

A Cheesy Class for you all

Cheese is old. Certainly much older than the scope of the SCA. Considerably older than written history. In fact, it probably dates back to the early days of animal husbandry in the Stone Age, when people were deciding it was easier to keep a herd of your own animals around, rather than going out and hunting for one, every time you wanted a fresh steak. Mammals, after all, make milk, and milk leads to...

Let's get technical for a moment. What exactly is cheese? We know it comes from milk, of course, but how do you get a solid mass from an easily pourable liquid? I could tell you that the fire that is part of a cow (or goat, or sheep)'s nature drives off the elemental water from grass, which is largely earth, leaving a different earthly substance...i.e. cheese, but that's being kind of medieval in your outlook. What's really going on is that the long, flexible strands of protein (like lengths of yarn) are floating along in a solution of aqueous fats and, of course, water. Then you toss in something that makes the yarn bunch up. Of course, this is actually either a mild acid, rennet, other similar enzymes, or simply heat, but the effect is the same, more or less. The protein strands wad up, becoming knots, almost, and trap some of the fats with them, and leaving the small, agile water molecules out of the loop. Depending on which method you use (and sometimes you use more than one), you get different knots.

What you have then, is basically curds and whey. The catalyzing agent (heat/acid/rennet) is still around, and you have to deal with the after effects of it (which are nonexistent if it's rennet or heat, but may have to be neutralized if it's vinegar or other acid). The curds are your basic cheese—clumps of protein wrapped around some fats, and looking like the aftereffects of a B-grade horror flick. The whey is mostly water, with some fats and proteins left in it (which is why it's kind of yellowish). The curds can be treated in various ways to make just about every kind of cheese you're familiar with—and even some you're not.

Ok, now you know what is going on. But for SCA purposes, a better question is why? Why make cheese at all? Sure, a basic cheese doesn't take all that long to make, but why go to all the trouble of making it in the first place? To get really good cheeses, it takes months...years even of tedious work (9 year old Cheddar. Oh, my!). You're wasting a goodly portion of the cow's product (and remember, cows back then didn't product as much milk as our highly specialized end products of eugenic adaptation). Back then, people didn't have anything to waste, seeing as they couldn't just run over to the store if something didn't work right.

The answer is in the same economics lesson that makes you wonder why you're going to the trouble of making it in the first place. In other words—durability, portability, and scarcity.

The archeologists that ponder such things figure the first basic cheeses happened this whey (pun intended). Some tribesman was going from point A to point B and took along some milk for lunch on the way. Chances are, he used the stomach bladder of some kind of small herd animal for this purpose—sheep and goats are ideal. Why? The stomach bladders are tough, waterproof, and can easily be tied off and reopened later (through the natural openings in such organs) to get at the contents. They also hold a goodly amount of liquid, but not too much that it couldn't be easily carried. So Bobo the Unwashed is trucking along...it's a warm day, and when he gets to his destination, he opens his disgusting milk jug to find...what? That's not milk! It's a yellowish liquid and some white lumps. Being a thrifty soul, and not spotting a Burger King for miles, he

decides to eat the lumps anyway. Hey! It tastes different—and variety is hard to come by on a primitive diet.

So what happened? The heat and jostling of the journey mixed things up, and started the process...that, and stomachs of small ruminants such as sheep or goats is a prime source of rennet. Voila, cheese.

So what's this about durability, portability, and scarcity? In medieval times, they didn't have fridges. While we know that they knew that keeping things cold helped preserve them (Well, we know they knew it in later period, at least)...it's not like they had handy sources of ice for much of the year. Food spoiled with annoying frequency. And when you've just put a phenomenal amount of backbreaking labor into putting food on the table (as they had to)—you didn't want anything to go to waste. So when you were actually successful enough to have enough cows/sheep/goats that could produce more milk than you or yours could drink...you weren't about to let it be wasted. And cows or other animals that are giving milk, give milk EVERY day. And they HAVE to be milked. Hence that George Carlin line in his comedy routine on leftovers: "Eat it fast, it's spoiling!"

Cheese is far more portable, too. Which is easier to carry to market, or to give to the Prince (Or Curmudgeon—hint, hint!) as tribute? 10 pounds of milk, or 10 pounds of cheese? Bingo. It's far more difficult to create a container for a liquid that doesn't leak than you might think. Which is why coopers (barrel makers) were an honored profession. If you don't think so, try making one.

And scarcity. I already alluded to the fact that cheese tastes different (and sometimes, it can be VERY different) from the staple foods that most people lived on throughout most of history. And that's precious. If you had a herd of goats, most of the time, when you weren't starving, what you'd eat is goat. Maybe with some vegetables that you either found, or were traded, or managed to raise...but you'd eat goat, drink goat milk...and probably smell like goat...but soap making is another class.

Cheese doesn't have to taste like the source. And because you put extra labor in it, it is worth more, which means since it's also portable, and lasts a relatively long time, you can use it in the economy. If you think about it in this light, the development and use of cheese is almost inevitable. But enough about economics—you can't eat economics!

By the way, what is rennet? I've alluded to it a couple of times. What it is, is an enzyme found in the stomachs of small herbivores—like goats and sheep, and it kinks up those protein molecules as well, if not better than acids. Other rennet-like agents can be found in things like thistles (Yes, the Scottish variety), fig sap, and in other plants as well. More recently, and for any vegetarian types out there, you can get it from certain kinds of fungus as well. Most recently, scientists have managed to extract the genetic machinery that produces rennet from cow's stomachs, and put them in other, plant-based cells, and thus can churn out the high-grade cow-stomach variety by the bucket-full. Why bother with it? First of all, it's more powerful in clumping curds than acids (enzymes catalyze reactions but are themselves unchanged in the reaction, so that when it's done clumping one molecule, it can move on to the next one—acids tend to break down, especially under heat). Secondly, for the medieval mindset, it's easier to kill/eat a goat and use it's stomach scrapings to whip up cheese than to go to the trouble of making vinegar—which is another long process—and citrus fruits aren't readily available in much of Europe. Lastly, rennet is tasteless. If you use vinegar, your cheese will taste of vinegar...unless you neutralize it somehow. Not that it's always a bad thing. Herbed vinegars, or balsamic vinegars make very nice cheese—but that may not be what you're aiming for.

Enough digression. What you want is to know how to make the stuff, right?

All right.

Really basic cheese basics

Take milk—let it warm to room temperature over several hours while keeping the carton/jug factory sealed. The reason for this is that when we buy milk today, all the nasty germs have been killed. Why let them back in? At the same time, milk is also homogenized at the factory...in other words, the bits of fats and proteins have been whupped up on so they don't come out of the water solution very easily. This is NOT what cheese making is about, so we let it warm up to de-homogenize it.

A word or several on “Ultra-pasteurized” milk and other hazards. This stuff is treated to a very high temperature for a very short time. This saves the milk company money and time, and the resulting milk is quite resistant to spoilage. It's also rather bland, and the high heat will damage the proteins WE need to make cheese. Almost without exception, ultra-pasteurized milk won't make cheese, except maybe a ricotta. If your city water supply has chlorine in it, you'll want to use bottled water to dilute your rennet and other stuff in—chlorine will kill off your rennet and probably your starters. Which is why you might use a dilute solution of bleach to clean all your equipment thoroughly, but you'll want to rinse well afterwards, and let it air dry.

Definitions

Starters: There are two different basic kinds, thermophillic and mesophillic. Thermophillic are used in high heat environments, mesophillic are used in cooler environments. They're both bacterial cultures already set up for you to use, and while you can culture them similarly to the way you make sourdough, it's a lot of trouble. In general, thermophillic starters are used to make harder cheeses.

Calcium chloride: a common salt (chemically speaking) that can help repair some of the damage to the proteins that have been pasteurized.

Cheese salt: a large-grain flaky salt used to help flavor cheese and control the rate at which the chemical reactions occur. Diamond brand Kosher salt is a perfect choice, and a lot cheaper than buying specific “cheese salt”

Acids: Most common are vinegars, citric acid, and citrus fruits. Some recipes also use tartaric acid (crème of tartar powder). Citric acid is available in health food stores to help you grow sprouts, and is easily measured, and has no taste of its own.

Lipase: An enzyme used to make cheese taste stronger, used in small amounts—helps cow's milk taste a little sharper, more like goat or sheep, but also tends to soften the curds.

Cheese mold: Several varieties exist—white molds for surface effects (as in Brie), camberti molds, very similar but used in goat's milk cheese, red-smear molds, used for ripening brick cheeses, and of course the roquferti family, for making blue cheeses. There are hundreds of

specific varieties. You can culture them in similar fashion as the starter cultures, and some are very aggressive in how they spread.

Other equipment you'll want. A long handled, thin spatula to stir and cut curds with, a thermometer (I like digital probe ones, myself), bowls, cheesecloth, and a large, flattish skimmer. Don't forget a big pot to heat things in. Cheesecloth, butter muslin, or even better a nylon straining bag, is needed for the draining of curds and whey. Eventually you will want to get into making presses and need molds, mats, and such. String is handy. If you really get into this, and have a dedicated cheese cave (perhaps a wine fridge), you'll also want a thermometer and hygrometer for that (PetSmart is a great source, in the reptile section!). And yes, the OTHER kind of cheese molds, i.e. things that help shape your final cheese, because the shape of your cheese DOES sometimes matter.

Cheese the first—Green Cheese

1 gallon of milk

¼ cup of vinegar (apple cider vinegar is good)

In a large pot, heat the milk directly to between 185 degrees and 190, stirring often to prevent scorching. Do NOT allow the milk to boil. At temperature, slowly add the vinegar and “cut” it in to mix. Allow the curds to form off heat. Ladle them into cheesecloth in a colander and allow to drain (save the whey!). Remove the cheesecloth and press into shape, store in a bowl in the fridge for up to two weeks. This cheese does not melt, and can be diced and added to things, much the way you might use bean curd. It is similar to a paneer cheese, also.

Slightly more advanced cheese: 30-minute mozzarella

1.5 tsp citric acid dissolved in ½ cup cool water

1 gallon whole milk

¼ tsp lipase, optional (dissolved in ¼ cup cool water and allowed to sit for 20 minutes)

¼ tsp liquid rennet or ¼ rennet tablet, diluted in ¼ cup cool water

1 tsp cheese salt

While stirring add the citric acid and lipase to the milk at 55 degrees (or so). You may have to use slightly more rennet if you use lipase. Heat the milk over medium/low heat to 90 degrees. The milk will start curdling. Stir in the rennet with an up and down motion gently, while bringing the milk to 100-105 degrees. The curds will be somewhat shiny, the whey should be clear (wait a bit if necessary). Pour off the whey, pressing with your hands gently. Microwave the curds for about a minute, and drain the whey. Knead the curds like bread dough. Reheat in the microwave another 40 seconds, and repeat. Repeat the microwave/draining/kneading process again, adding salt if desired. You will probably need to use gloves, as when the cheese reaches 145 degrees, it will become smooth and pliable—stretch it like taffy. Eat while warm! Delicious!

Ricotta cheese

2 gallons fresh whey, no more than 2 hours old

1 quart whole milk (optional, but will increase yield)

¼ cup cider vinegar

1 packet mesophilic starter, for flavor

½ tsp cheese salt

2 tbsp crème (optional)

Pour the whey into a large pot, add the milk if desired, heat the mixture to 200 degrees. While stirring, turn off the heat and add the vinegar. Curds will form (Small specks). Allow to drain and fold in the starter. Hang the bag to drain for several hours. When drained, mix the curds, salt, and any herbs you like in a bowl—moisten with cream if desired.

Cheater Ricotta

2 gallons whole milk
1 pint half and half or whipping cream
2 tsp cheese salt
4 tsp citric acid in 2 cups cool water (use half of this at first)
½ tsp calcium chloride in ½ cup cool water

Combine the above in a large pot and slowly bring up to 185-190 degrees. When the curds form and the goal temp is reached, turn off the heat and use the skimmer to pull the curds into the center, then let them mat for 15 minutes. IF the whey is still milky, add the remaining citric acid first. After the waiting period, carefully remove the ricotta into a colander lined with cheesecloth. Drain and eat.

Ricotta salata is made with the above. After draining at least an hour, break up the cheese, and add another tsp of salt, then line your press mold with cheesecloth, and press for 1-2 hours at 2-4 pounds. Remove from mold, flip, and continue pressing for an additional hour with the same pressure. Cheese can then be aged in the refrigerator up to three months. If mold forms, wipe it off with a brine-soaked cloth (check every 2-3 days). For the Yule Feast, we're going to smoke this for some added flavor.

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For cheeses like blues, hard cheeses, and other, fancier things, it is...not surprisingly, a lot more difficult. Blue cheeses use special molds to give it its distinctive flavor. In fact, that's true of most aged cheeses—they use molds to alter the cheese texture, chemistry, and even consistency (that skin on a Brie is a mold that reacts with the cheese...found specifically in a special cave in Brie, France).

Hard cheeses require the use of weight, to press out even more moisture left in the curds...you get your cheese, form it into blocks or wheels, and use ever increasing amounts of weight to compress the cheese...which requires turning every now and again. But too much pressure is bad too—I made a ricotta salata cheese once that I over pressed and over-aged and it came out remarkably like a block of parmesan!

All this is why so many cheeses have regional names. The conditions that it requires to make a, say, Camembert cheese are found in...Camembert, France (specific temperature ranges, types of grass for the cows, humidity, incidental molds etc, etc). True Brie is only found in Brie France (and specifically in that one really big cave in Brie, France), Stiltons and Cheddars are found in...yes...Stilton and Cheddar England. And so it goes. This is the concept of "Terrior", which also applies to wines, chocolates, butter, and many special, regional foods. Of course, with modern techniques, they can reproduce those conditions pretty well elsewhere...especially in California, where they tell us "It's the Cheese". True cheese snobs say they can tell the difference. But that's their problem, not mine. I'm just glad we're able to taste so many different kinds—previously only royalty might be so blessed.

If you want to build a cheese press, you can make one pretty easily—take a large tin can (like a #10 can from most restaurants), and cut out the bottom (I'll assume you've used the contents, so the top is gone too). Place said double-open-ended cylinder on a straw mat, which is in turn in a baking pan. Put a circle of cheesecloth in the bottom of your press, and ladle your mostly drained curds in (again, large curds work better for this). When they're all in place, put the top or bottom of the can in on top of them, and place weight on top of that. To begin with, you'll need a fairly small weight...a few cans of soup work nicely. Keep increasing the weight every few days (wash bricks and wrap them in foil, is my suggestion), until you're using two or three bricks worth of weight. During this process, you will need to stop, remove the cake of cheese, and carefully turn it over to apply pressure from the other side at least once. Make sure to keep your baking pan drained of whey so as not to make your house smell worse than necessary. Voila, a hard(er) cheese. Try to keep your temperatures as constant as possible while doing this.

What to do with all the whey you're generating? I'm told it's good to use in place of water in baking (scones apparently require it), or that, chilled, it's a refreshing drink on a hot day. I imagine that, given that it still has considerable proteins and fats in it, it would make a decent and more medieval Gatorade-type drink, especially if you stirred a little salt into it. If you try this, and suddenly find you have the endurance to win Crown, by all means, tell me. Suddenly, I'm seeing a team up between the cheese maker's guild and the waterbearers...And true ricotta is made from fresh whey used to make other cheeses...the name ricotta means "re-cooked", as they brought this whey back up to a near-boil in order to not waste any cheese still in the liquid.

Different types of milk can be used for different flavors, as well. Cow's milk tastes different from goat or sheep's milk. Of course the latter two are expensive, but by medieval standards of living we're all insanely rich, anyway. Give them a shot. The higher the fat content of the milk, the more cheese you get out of a given batch...but it's quite possible to make a fat-free cheese with fat-free milk. You just won't get as much, nor to my mind does it taste quite as good. Scary trivia—which has more fat, cheddar or double crème Brie? Look it up! I have a friend who makes cheese with chocolate milk, who swears it tastes good—but I have not tried it, nor would I recommend it (shudder). And lastly, Soy or almond Milk are NOT milk, and will not make cheese with the above procedures.

And that is basically cheese.

Baron Gwyn Chwith ap Llyr
(I suppose) Apprentice Cheese maker

References:

Just look in any decent library and find any old book on cheese making. It's all got pretty much the same information, though they'll no doubt tell you how easy it is to make your own hard cheeses—and while you should try it...expect it to take a lot of effort to get right. One of the BEST books, however, is Home Cheesemaking by Ricki Carroll. ISBN 978-1-58017-464-0. Extremely well worth it. All but the period cheesecake recipe below comes from her.

www.cheesemaking.com has a tremendous amount of resources for you.

List by Mistress Eibhlin nic'Raghailligh

* Appenzeller, (Switzerland). Noted as being one of Switzerland's oldest cheeses, it dates back to Charlemagne.

* Beaufort (AOC), (France, Savoie). Mentioned in Roman times.

* Bellelay, (Switzerland). This cheese is now known as Tete-de-Moine. It was renamed during the French Revolution, was originally named after a monastery in the Jura mountains.

* Brie de Meaux (AOC), (France, Ile-de-France). Mentioned as early as 774 when it was served to Charlemagne.

* Cantal (AOC), (France, Auvergne). This is one of the oldest of the French cheeses, dating back to the 12th century.

* Castlemagno, (Italy). This cheese was mentioned in 1277 as a unit of exchange.

* Cheshire, (Great Britain). 54 BC - the method for making it was brought to England by the Romans

* Comte, (Switzerland). 1267 AD

* Cottage Cheese, very common, early to late period.

* Emmental, (Switzerland). This cheese can be traced back to 1293, but was first mentioned by name in 1542, when it was given to the people of Langenthal whose lives had been devastated by fire.

* Farmers Cheese, very common. It's just unprocessed curds that have been salted and packaged.

* Feta, (Greece). 1184 AD

* Fontina, (Italy). 13th cent.(haven't verified this one)

* Fribourgeois, (Switzerland). According to local documents, it was served to the wife of Duke Sigismund of Austria in 1448.

* Gorgonzola, (Italy). 879 AD (haven't verified this one)

* Gouda, (Holland). An ancient cheese, its history dates from the sixth century, when it was made on small farms around the village of Gouda. It has been exported since the 13th Century.

* Grana, (Italy). 1200 AD (parmesan and romano are of this family)

* Gruyere, (Switzerland, Fribourg). In 1115 a quantity of Gruyere was recorded as the thithe paid by local farmers to the monks of Rougement Abbey.

* Mariolles (AOC), (France, Flanders). Made as early as the 10th Century at the Abbaye de Mariolles.

* Münster, (Germany). In the Middle Ages the cheese was made by the monks at Munster Abbey in modern day Alsace. When Alsace became part of Germany, the name of the cheese gained an umlaut, it became Münster, after the Wesphalian town. Ownership of Alsace switched from Germany to France several times after that, but the cheese continued to be made on both sides of the border.

* Parmesan, (Italy). 1200-1300 AD

* Quark, (Germany). Simply means "curd" in German, and the cheese is said to date from the Iron Age, when nomadic tribes discovered the means of fermenting the milk without the use of Rennet.

* Ricotta, known throughout period

* Romano, (Italy). 1200-1300 AD

* Roquefort, (France). 1070 AD - but is under debate!

* Saint-Marcellin, (France). Served to royalty as early as 1461. In those days it would probably have been made with goat's milk.

* Sapsago, (Italy). 16th cent.

* Sbrinz, (Switzerland). Is thought to be the cheese referred to by Pliny the Elder as Caseus Helveticus in his writings of the 1st Century AD.

* Slipcoat cheese, (Great Britain).

- * Wensleydale, (Great Britain). 1150 AD
- * Yogurt, known throughout period

NON-PERIOD CHEESES

* Camembert, developed in 1791 by Marie Fontaine. The cheese Napoleon ate was not what we know as Camembert.

* Cheddar, because of the cheddaring process, which was created during the Industrial Revolution, is late 18th century. There is a cheese that was known in period that was called Cheddar, but it was an *entirely* different cheese from what we know today.

- * Edam, 18th cent.
- * Gloucester, 1697 AD
- * Port-Salut, 1865 AD
- * Stilton, 1750 AD

List compiled and researched by Lady Eibhlin nic'Raghailligh, mundanely known as Kathleen Madsen. Feel free to email with questions or comments. kmadsen12000 at yahoo dot com.

Appendix 2: Medieval cheese use

In period, older cheeses were thought to have different properties from younger ones—old cheese was considered “dry, and warm”, and younger ones were “warm and moist” (Which meant they were closer to the “Body’s ideal”. Ricotta specifically was considered “Cold and moist”. Cheese in general was thought to close off the stomach, meaning you could then start to digest the foods you ate—so cheese courses were actually served to END a meal, not begin it as you find in most SCA feasts.

That said, for the most part cheese was used to cook with, for younger cheeses, and served by itself with the older and more complex ones. Please find attached a VERY old recipe for using younger cheese—it’s a pre-period cheesecake...

HONEYED CHEESECAKE

This recipe is from Marcus Porcius Cato, *De Agri Cultura*

ORIGINAL LATIN

84. Savillum hoc modo facito. Farinae selibram, casei P. II S una conmisceto quasi libum, mellis P. * et ovum unum. Catinum fictile oleo unguito. Ubi omnia bene conmiscueris, in catinum indito, catinum testo operito. Videto ut bene percoquas medium, ubi altissimum erit. Ubi coctum erit, catinum eximito, papaver infriato, sub testum subde paulisper, postea eximito. Ita pone cum catillo et lingua.

TRANSLATION

84. Make savillum as follows. 1/2 lb. flour, 2 lb. cheese, mix together as for libum; 1/4lb. honey, 1 egg. Rub an earthenware baking dish with oil. When all ingredients are well mixed, place in the dish and cover the dish with a crock. Be sure to cook through in the middle, where it rises highest. When cooked, remove from the dish, spread with honey, sprinkle with poppy. Place briefly under the crock, then remove. Set out with dish and spoon.

