give just 1/2 cup of cheese.

Save the whey from the cheese you have made. Add 500ml milk if you want a better return.

Heat the whey in a pot on the stove to 90 - 93°C.
While stirring turn off the heat and add a pinch or two of citric acid to the whey. You will notice tiny white particles forming. Stir for a few minutes. If you do not notice the tiny white particles, add a little more citric acid. If you still find no little white particles, switch off the stove and leave the whey to stand and cool for a few hours. You may then notice the particles of cheese at the bottom of the pot with green clear whey above. Continue as below.

Line a colander with cheesecloth and pour the pot of whey into the colander. Tie the four corners of the cheesecloth into a knot and hang the cheese to drain until the cheese stops draining.

Place the cheese in a bowl and add salt, herbs or cream as desired.

Place the curds in the mould provided and drain overnight in the fridge. Turn out the next day for a beautifully shaped ricotta cheese.

The cheese will last for one week in the fridge.

PANEER

Paneer is used in many vegetarian Indian Curries. India produces more milk than any other country. Paneer was made from Buffalo milk but cows milk works well.

Heat 2 liters whole full cream milk to 85 - 90°C. Stir while heating to avoid burning the milk. Or use a double boiler. Hold the temperature for 20 minutes.

Add 1/2 tsp citric acid to 1 cup of warm water of 75°C.

Allow the milk to cool to 75°C.

Add the diluted citric acid to the milk and gently stir. Continue stirring until you see white curds and greenish whey. Allow the curds to settle for 20 minutes.

Partially remove the whey. Line a colander with the cheesecloth and drain the curds for 30 minutes. Collect the whey to make pancakes or rusks.

Once drained pull the cheesecloth tightly around the curd ball and place a plate on top of the curds. Place approximately 4kg weight on the plate. Its easiest to use a pot or bucket filled with warm water. Press for 10 - 15 minutes.

Store in the fridge. Shelf life is approximately 4 days if unsalted. If salted and placed in an airtight container, it will last a little longer.



Checking if the curd is set before cutting.



Cutting the curd.



Pressing Halloumi wrapped in cheesecloth with a board underneath and boards on top with weights.



Halloumi— the finished product