

Home Cheesemaking

Making cheese at home is fun. Proper preparation and attention to sanitation will make good tasting cheese that is safe for the whole family to enjoy.

Choosing a Cheese Recipe

Home cheese making can be as simple as adding vinegar to warm milk to make ricotta for tonight's lasagna or as complicated as waiting months for a mold-ripened cheese to be ready to eat. For the best success, start with simpler recipes until you are familiar with the basic principles of cheese making.

Recipes are found in cheese books, supplier websites, and other internet sites. There is no single recipe for making a cheese, so look around and compare recipes.

Milk for Cheese Making



Fresh milk with good flavor makes the best tasting cheese. For the home cheesemaker it is easiest to obtain pasteurized milk from the grocery store. This milk is usually homogenized.

Pasteurization is a heat process that destroys pathogens (bacteria that cause human disease) that may be found in raw milk. Regular pasteurized milk is okay to use for cheesemaking, but ultra-pasteurized and ultra-high pasteurized (UHT) milk have higher heat treatments that interfere with the ability of the proteins to coagulate into curds, so these milks should not be used for making cheese.

Homogenization is a physical process that makes milk fat globules more uniform in size so they stay evenly dispersed in milk. Most home cheesemaking recipes use homogenized milk, and this may result in a softer curd. Commercial cheesemakers use unhomogenized milk. Some home recipes call for the use of pasteurized skim milk and cream to mimic unhomogenized milk. Be sure that the cream is not ultra-pasteurized and does not contain other ingredients.

Some commercial cheeses are made from raw milk, and the cheesemakers follow extra precautions to make sure these cheeses are safe to consume. Penn State does not recommend the use of raw milk for home cheesemaking because of the U.S. requirements for producing raw milk cheeses and concerns with pathogens.

Milk contains fat, protein, lactose (milk sugar), vitamins, enzymes and other components. The composition and characteristics of milk vary depending on the type of milk (cow, goat, sheep) and other factors. Substituting one type of milk for another in a cheese recipe does not necessarily result in the same finished cheese.

If you are a serious hobbyist cheesemaker, learning more about milk from home cheesemaking and scientific resources will be invaluable to improving your craft.

Other Ingredients for Cheese Making

Different coagulants, bacterial cultures, yeasts, molds, and enzymes are used to produce a wide range of cheese varieties and flavors. Follow the recipe and supplier's directions for using the right ingredients, usage rates, and proper storage.

Flavorings add unique character to cheese. When using homegrown herbs sterilize them (dip briefly) in boiling water or alcohol to prevent unwanted bacteria, yeasts, and molds from contaminating the cheese and causing poor quality, off-flavors, or unsafe



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cheese.

Supplies and Utensils

All cheese making supplies and utensils should be made of food-grade materials such as stainless steel or sturdy plastic. This includes plastic tubs and brushes for aging cheese. Utensils should be easy to clean and not have scratches, nicks or pitted areas that could harbor unwanted bacteria. If possible have a set of utensils and pots just for cheesemaking.

Thermometers and pH meters should be calibrated regularly according to the manufacturer's instructions.

Cleaning and Sanitizing the Workspace and Utensils



Diligent attention to sanitation is necessary for making high quality, good tasting, and safe cheese.

All utensils, supplies, and workspace areas should be properly cleaned and sanitized prior to and during the cheesemaking process. This includes your hands! If you use gloves, make sure the gloves are sanitary too. Be sure to sanitize the entire surface of all supplies and utensils. Cheesecloths and towels should be freshly laundered and sanitized before use.

Cleaning and sanitizing are two different processes.

- *Cleaning* removes soil from surfaces.
- *Sanitizing* reduces the microbial population on clean surfaces.

You can't sanitize a dirty surface.

Cleaning is done with detergents, hot water, and manual scrubbing. Detergents for home cheesemakers can be unscented dish soap or a cleaner designed for dairy or food processing. Dairy cleaners are alkaline-based to remove milk fats and proteins. Always follow the manufacturer's instructions for use -- too little is ineffective, too much can waste money and leave residues on your equipment or contaminate the cheese.

Sanitizing can be done with a solution of household bleach or other food grade sanitizers (follow manufacturer's instructions). The sanitizer should be in contact with the surfaces or utensils for 20-30 seconds and then allowed to dry.

Sanitizing solution can be made by mixing:

- **2-3 teaspoons bleach with 1 gallon water**

The chlorine content of a food sanitizer solution should be 100-200 ppm. If the concentration is greater than 200 ppm, the solution can leave chlorine residue on surfaces and contaminate the cheese. The chlorine content of bleach may not be consistent from brand to brand or may decrease over time, so sanitizer solutions should be checked with chlorine test strips to ensure that the sanitizer is at the proper concentration for producing safe food.

There are 4 simple steps to follow to keeping your cheese area and utensils clean.

1. Pre-rinse using warm water to remove loose soils
2. Wash with detergent

3. Rinse to remove detergent and soil
4. Sanitize before use

Acid-based cleaners, such as vinegar, are used periodically for cleaning mineral deposits from hard water that may build up on equipment. Acid washing is done after the final rinsing of the detergent and before sanitizing.

Many types of cleaning chemicals are available for use at home, on the farm, and in food processing plants. Be informed about what you are using to make sure it is appropriate for the application and it is being used correctly. Pay attention and follow safe handling practices when working with concentrated cleaning chemicals.

Making the Cheese

Before you start making cheese, read the recipe thoroughly and understand all the steps and conditions in the process. Check that you have all ingredients and supplies needed to make the cheese from start to finish.

Have all your supplies and ingredients ready. Clean, sanitize, and organize your workspace and equipment. Have extra cleaner and sanitizer solutions ready. Make sure instruments are in working order and calibrated.

Allow enough time to do all the steps and procedures according to the recipe. Multi-tasking or taking unscheduled breaks while making cheese is not advised because it can result in a poor quality or possibly unsafe cheese.

Use good sanitation practices during the entire process. Wash and sanitize your hands frequently during cheesemaking. Even if you are just turning a cheese once during the aging process, make sure your hands, utensils, and workspace are properly cleaned and sanitized.

Have fun!

Taking Notes

Keep a notebook just for cheese making. Write down the date, the recipe, the milk and ingredients you used, any changes to the procedure, and other observations.

Batch sheets are a good way to record your cheesemaking data. Examples can be found in cheesemaking books and internet sites.

Notes are helpful to troubleshoot problems, make improvements on the next batch, and help recreate that great batch of cheese you made months ago.

Resources for Home Cheesemakers

The books contain recipes and helpful information about milk and cultures used for cheese, the cheese making process, and tips for success. The websites are places to purchase ingredients, supplies, and books on cheese making. The websites also have recipes and information on making cheese and other dairy products at home.

Books

Artisan Cheese Making at Home. 2011. Mary Karlin. Ten Speed Press, an imprint of the Crown Publishing Group, a division of Random House Inc., NY.

The Cheesemaker's Manual. 2003. Margaret P. Morris. Glengarry Cheesemaking and Dairy Supply, Alexandria, ON, Canada.

Home Cheese Making: Recipes for 75 Homemade Cheeses. 2002. Ricki Carroll. Storey Publishing, LLC, MA.

Mastering Artisan Cheesemaking: The Ultimate Guide for Home-Scale and Market Producers. 2012. Gianacelis Caldwell. Chelsea Green Publishing, White River Junction, VT.

Websites

- [The Cheesemaker](#)
- [Dairy Connection](#)
- [Glengarry Cheesemaking and Dairy Supply](#)
- [New England Cheesemaking Supply Co.](#)

The Home Dairy

Making dairy products like ice cream, yogurt, butter, and cheese at home can be fun and rewarding. Proper preparation and sanitation will make delicious dairy products that are safe for the whole family to enjoy.

Making dairy products at home is nothing new to farm families – they've been doing it as long as they've been dairy farming. Many of us remember the treat of making ice cream with our grandparents. Recently we've seen a new generation of people interested in making dairy products at home because it's fun and it gives us a closer connection with our food.

Making dairy products at home can range from simple to complex depending on the product. Milk is a delicate starting material that can yield amazing things to eat if handled properly. Misuse of the milk before or during the process can create off flavors, poor texture, or could make someone sick. The association of raw milk with human disease has been known for a very long time and we regularly see foodborne outbreaks today that are associated with both raw and pasteurized dairy products. An understanding of these risks, proper sanitation and good handling practices are of critical importance when making dairy products at home. Remember that the "manufacturing process" starts before you take the ingredients out of the refrigerator, through packaging and storage of the final food, and all the way up until consumption – keep it safe and enjoy!

There are many resources on the internet and kits available to help the hobbyist safely make ice cream, yogurt, butter and cheese at home.

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