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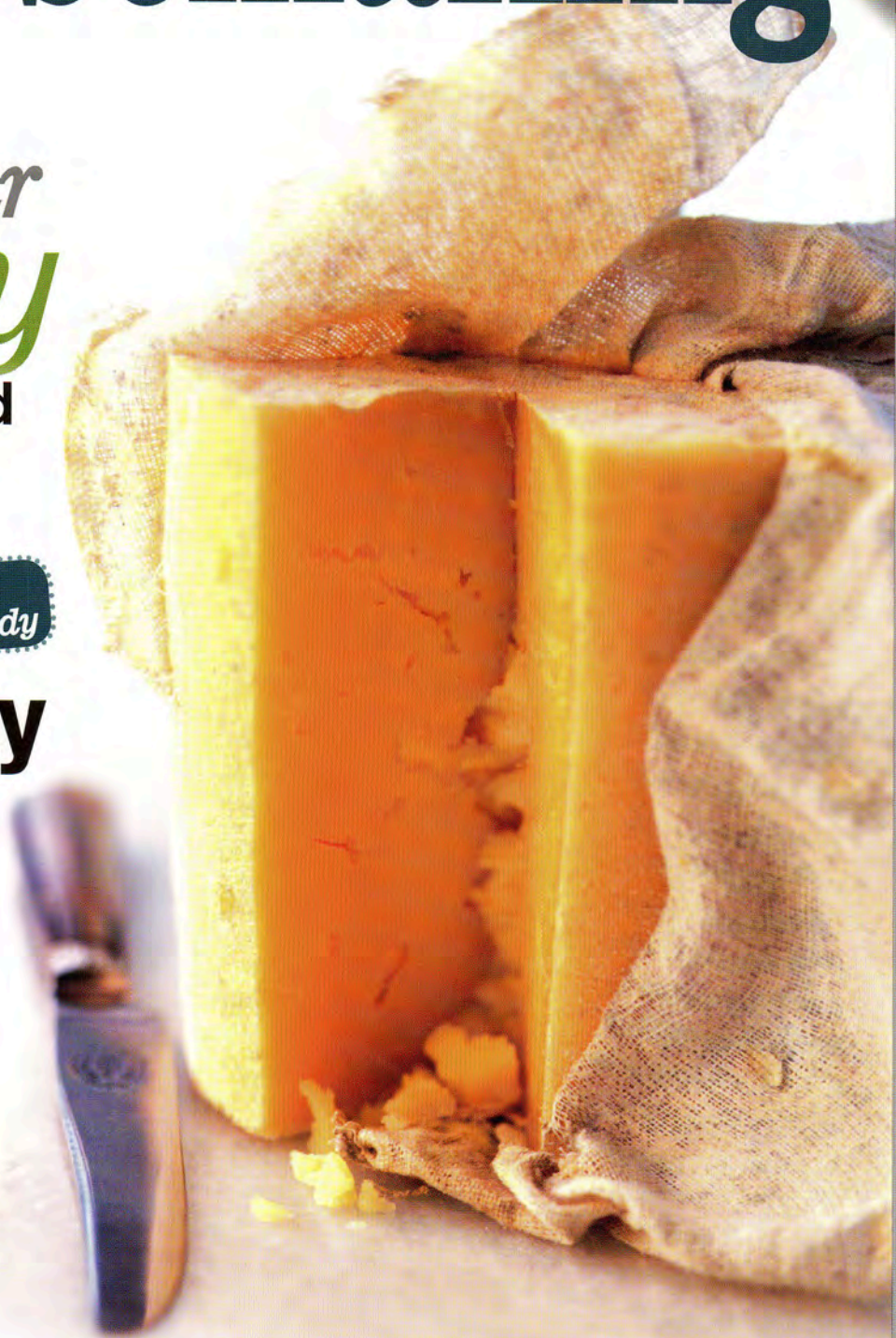
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FROM THE EDITORS OF HOBBY FARMS® MAGAZINE

good

Although time-intensive, mold- and bacteria-ripened cheeses prove that they're worth the effort.

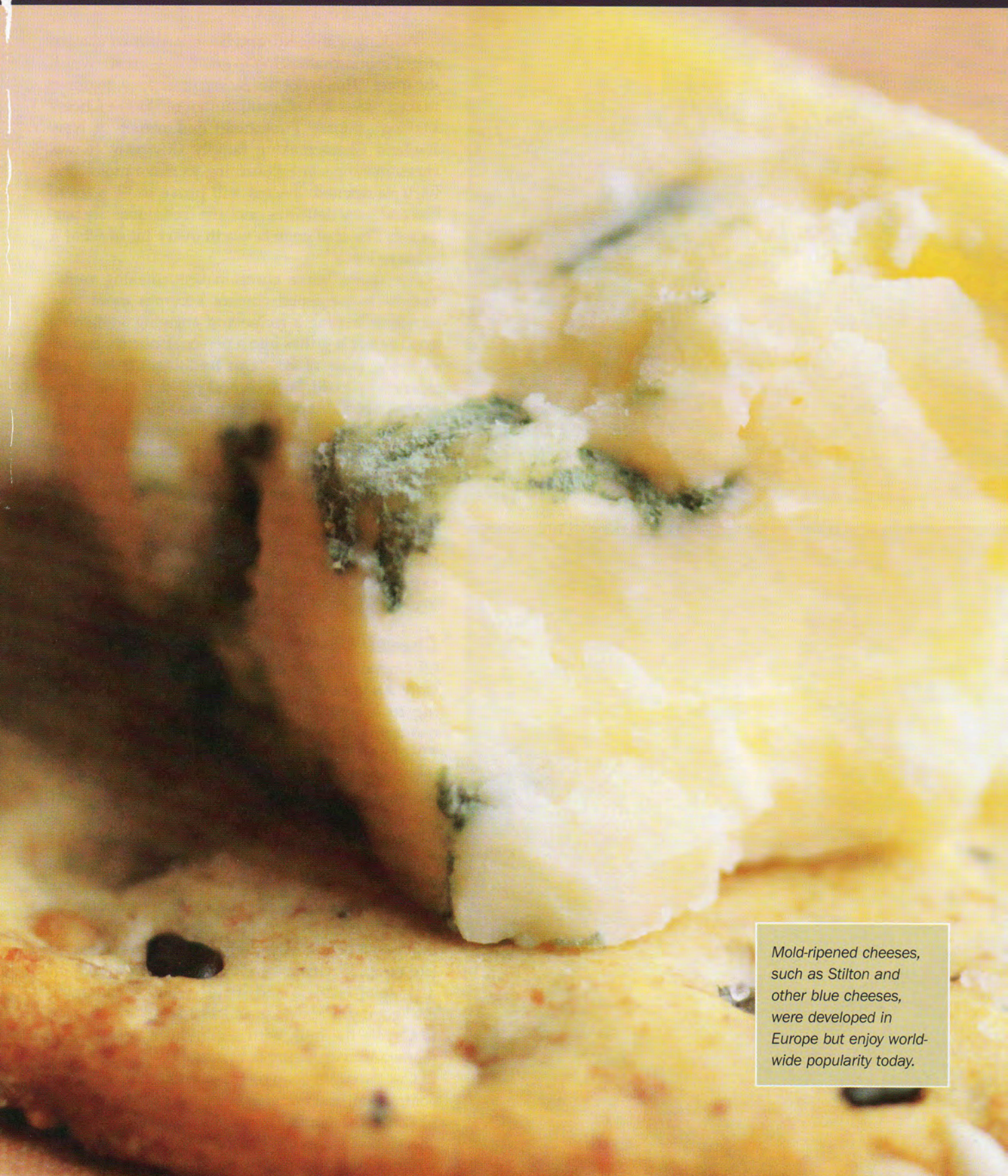
every cheese lover holds a special place in his or her heart for mold- and bacteria-ripened cheeses. The unique textures and flavors of these cheeses — such as Brie, Camembert, Limburger, Gorgonzola, Munster and blue cheese — result from natural bacteria and molds that give each a specific taste. Learning to make them at home means learning to work with these bacteria and encourage their growth with the right conditions.

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By Nancy Mann Jackson



Mold-ripened cheeses, such as Stilton and other blue cheeses, were developed in Europe but enjoy world-wide popularity today.



Penicillium roqueforti is the mold used to develop the flavor and taste of blue cheese.



Penicillium candidum is a white mold that covers the surface of cheeses such as Brie.

SUE WILSON/ALAMY

Working with mold- and bacteria-ripened cheeses might sound challenging — and it is — but it’s worth the time. “This is not the easiest place for a beginner to start,” says Ricki Carroll, author of “Home Cheese Making” (Storey Publishing) and owner of New England Cheesemaking Supply Company (www.cheesemaking.com). “Learning to make mold- and bacteria-ripened cheeses will prove to be a lot of fun and very delicious once the techniques are perfected. The challenge is worth every bit of what it takes to learn.”

For many home cheesemakers, making mold- and bacteria-ripened cheeses becomes more than simply following a recipe and enjoying something good to eat. It grows into a personal journey and an evolving work of art. “Our traditional cheeses are ripened by mold, bacteria and yeasts that are propagated via airborne spores in the ripening room,” says Jonathan White of his cheeses at Bobolink Dairy in Vernon, N.J. “The older cheeses pass down the spores of the microbes that flourished on them to the next generation of young cheeses, so the ripening room evolves a true culture — in the humanities sense rather than the scientific sense. A culture is the accumulated wisdom of multiple generations of experience at what works, as opposed to just adopting every new idea.”

Cheese Challenges

Of course, not all types of bacteria and mold are tasty. An important part of making cheeses is learning to encourage “the tasteful molds while discouraging their distasteful cousins,” White says. “Traditional methods take a holistic approach by encouraging the good guys, with the knowledge that the good guys will outcompete the bad guys.” He recommends following these principles to encourage the growth of good bacteria:

- ❑ Use the best-quality milk from healthy, low-stress animals that live socially on open pasture where they graze collaboratively rather than competing at a grain trough.
- ❑ Ripen the milk well, using native bacterial strains (starters). Ripening develops acidity that kills off distasteful bacteria and molds while encouraging the “good guy” bacteria and molds.
- ❑ Curdle the milk with a minimum dose of true rennet, not vegetarian enzymes.
- ❑ Cut the curds gently, stir just enough to stimulate contraction, and use little or no heat while stirring.
- ❑ Ladle the curds slowly and carefully into the cheese molds, and allow them to drain overnight without pressing, with careful turning according to type.

These methods can be successful, but many home cheesemakers rely on modern methods to foster the growth of good bacteria and avoid the growth of undesirable bacteria. These modern methods include the use of heat and chemistry (such as pasteurization, ultraviolet filters and laboratory-grown strains of monoculture molds).

Another challenge when creating mold- and bacteria-ripened cheese at home is “making sure that cheeses don’t cross-contaminate,” says Margaret Hathaway, author of “The Year of the Goat” and “Living with Goats” (both by The Lyons Press) and a homestead cheesemaker in Portland, Maine. “You can’t put Camembert and blue cheese in the same refrigerator [because mold spores from one can travel to the other].”

Ripe Beginnings

Many years ago, when he wanted to begin to make cheese, White visited Dean & DeLuca in New York City and bought “about a half-dozen crazy-looking artisanal cheeses, from every part of Europe with every shade of rind,” he says. He was looking for a way to start his own ripening spore for bacteria-ripened cheeses.

In the kitchen, “I rubbed my hands over my horde of Europe’s best cheeses, then rubbed my nascent little goat cheeses with my spore-laden hands,” White says. “Some of the microbes took root in my New World cheeses, and some did not. Some did better than others. The result was a polyculture of essentially wild microbes that were naturally selected as the best at fermenting the rinds of my particular cheeses.”

More than 20 years later, White’s cheese production has moved from his home to his first commercial dairy in New York to a rented farm; soon it will move to his own land in central New Jersey. Along the way, “the exact nature of my cave culture has evolved and adapted to change,” due to new soils, microclimate and other factors, he says.

“Age is not important unless you're a cheese.”
— Helen Hayes, American actress

Creating mold-ripened cheeses requires fungal molds, which you can find at cheesemaking-supply stores.





For maximum taste and health benefits, seek out milk that comes from low-stress animals that graze in open fields.

A cheese trier is a handy tool that will help determine whether the cheese is properly aged.



By developing his own mold, White didn't need to purchase molds and bacteria from cheesemaking-supply companies, much like the traditional cheesemakers in Europe. "In places where bacteria- and mold-ripened cheeses have been produced for hundreds of years, the specific bacteria and molds are in the air and on the shelves of the caves and rooms in which the cheeses are aged, automatically inoculating the freshly made cheeses," writes Carroll in "Home Cheese Making." "In those cases, new bacteria and molds must be added only periodically to the milk or the cheese." Most home cheesemakers, however, take the easier route and purchase the molds and bacteria from a cheesemaking-supply store. (See "Resources" on page 95.)

Determine whether you'll attempt to make your own spores for producing mold and bacteria or purchase them from a cheesemaking shop or online provider. To make mold- and bacteria-ripened cheese, you'll need other supplies such as bamboo mats for draining, molds for shaping the cheese and possibly a curd knife for cutting the curds. (A curd knife is optional; Tracey Shepos — a professional chef and home cheesemaker currently developing a cheese line for Kendall Jackson Wines — says she cuts curds with a basic offset spatula used for icing cakes.) Use nonreactive equipment made of glass or stainless steel to ensure that chemicals in your cookware won't react with the molds and bacteria you use to make your cheeses, Hathaway says.

Consider purchasing a secondhand refrigerator to use solely for aging cheese, because mold- and bacteria-ripened cheeses need to be aged in a relatively warm, humid environment. If you try to age your mold- and bacteria-ripened cheeses in your regular refrigerator, the temperature likely will be far too cold for mold to develop properly and for



Gorgonzola can be made from cow or goat's milk.

(See “Hard Cheese How-To” on page 38 for a run-down.) There are a few differences, though.

❑ Most mold-ripened cheeses require a comparatively small amount of rennet to set, Carroll says. Rennet is the compound found in milk that causes it to curdle. The curd will be slightly softer than that produced in harder cheeses.

❑ Not all mold- and bacteria-ripened cheese recipes include cooking, but the ones that do instruct cheesemakers to cook the cheese at a low temperature, usually around 90 degrees F.

❑ Various molds and bacteria are used for various cheeses. For instance, white mold (*Penicillium candidum*) is used to age Camembert and Brie, and it can be added directly to the milk or sprayed onto the surface of the cheese. Blue mold (*Penicillium roqueforti*) is used to age blue cheese and can be added to the milk before renneting. Most recipes indicate which type of mold to use.

bacteria to reproduce effectively. Shepos says a wine refrigerator can work well, because the highest temperature on it usually is about 50 degrees Fahrenheit, which is right for many cheeses. Carroll recommends a camping or dorm-sized refrigerator. “It’s small, and the more cheeses you put in it, the more humidity you’ll create,” she says.

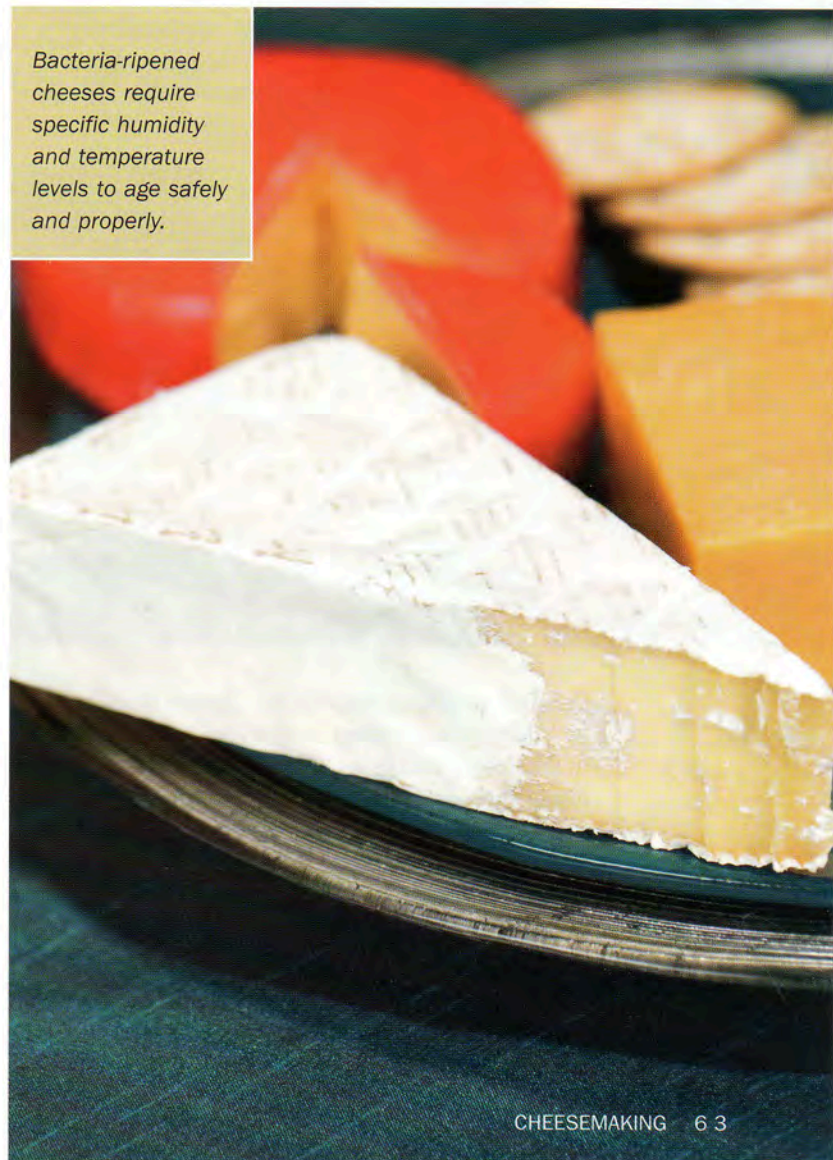
To make sure her cheeses have the right environment to age, Shepos purchased a temperature gauge from a local beer- and winemaking shop. She sets the thermostat to control the temperature of her extra refrigerator according to the cheese recipe she’s making. She also purchased a terrarium humidifier online, which she places inside the refrigerator and sets to the necessary humidity. “I constantly have a reading of the temperature and the humidity inside the refrigerator,” Shepos says.

Bacteria Basics

While specific techniques contribute to making successful batches of mold- and bacteria-ripened cheeses, some character traits remain just as important. “Patience is one of my biggest challenges,” Hathaway says. “You have to be gentle with the curds and really patient throughout the whole process. It’s like making bread: You let it sit for an hour, then there’s some active time, then you let it sit even longer.”

For instance, when making Camembert, Shepos says she has to flip the molds every hour for eight hours. The end result is worth the tedium, though.

Along with patience, makers of mold- and bacteria-ripened cheeses need to learn the basic steps, which are the same as for making hard cheeses.



Bacteria-ripened cheeses require specific humidity and temperature levels to age safely and properly.



Blue cheese's pungent taste goes best with foods that are similarly strong.



Designating separate spots for your mold-ripened cheeses prevents cross-contamination.

TIM BELVK

Handle with Care

When making mold- and bacteria-ripened cheeses, the most important precaution is keeping other cheeses out of close proximity during the aging process. "Mold spores tend to travel," Carroll says. "You do not want them to cross-contaminate. Therefore, when aging, you might need to designate separate areas, especially for the cheeses using blue or red molds."

While cross-contamination is a concern, experts say handling bacteria and molds is nothing to worry about. "These are bacteria that humans can eat just fine, so you won't overdo it if you have a tiny bit of extra bacteria," Hathaway says. "You just don't want to get other, harmful bacteria in your cheese, so you have to be as clean with everything as possible."

That cleanliness is "not just washing your hands at every step," Shepos says. "It also means making sure that every piece of equipment you use is completely clean."

❑ Mold- and bacteria-ripened cheeses must be aged in a cool, moist setting so that the bacteria or mold in the cheese will grow. When making these cheeses, many cheesemakers recommend a separate refrigerator, which can be set at the optimal temperature and humidity necessary for the particular cheese.

While making mold- and bacteria-ripened cheeses, follow the recipe carefully. For instructions to create some of your favorite moldy cheeses, see the recipes for blue cheese (page 66), Camembert (page 68), Gorgonzola (page 69), petit Brie (page 70) and Valençay (page 71).

While learning to make mold- and bacteria-ripened cheeses pose challenges, it also reaps deliciously satisfying results. "Like anything else, you've got to do it a few times to get a feel for what's right and wrong," Shepos says. "It's really an art form for the people who make it."

Likewise, for the people who eat and savor it. pk

Freelance journalist Nancy Mann Jackson writes regularly about gardening, preserving and cooking homegrown produce, and she blogs about it at GrowingFoodandKids.com. Contact her through her website, www.NancyJackson.com