

Making Cheese At Home

by Mary Jane Toth

Making cheese is a great way to preserve your milk supply. Some types of cheese can be aged for two years or more without refrigeration, while others have a shelf life of two years or less. We freeze the soft cream cheese-style cheeses. We wax the cheddars, colbys and parmesans, since they will keep for a long time. We also make a marinated feta that is covered in herbs and oil. It keeps in a jar in a cupboard at room temperature for several months with no problems.

Cheese is basically milk, culture and rennet. All [Click now!] cheese will be white unless you color it. I never do this, as it is totally unnecessary. The different kinds of cheese are a result of the type of culture used, temperature control and cooking time. Some cheeses such as blue, Brie, Swiss or strong feta do require special enzymes to change the character of the cheese.

Forget about making American cheese. America seems to be in love with it, and yet it isn't really considered a true cheese at all. It is real, all right, but it is the result of several types of cheeses blended together with milk and stabilizers, then pressed into the neat squares you see at stores.

Because it is no longer a recognized type of cheese like cheddar, colby or Swiss, it is now considered a cheese food. Check the label the next time you go to the supermarket. You won't have the type of equipment at home that is needed to reproduce American cheese.

To get started, you'll need to consider what kind of culture or starter to use. Rennet coagulates the milk. Cheese wax is a must for colby, cheddar and parmesan. Cheese wax is reusable. It can be washed in warm water, dried and melted again and again. It's an investment in your home cheesemaking. Get some good recipes, and you should be on your way to making your own dairy products.

Cultures, wax and rennet can be purchased from any good cheesemaking supply company.

Some basic information

1. Pots and utensils: Use only stainless steel or unchipped enamel for making cheese. Acidity levels in cheese will cause the aluminum to leach into your cheese. Any stirring or cutting utensils are fine as long as they can be sanitized and are not made of aluminum.
2. Salt: Use only non-iodized salt, such as kosher or canning salt. Iodine will give your cheese a greenish cast.
3. Cheese press: You need this if you plan to make waxed cheeses. You can make one with an empty coffee can. Cut out both ends and cut a wood follower to fit the opening. Small red bricks can be wrapped in foil and used for weights. There are several good cheese presses available at a variety of prices. The best deal is the one Hoegger makes for around \$60. Anyone who is handy with wood can make their own.
4. Cheese wax: Don't substitute paraffin or beeswax for the cheese wax. I have already tried them, and they don't work. Cheese wax is softer and more flexible than the other types.
5. Rennet: It comes in liquid or tablet and in vegetable or animal types. They all work equally well. The tablets keep on a shelf, but liquid rennet needs to be refrigerated. However, it does have a life expectancy of two to three years. It never really dies, but it does lose potency at about two percent a month. This can be compensated for by adding a little more rennet as it ages. The liquid rennet is a must for making soft-style cream cheese.

Don't buy Junket brand rennet from the grocery store. This is not the same thing as cheesemaking rennet.

6. Starter cultures: Cultures come freeze-dried in small packets. Some must be recultured first before using. These are considered regular type cultures.

Others are called DVI (Direct Vat Inoculate). This means that they can be added directly to the warmed milk without the added step of culturing them first. They are a real time-saver and handy for the occasional cheesemaker. The drawback is that they are generally more expensive to use. I prefer them because they are more convenient. If money is a concern, those that can be recultured are cheaper to use in the long run. Their drawback is that the culture must be recultured on a regular

basis just like yogurt to keep them live and working well.

These cultures fall into two basic categories - thermophilic and mesophilic. Thermophilic is a heat-loving culture. It is used for cheeses that must be heated to a higher temperature such as mozzarella, parmesan or Swiss and Italian-type cheese. Yogurt is also made with a thermophilic culture.

Mesophilic is a non-heat loving culture which would be destroyed at higher temperatures. It is used for 90 percent of your cheesemaking. Buttermilk is made with a mesophilic culture.

I often used these items as culture substitutes in some of my recipes.

7. Cooking curds: Most times when you need to cook the curds (cooking firms them up), a sink of hot water works better than a stove. You can control the temperature better by adding more or less hot water as needed.

8. Cheesecloth: Don't buy cheesecloth from the grocery store. This isn't real cheesecloth, and it won't be useful for draining anything. Cheesecloth is a much thicker, muslin type 100 percent cotton. It can be washed in hot soapy water with bleach and be used over and over again. The best way I can describe it is that it reminds me of diaper material - not prefolded, but the old-fashioned diapers that we had to fold ourselves. When held up, you could almost see through it, but not clearly.

Old pillowcases work great for draining cheese. I cut open the seams and wash them in hot soapy bleach water. They make a nice square yard of cloth and can be reused for years until they actually wear out.

To hang the cheese, we use old shoelaces which we also bleach and use over and over. Tie a big knot in each end of the lace before using. This will keep the laces from sliding out while the cheese hangs. Cheese that falls from hanging on a cupboard handle can really make a mess.

9. Aging: Waxed cheeses can be aged several ways. The ideal temperature is around 55 degrees to 60 degrees F. A basement or root cellar works great. A non-working refrigerator or freezer can be used to keep out rodents. I have had really good luck using a chest freezer with a tight-fitting lid. I set it in my basement and have kept cheese in there for over 1-1/2 years. Unwaxed cheeses can be kept for several months if covered with oil. Any type will do nicely, but you need to be sure that all the cheese is completely immersed in the oil. Mold needs air to grow.

10. Milk: Milk from any species can be used to make cheese. My recipes were developed using whole milk. If you're saving the cream for butter making or ice cream, you can use the leftover milk to make cheese.

Milk must be clean, cooled properly, or pasteurized and heat treated. If you're using raw milk to make cheese, the cheese should be aged for 60 days or more. Any harmful bacteria won't survive the aging process after 60 days.

11. Pasteurizing: There are pasteurizers available for purchase, but this job can also be done on a stove top. Use the double boiler method, placing one pan inside another. Add a few inches of water to the outside pot and heat the milk until it reaches 161 degrees F. Stir to make sure the milk is at an even temperature throughout, then place in a sink full of very cold water for quick cooling.

Even if you decide not to pasteurize your milk, quick cooling is the most important step you can take to have good-tasting milk and successful cheese making. A candy thermometer works great for pasteurizing. It can be hung on the side of the pot. Once you know how long it takes for the milk to reach 161 F degrees, you can set a timer to keep from accidentally overheating the milk.

Soft cheese (cream cheese style)

- * 5 quarts whole milk
- * 1/3 cup buttermilk
- * 2 tablespoons diluted rennet (dilution is 3 drops of liquid rennet into 1/3 cup of cool water)

Warm the milk to 80 degrees F. Stir in the buttermilk, mix well and add the dilute rennet solution. Stir well, cover and allow to set at room temperature for eight to 12 hours. The cheese is ready when it is thick.

Line a large bowl with a cloth and hang to drain for six to eight hours. Draining can be speeded up if you take the bag of curds down and scrape them from the outside of the bag to the center. The cheese is drained when it has stopped dripping

and has the consistency of cream cheese. This cheese will freeze for several months. Makes 1-1/2 to 2 pounds.

Note: Cheesecloth won't drain this type of cheese. You must use a muslin-type cheesecloth or case cloth, as I like to call it. Case cloth is simply an old pillow case with the seams opened up to make a large square of cloth. It can be washed out in hot, soapy bleach water and reused until the cloth wears out. Shoelaces will work for hanging the cheese to drain. You can use this cheese as a substitute for cream cheese. We like to mix in herbs and spices and make cheeseballs. Because this cheese is so versatile and easy to make, I recommend it as one of the first cheeses for the beginner.

No-rennet cottage cheese

- * 1 gallon milk
- * 1 cup cultured buttermilk

Warm the milk to about 95 degrees F. Stir in the buttermilk and allow to set at room temperature for 12 to 18 hours. The milk will clabber, or become thick.

Cut the curds into 1/2-inch cubes and let rest for 10 minutes. Place the pot into a double boiler-type pot and heat at a very low setting until the curd reaches 115 degrees F. Stir often to keep the curds from matting together. This will take an hour or more.

The curd is ready when it is somewhat firm on the interior of the cheese. Cook longer if necessary. Some whey will rise to the top. Let the curds settle to the bottom of the pot, drain off the whey and place the curds in a cloth-lined colander to drain. Be gentle, as the curds are rather fragile.

Allow the cheese to drain until it stops dripping. Place in a bowl and add salt to taste. I usually use about one teaspoon of kosher or canning salt per pound. Stir in about four ounces of half-and-half or cream per pound if you like a creamed cottage cheese.

Quick cottage cheese

- * 1 gallon milk
- * 1/2 cup cultured buttermilk
- * 1/4 teaspoon liquid rennet
- * 1/4 cup cool water

Warm the milk to 86 degrees F. Stir in the buttermilk, mix the rennet into the cool water and add to the warmed milk. Set until it coagulates, usually about an hour. Cut the curds in 1/2 inch cubes. Heat slowly by the double boiler method until the temperature reaches about 110 degrees F. Hold at this temperature for 30 minutes and stir often to prevent matting.

When the curds are firm, place into a cheesecloth-lined colander and let drain for 20 minutes. Lift the curds in the cheesecloth and dip into a pot of cold water. Drain until the curd stops dripping. Place curds in a bowl and add salt and cream if desired.

Cheddar cheese

- * 2 gallons milk
- * 1/2 cup cultured buttermilk or substitute (see list below)
- * 1 tsp. liquid rennet or 1/2 rennet tablet
- * 1/2 cup cool water
- * 4 teaspoons salt

In a large stainless or enamel pot, warm the milk to 88 degrees F and stir in buttermilk or other culture (see below). Allow the milk to set to ripen for one hour. Keep the milk warm at 88 degrees F during this time. This can easily be done by placing the milk in a sink full of warm or hot water. Cool or hot water can be added as needed.

After one hour, mix the rennet in cool water and stir into the milk for 30 seconds. Maintain the temperature at 88 degrees F for 45 minutes to coagulate the milk. The curd is ready to cut when you dip your finger into the curds and they break cleanly over your finger as whey fills the depression.

Cut the curds into 1/2-inch cubes and let them rest for 20 minutes, then gently stir them while increasing temperature to 98 degrees F. Increase heat very slowly over a 30-minute period. This process is called cooking the curds. Stir often to prevent the curds from matting together. Keep at 98 degrees F until the curds have firmed up enough where they feel spongy when gently squeezed between your fingers and no longer have a custard-like interior. This will usually take 30 to 45 minutes.

Let the curds settle to the bottom of the pot and carefully pour off some of the whey. Pour remaining curds and whey into a colander and allow to drain for 10 minutes. Place the curds back into the pot and stir in four teaspoons of salt. Mix well, breaking up any curds that have matted together. Keep the curds warm in the pot in a sink full of hot water for one hour. Stir often to keep the curds from matting.

Line a cheese press with cheesecloth, scoop curds into the press and fold over any excess cheesecloth. Place a wood follower on top of that and press at 15 pounds pressure for 20 minutes. Remove the cheese from the press, turn over and redress onto another clean cheesecloth and press at 30 pounds pressure for two hours. Remove cheese from press, redress in a clean cheesecloth and press at 30 to 40 pounds overnight.

In the morning, remove the cheese from the press and allow to air dry several days until the cheese is dry to the touch. Turn several times a day while it is drying. Coat with cheese wax when the cheese is dry to the touch. Age at 55 degrees F for two to six months, depending on how strong you like the cheese. Really good cheddar is aged for 12 months or more. Culture substitutions: You can use 1/4 teaspoon mesophilic DVI (direct vat inoculant) or 1/2 regular mesophilic culture in place of buttermilk.

Mild feta cheese

- * 1 gallon milk
- * 1/4 cup cheese culture or buttermilk
- * 1/2 teaspoon liquid rennet
- * 1/4 cup cool water
- * Coarse salt

Warm milk to 86 degrees F and stir in cheese culture or buttermilk. Set one hour to ripen. Mix rennet into cool water and stir into milk. Cover and allow to set another hour to coagulate. Cut curds into 1/2-inch cubes and allow to rest five minutes. Stir gently for 15 minutes, keeping the curds at 86 degrees.

Pour curds into a cheesecloth-lined colander, tie the bag of curds and hang to drain for four to six hours. Slice the cheese ball in half and lay the slabs of cheese into a dish that can be covered. Sprinkle all the surfaces with coarse salt, cover and allow to set at room temperature for 24 hours.

After 24 hours, salt all the surfaces with more coarse salt and let it rest for two hours. Place the cheese in a covered dish and refrigerate for five to seven days. Use within two weeks or freeze for future use. The cheese will keep at room temperature for months if marinated in oil.

Marinated feta cheese

- * Mild feta cheese (stronger cheese may be used)
- * Jars with lids
- * Olive, canola or soybean oil
- * Your choice of herbs (use aromatic herbs for best flavor)

Cut or break the cheese into smaller pieces, about 1 to 1-1/2 inches. Use a clean jar that has a tight-fitting lid. Layer the herbs first, then the cheese. Repeat until the jar is full. Leave about 1/2 inch of space at the top. Pour oil over the cheese and herbs, filling the jar until the mixture is completely covered with oil.

Place the marinated feta on a cupboard or shelf. Refrigeration is not necessary as long as the cheese is completely covered with oil. Air won't be able to get in, and the cheese won't mold. Enjoy it straight out of the jar or crumble into your favorite salad. The cheese gets better with age.

Some herbs to consider are rosemary, thyme, bay leaves, marjoram, sun-dried tomatoes, garlic cloves, dried hot peppers, peppercorns, basil, oregano or onions. My personal favorite combination is rosemary, basil and garlic.

Traditional (Greek-style) feta cheese aged in salt brine

- * 1 gallon milk
- * 1/4 cup cheese culture or buttermilk
- * 1/8 teaspoon lipase enzyme powder
- * 1/2 teaspoon liquid rennet
- * 1/2 cup cool water
- * Coarse salt
- * Brine solution

Warm milk to 86 degrees F. Stir in culture or buttermilk, add lipase enzyme to 1/4 cup cool water, dissolve enzyme and stir into milk. Set 1 hour to ripen.

Mix rennet in 1/4 cup cool water and stir into ripened milk for one minute. Allow 40 minutes to coagulate. Cut curds into one-inch cubes and let rest for 10 minutes. Stir gently for 20 minutes, keeping the curds at 86 degrees F. Pour curds into cheesecloth-lined colander and hang the bag of curds to drain for six to eight hours.

After draining, the cheese will be very firm. Slice in half, salt all the surfaces of the cheese with coarse salt and place sections of cheese into a dish. Keep the cheese in a covered dish during the salting process at room temperature for two days. Rub all the surfaces with more salt each day. Drain off any liquid that seeps out of the cheese. This cheese will become very strong smelling during the salting process. That is the lipase enzyme powder doing its job. After two days, the cheese should become tougher and can now be aged in a brine solution in the refrigerator. Age in brine for one to four weeks.

Brine solution:

- 7 ounces of canning or kosher salt
- 1/2 gallon cool water

Mix salt and water together. Not all of the salt will get dissolved. Place the cheese into a crock or dish with a lid. Cover the cheese with the brine solution. Cheese needs to be immersed in the brine.

Note: Feta is traditionally a very salty cheese and is best eaten crumbled over a salad or used in small amounts in other dishes. Some of the saltiness can be removed by soaking in fresh milk overnight.

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