Icelandic Sheep Breeders of North America

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Editor Kathy Hayes

Farmstead Cheesemaking Part 1: Why Use Natural Ewe's Milk? Plus Feta 101

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I am crazy for cheese. I need cheese. I am an aficionado, relishing the oh-so-mild to the old-smelly-sock pressed curd experience. When savoring a delectable morsel, it is an other-worldly experience…I am transported to a petite crofter's holding in Champagne, or perhaps to the mountains of Nepal with a yak casting a wary glance in my direction. Lately, I haven't left our farm. Ahhh, at last, one of my long felt desires has come to fruition. As long as I have my sheep, I will have cheese. And so can you. Keep reading and, as part one of the baptism by whey, I'll turn you on to our feta method (skipping the trials and tribulations of course!).

The Journey

I am curious about the whole cheese-making process. I am intrigued by the balance of science and art that seems integral to this oh-so-ancient tradition. At Back Forty, with our typical rash-step-over-the-cliff's-edge approach to new adventures, we brashly purchased rennet and penicillium inoculations and went to work. No yogurt or cream cheese for us! Our first cheese mountain to be conquered was to be cambozola: the cheese of dreams…perhaps nightmares now. In retrospect, I shake my head at our boldness! What cheek…expecting to have an artisan's sensibility without earning the colors of the trade. The cheese itself was wonderful, but it wasn't exactly cambozola. The journey had begun as we tried to discover what went astray in the cambo experience. Now, a many cheeses later, the climb up the mountain is truly underway, and I thought I could chronicle some of the adventure. Maybe I could share a slice of my newfound cheesemaking passion with other budding artisans who have a few sheep they could milk to make some cheese for their own use. Here's a couple of things learned so far on this trip, and also our method for making feta cheese. Oh, and some brine tips as well, but mind you, the brine lore is still in progress.

Why ewe's milk?

There are many answers to this seemingly simple question ranging from the scientific to the philosophic. For me, well, I don't have a Jersey cow and I don't have goats. We have sheep. So, it makes sense to use ewes' milk (from those gurls that allow me to pilfer their milk, that is!). A bigger bonus is you get more cheese for your milking dollar. You can almost double the volume of cheese produced if you use sheep's milk than if you use, say, cow's milk. That's significant for the cheesemaker. The milk proteins per 100 grams in sheep milk (5.3%) is almost a third more than in jersey cow (3.3%) or goat (3.1%) milk. As a curiousity, reindeer milk has 8.4 % proteins per 100 grams…that's serious milk (and after reading *Independent People* by H. Laxness, I can now see why Bjartur wanted that reindeer so badly). Last, and perhaps most important, ewe's milk cheeses are superior for their complexity and depth in taste (perhaps a slight bias can be detected!). We suffer through mediocre and bad cheese from the grocery store and even occasionally lousy imported cheese that has been in overseas/overland transit way too long trying to satisfy our cheese craving. And, if you're lucky, you might even find some imported ewe's milk cheeses from the store that are somewhat palatable. Granted, there are artisan cheese makers out there that are busy producing fabulous cheese, but, for someone like me, who rarely gets off the farm, never mind the big trip to the "city" to find these delectable cheeses, I used to have to

settle for, gulp, grocery store cheese. No more!! I can't believe I wasted so much of my cheese appreciating life this way.Ewe's milk cheese made on your own farm with raw milk is truly a piece of heaven for your palate. You can't go back. But be warned, be very careful who you share your cheese stash with because they will hound you relentlessly for more cheese. It is addictive. It is intriguing. It is beguiling. It is healthy. It is real cheese in all its glory and splendor. I guarantee that the ewe's milk cheese you produce in your own kitchen is like nothing you've ever experienced before. Throw off the shackles of inferior cheese and get whey into it!

Natural milk vs. cooked milk

Some folks have labeled natural milk, raw. At Back Forty, we disagree. In our minds, the so labeled "raw" milk is real, natural milk, and the pasteurized stuff is cooked milk. I have a theory about the origins of the "raw" label and the intended connotations of the word raw, but that rant is probably best left for another time. Most major cheese outfits in North America love to pasteurize to make a cheese that lasts an eon and create a uniform end product that is palatable to a mass of consumers. More "raw" milk cheese is eaten in the rest of the world and a lot of unpasteurized milk is consumed too. There is legislation in Europe actually requiring certain cheeses to be made with unpasteurized milk!! Unpasteurized milk is unbeatable if you can assure a high level of cleanliness during milking and immediate refrigeration/freezing. For the farmstead producer, essentially you have the choice to cook (or pasteurize) your milk or not! The impetus behind pasteurization is that many of those harmful bacteria are destroyed with the high pasteurization temperature (if everything else is sanitary and hygienic). That's great, but there's always a price. The flavor that is inherent in natural milk disappears in pasteurization since most of the micro flora are also destroyed during the pasteurization process, so you will always have a radically different cheese (in my opinion, inferior) than if you use uncooked milk in your creation. If you use raw milk and you are thinking of selling/sharing it, the cheese must be aged at least 60 days at 35 degrees F or above according to USDA/CFIA regulations…this allows those harmful bacteria to expire on their own (of course, if you are legally selling your cheeses there is an interminable list of other regulations with which you need to be compliant). And of course, hygiene plays a key role in whether a cheese is edible or not regardless of the type of milk used. So, the decision you as a cheese maker have to make is to pasteurize or not to pasteurize. Personally, I am confident about the health of the sheep that give me their milk, thus, pasteurization is not a question for me. The milk is delicious and real. I will continue to develop recipes for cheese that can age beyond 60 days so I can use natural milk. I'm fussy about sterilizing the equipment I use. Be radical and explore the complexity and depth of flavor that can only exist in cheese made with unpasteurized milk. They've been doing it in Europe since someone stumbled on the cheesemaking process as a great way to preserve milk! Regardless of the 60 day "law", I usually start eating my cheese as soon as I can…60 seconds, 60 minutes, whatever. And I'm still here to tell you the tale.

Feta 101

Feta is a great first time cheese because you can get your feet wet without worrying about a ripening room/cupboard or cheesemats or humidity flucuations. But, feta is trickier to preserve than one might think. Sure, the recipes are out there… from *Mother Jones* to *Gourmet*, a lot of different folks have gotten in on the "make-yer-own-feta" action. And that is great, but, unless you eat the feta you make right away, how are you going to keep it? Some folks keep feta in herbed olive oil and supposedly that works well, but the shelf life is limited. We like the brine option at Back Forty. So, hot on the trail of preserving feta in brine, we contacted quite a few artisans who possessed some lore about feta and brine. There was excellent feedback, a few "family" secrets and some quite technical info regarding ph values, CaCl content, salt solutions, and how all these things affected your cheese. In case you didn't know, true to the spirit of Old World cheesemaking, "sharing" tips and technique is a big part of the process. It's good to know that that spirit is alive and well in some parts of the New World! So, in the spirit of sharing, here is our recipe for feta, and the way we preserve it in brine here at Back Forty (as I said, the brine learning curve is still cresting after numerous experimental batches altering ph, salt solution, and calcium chloride fluctuations). Have fun!

Farmstead Feta (will make about 4½ lbs of cheese)

*Items in **bold case** may need to be purchased from a cheese supply company!

You will need: **3 soft cheese molds** (about the diameter of a 28 oz tin and about 8 inches high made of food grade plastic – cheese making supply companies would have these); a 10 quart stainless steel pot (and a

slightly larger pot/canning pot for the water bath or bain marie), a thermometer, a cheese ladle (big stainless flat spoon with lots of little holes in it); measuring spoons, measuring cup, a long knife to cut curd, a cake rack to place the curd filled molds on for draining and a pan underneath to catch the whey (I use a plastic Rubbermaid type container), starter and rennet can be purchased through a cheese making supply company, and of course, milk (ask your sheep for that part of it)!!!

Important note: all utensils which come in contact with your cheese need to be properly sterilized to avoid contamination!!!

Starter: **Mesophilic II**
Rennet: **liquid calf rennet**
Milk: 6 quarts ewe's milk: fresh, frozen (thawed), natural or cooked

Add luke warm water to your bain marie.

Pour milk into stainless pot and settle in bain marie. Insert thermometer and occasionally gently (up and down motion with spoon) agitate milk. Slowly raise temperature to 86ºF. If you need to add heat to the bain marie water to raise the temperature of the milk, do so cautiously to prevent your milk temperature from surpassing your target.

Once you have reached your desired temperature, sprinkle ¼ tsp of Meso II starter culture over the milk. Add carefully to avoid clumping. Gently stir with an up and down motion 10 times to fully mix starter with milk.

Add ½ tsp of liquid rennet to a ¼ cup of distilled water. Add this to milk and stir ten times using the up and down stir method.

Now it is time for the milk to set and form a curd. Do not disturb the milk during this time. It will take approximately and hour and 15 minutes to set. To check for readiness, insert a thermometer into the curd on a slant and gently pull tip vertically up through the milk. If you can detect a clean break in the curd, it is ready to be cut. If the curd is tending to stick to the thermometer or looks mushy, check again in five minutes.

Gently cut a grid pattern in curd with your sterilized knife. Then cut on the diagonal as well as you can. At this point, you can gently begin to stir, and slice curds with your spoon. Your goal is pieces of curd about ½ inch X ½ inch. Usually, by this time, the temperature of the curd and whey has dropped a couple of degrees…that's okay because you are going to bring the temperature up again.

You now want to raise the temperature to 90ºF. Apply heat to your bain marie and gently raise the temperature of your curds. It should take about 20 minutes to raise the temperature (about 1 degree every 5 minutes). Stir occasionally during this process to keep the curds from matting or sticking together.

Once you have reached the desired temperature, spoon the curds into your three molds. (Note: the whey is fantastic as a substitute for buttermilk in breadmaking…just pour some into a sterile jar, store in fridge, and use within a week). Stack the molds one on top of the other, and switch positions every once in awhile for some gentle pressing.

Leave the curds (in molds) to drain on a cake rack for about 20 hours. Turn your cheese end for end in mold as soon as it is firm enough to handle (at least once during this time).

Put your feta in your brine solution and make sure the cheese is completely covered. Keep in a cool spot…like your fridge or if you are lucky enough to have a root cellar that works great too! You can eat your cheese anytime, but in about three weeks the flavor will really start to develop. In the spirit of science, sample some on a fairly regular basis to track your feta's progress!!!

In the meantime, make that brine…

Brine: 7 % salt solution with added **calcium chloride**

Saline/Calcium chloride solution: 13 parts water to 1 part salt (easy to figure out…you could use 6 ½ cups of water mixed with ½ cup of salt; then just use what you need from this solution or double it if you need to). For every quart of solution add 3 ¾ tsp of calcium chloride.

You can use a largish food grade plastic container to hold your cheese and brine…it will need to be deep enough so that your feta can be completely submerged. Because the solution isn't excessively salty, your cheese should sink, so just make sure you have enough brine to cover. Use coarse salt without iodine (pickling salt or kosher salt) and purchase a small bottle of calcium chloride from your cheesemaking supplier. The calcium chloride counteracts the leaching of calcium from the feta into the brine solution. Without it you could end up with a squishy, soft feta that won't keep as well. The salt helps to keep everything sterile. Some folks recommend a higher saline solution, but we like the feta from our 7 % brines. It's not excessively salty and the flavor is incredible. Store your feta in brine in a cool place. So far, we have feta that we have kept for at least two months in 7 % brine and it is fabulous. For real salt sensitive types, you can soak the feta in milk for a day before eating it…the milk draws out all the salt. When you are finished all your cheese, strain the brine and save it for your next batch.

Congratulations!!! You have your first farmstead ewe's milk feta cheese…you don't need any sort of ripening room, just your bucket of brine and you're off to the rodeo! If you are concerned about using natural ewe's milk, let your feta age 60 days in the brine before eating. Enjoy, and share only if you have to!

Stay tuned…coming to a newsletter near you: "Farmstead Cheesemaking Part 2: Why is everything so technical? Plus Soft Mold Ripened Cheese101!

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(On a sad note, I believe with the passing of James Aldridge, cheesemaking guru and master, this website may no longer available)

Margaret and Marie at Glengarry Cheesemaking and Dairy Supply…cheese whizzes extraordinaire!

Thanks also to other artisan cheesemakers who shared some lore!