Dairy Foods Consulting
Westminster Artisan Cheesemaking
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Artisan Cheesemaker

Camembert and Brie

Although similarities occur in the way these cheeses are made and ripened, Camembert originated in Normandy and Brie in the Ile-de-France, a region surrounding Paris. Another difference between Brie and Camembert is the size. Brie is made in one-kilo 9" diameter (2.2-2.5 lb.) and Grand 14.5" diameter (5-6 lb.) wheels; Camembert is made in a 4" diameter (250 gram or 8.5 oz.) disc. The thickness of both is approx. 1.25".

In the traditional methods of making of these cheeses, raw milk is used and the cheeses are aged a minimum of 21 days before sale. The well known raw milk Brie cheeses are Brie de Melun and Brie de Meaux. The Camembert de Normandie should have "au lait cru" and "moule a la louche" displayed on the label to be authentically made from raw milk. When the curd is ladled by hand, it drains for a longer time, up to 48 hours, before the cheeses can be removed from the forms. Hand salting with a coarse flake salt is required. These three cheeses are designated as A.O.C. so the names are protected and the entire processes of making the cheeses follows strict guidelines.

This recipe was developed by the French cheesemakers that I worked with from 1986-1987. They made the A.O.C. Brie de Meaux and Brie de Melun but adapted this recipe to provide a more modern approach for making these traditional cheeses from pasteurized milk. Some of the techniques were developed to preserve traditional characterisitcs while others were done to shorten the process. The milk was "pre-ripened" with a small dose of mesophillic aromatic culture to preserve the natural balance of bacteria and to make a little lactic acid, which prepares the milk to behave in a more traditional manner. When the pre-ripening bacteria are destroyed during pasteurization they release enzymes that enhance the aging process to create a stronger-flavored cheese. The whey draining process was shortened to less than 24 hours by the use of more active lactic acid producing cultures. We always made Brie and Camembert from the same milk on the same day but the curd cutting and hooping were done differently. After cutting the vat into vertical slices, the Brie curds were ladled by hand with a "pelle," which is platter-shaped, perforated, stainless steel tool that can slice horizontally through the curd. Camembert curds were cut into hazelnut-sized cubes and dipped from the small vats with 5-liter capacity, solid, stainless steel scoops. I have modified this recipe by ladling the Camembert by hand after slicing it into vertical ribbons. In this case, the molds must be one inch higher and the whey takes one hour longer to drain before the cheeses can be turned for the first time.

All times are approximate. Note that molds are added to the milk and sprayed on. Some cheesemakers also do one or the other. This recipe is intended to be used with cow and goat milk. A sheep milk recipe, because the curd drains faster, may need some changes in starter and rennet amounts and a lower temperature to produce a soft cheese. I have added some notes for using sheep milk. The same methods used for salting, spraying the mold, drying, and aging used for the Brie and Camembert cheeses made from cow and goat milk can be used for the goat cheeses made from lactic curd.
The temperature of the make room on day two should be75-80 °F. It should decrease to 68 °F overnight.
We used to use 200-300 gallons of milk to make a batch of 240 to 360 lb. cheese.

DAY ONE

2:00 PM
Standardize milk to 3.3-3.4% Fat or protein to fat ratio of 0.90. This will make
cheese that meets the minimum of 45% fat-in-dry matter. Milk can also be used whole or fortified with cream to make higher fat cheeses.

4:00 PM
Hold milk at 45-48 °F. Add 0.2% Flora Danica bulk culture or
0.25 DCU CHOOZIT MM100 or MM101 for 100 lb. milk.

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DAY TWO

8:00 AM
Pasteurized milk at 92-93 F (90 °F sheep milk).
Add starter using:
Add 5 DCU EZAL MM100 or MM101 for 100 lb. milk
or
1% ABIASA Aroma B + 0.5% ABIASA Thermo B bulk cultures to 100 lb. milk,
Add CHOOZIT Penicillium mold, one dose per 1,000 lb. milk .
Add CHOOZIT Geo 15, one fifth dose per 1,000 lb. milk
pH 6.60-6.70 .
%TA .16-.18

10:00
Add 8-9 ml single strength rennet per 100 lb. cow and
goat milk or 5 ml per 100 lb. sheep milk
into vats containing no more than 26 gallons milk.
Wait 10 minutes between each vat to add the rennet.
Check for initial flocculation point (usually in 12-14 min).
Allow the curd to sit for 6 x the coagulation time from
adding rennet (e.g. 72-84 min.). The vats take 10 minutes to empty when when two people are ladling curds.
pH 6.50-6.55
%TA .17-19

11:45
Cut the curd vertically with a single-bladed saber into vertical ribbons 1" x 1". Alternatively, for Camembert:
Cut the curd vertically and horizontally into hazelnut-sized (0.75 inch) cubes. Rest the curds for 10 minutes
pH 6.40-6.45
%TA of whey .11-.13

12:00
Remove the excess whey from the top of the curds and ladle curds into draining forms sequentially taking 1/2 inch slices of curd from the vat and lowering them gently into the forms. The forms are 5" tall for cow and goat milk and 3" tall for sheep milk. Alternatively, for Camembert: After removing the whey the curds are turned over slowly until the bottom curds are on the top, whey is removed from above the curds, and they are dipped out with a 5-liter capacity scoop. Filler trays are needed to distribute the curds evenly to the molds (4" high forms are used). The forms must be filled quickly (under 10 minutes).

1:30 PM
First flip time (end for end)
pH 6.20-6.30
%TA .14-.16

3:00 PM
Second flip time
pH 5.70-5.90
%TA .25-.30

4:30
Third flip time
pH 5.30-5.50
%TA .50-.60

6:00
Fourth flip time. After the last flip, the room temperature is decreased slowly from 75 °F to 68 °F during a ten hour period (overnight) to control the fermentation and to prevent shocking the curds when they are moved to the salting room. The curd pH will decrease slowly to 4.70-4.80 by morning. Room temp should be 68 °F.
pH 5.10-5.30
%TA .70-.90

DAY THREE
8:30 AM
Remove the cheese from forms and salt surfaces with flake salt (Morton or Diamond Crystal Kosher is the proper particle size) and place on wire racks. Move cheeses to the drying room. Conditions in the drying room should be 58-62 °F with 80-85% RH and moderate ventilation.
pH 4.70-4.80
%TA of whey 1.00-1.10

10:00
After the salt has dissolved, spray (mist) the cheeses with one dose Penicillium white mold and one fifth dose Geo 15 mixed in 1 quart of distilled water per 1,000 lb. of original milk weight.
10:30
Turn cheeses and salt the other side.

12:00
Spray Pen./Geo. solution on top and sides of all cheeses

DAY FOUR

8:00 AM
Turn cheeses on racks and continue dmove to curing room at 52-54 °F and 95-97%
RH. Turn cheeses on racks when first signs of mold growth appear. Turn every 2 days until mold growth is complete.

After 7-10 days, move to the packaging room for at least 2 hours to dry the cheese surfaces. Package in appropriate wrapper, 2 ply (wax-coated paper with perforated plastic sheet) and move the cheese to a colder room with 48-48 °F with 85% RH to age for at least 14 days before sale. The cheese should keep for 14-20 days more until it becomes over ripe. The cheese can be moved to a refrigerator at 38 °F after packaging or cold ripening to extend its shelf life.

NOTES TO ACCOMPANY THE BRIE AND CAMEMBERT RECIPE

The following method of cheese-making is appropriate for this recipe:

The culture may be added to all of the milk, up to 104 gallons, in the vat pasteurizer at once. If more milk is used, stagger the starter culture addition for the next batch by time it will take to ladle the curds from 104 gallons.

When it is time to add the rennet, the milk is drawn out of the vat into 26 gallon (100 liter) single-wall vats that can be made of plastic or stainless steel. The 18-20 ml of single-strength rennet is added to each vat separately.

Wait 20 minutes before adding rennet to the next vat in line, which is the time it takes for one person to ladle the curds from the vat (if two people are ladling, the time can be 10 min. between vats). When the renneting is staggered in this manner, the curds for each individual cheese are very similar in their draining characteristics. This is very important for obtaining uniform quality cheese.

Once the curds are in the forms, they are turned frequently (4 times all together). This assures even whey drainage and prevents concavity from forming. A system of two-stage cheese block forms resting on a single drain matting and drain tray is the best for this method. To turn the block form for the first time, the curd must be drained to the level of the first (bottom) stage. The second (top) stage of the form is removed, a second matting and drain tray are placed on top of the first stage of the form, and the entire block form can be turned over. This is done in the "Servy system." The "Mino-Gaillard" and "Alpma" systems have drain matting incorporated into the block forms. There are also full (4") length individual Camembert forms, which can be used. It will take longer for the curds to drain before the first flip.

Less than one half-gallon (4.2 lb.) of 3.4% fat milk will make approx. two 250-gram Camembert cheeses.

Approx. two gallons (16.5-17 lb.) of 3.4% fat milk will make one 1-kg. Brie cheese.

For Jersey milk the yield is one Camembert from 3.8 lb. milk and 1 Brie from 15-16 lb. milk. These cheeses are closer to a double-creme due to the 4.5-5% fat milk.