



Got (Homegrown) Milk?

Thinking of making your own delicious milk, cheese, yogurt and other dairy products? Invest in some dairy animals and you'll be on your way.

By Sue Weaver

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Dairy animals represent peace of mind—you know the health status and medical history of your animals, and you know how the milk was handled and stored.

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Why would any denizen of 21st century America keep a household dairy cow, sheep or goat? For the milk! It's for fresh, delicious, chemical and hormone-free milk to chug chilled from the refrigerator or for crafting homemade dairy delights.

It's for rich, creamy ice cream the way great-grandma used to make it; it's for home-pressed, glorious cheddar cheese.

Hundreds of thousands of home dairy livestock owners agree: The healthiest, yummiest dairy goodies are the ones you make yourself.

Maybe you need a cow, goat or dairy ewe so you can make them too?

[The Home Dairy Revolution](#)

When most Americans think "milk," they visualize dairy cows. However, goats, sheep, yaks, water buffalo, reindeer, moose, horses, donkeys, llamas and camels provide wholesome milk and dairy products, too.

According to United Nations figures, in 2001, 84.6 percent of the world's milk was produced by cattle; 11.8 percent by water buffalo; 2.1 percent by goats; 1.3 percent by sheep and the remaining 0.2 percent by an assortment of other mammals for a total of 585.3 million liters of milk.

Milk has been called nature's nearly perfect food. However, in recent years many consumers began questioning commercial milk's purity, especially since 1994, when a small percentage of America's dairy farmers began injecting their cattle with Recombinant Bovine Growth Hormone (rBGH) to radically increase milk production.



Although rBGH is banned in Europe and Canada for both ethical reasons and for the increase in mastitis it causes, it was approved by the United States' Food and Drug Administration in 1993.

Currently 15 percent of America's 10 million lactating dairy cows are routinely injected with rBGH.

Butter Making

Photos by Paulette Johnson

1. First, set a gallon of milk in a large container in the refrigerator and don't disturb it. After 24 hours, skim the cream off the top and store it in an airtight jar.
2. Use a wide-mouth, pint-size canning jar and place your cup of cream in it. Add a dash of salt (up to a teaspoon depending on taste), and then begin shaking the jar to agitate the cream. The cream will increase in volume and butter granules begin to form.
3. Transfer the butter mixture onto a cheesecloth (draped over a pan) and strain out the buttermilk. Keep it for your own use or feed it to your pigs, chickens, dogs, or cats.
4. Wash the butter granules with cold water, working them together with a wooden spoon. Wash and work with the spoon several more times until the liquid you pour off is fairly clear.
5. Hand-form your butter into balls or a block, or pack into a mold to give a more pleasing shape. Start to finish, this method yields butter in less than 30 minutes. Their milk is usually co-mingled with milk from non-injected cattle when it reaches the processing stage, so an estimated 80 percent of America's commercial milk supply is laced with rBGH to some degree.

This issue, and the fear of antibiotics and other chemical residues in commercially produced milk, has spurred a renaissance in America's home-dairy movement.

Some people home dairy because they prefer to put un-pasteurized, non-homogenized, raw milk on the family dinner table. Proponents praise raw milk, opponents claim it's unsafe to consume, even in end products such as butter and cheese. Which is correct? The jury is out, so you'll have to reach your own informed decision.

Others keep dairy livestock for peace of mind. They know the exact health status and medical history of the animals that produce the milk they serve to their families. They know how the milk was handled and stored and precisely how and when it was worked into butter, yogurt and cheese.

And some of us home dairy simply because we enjoy it. We treasure the peaceful, daily interludes spent milking our own backyard animals and we love the sweet, rich milk they produce.

Home Dairying Basics

No matter what type of milking livestock you choose, certain basic facts apply across the board.

To begin producing milk and keep on producing it, an animal must periodically be bred and give birth. Ordinarily, dairy livestock is bred and delivers offspring once a year.

Some individuals "milk through," meaning they're capable of milking for a longer time than the norm before being re-bred, but sooner or later dairying means dealing with the logistics of having animals bred and of raising or selling the resulting offspring.

Dairy animals must be milked every day at the same times, in the same place, preferably by the same milker; they never take long weekends or sleep in.

For maximum output, dairy livestock is milked every day, twice a day, at 12-hour intervals. However, if this doesn't suit your lifestyle, you have options. Instead of separating your dairy provider from her newborn offspring, allow her to raise her babies and milk her just once a day.

The usual protocol is to pen the offspring separately at night and milk the mother first thing in the morning; after milking, her young rejoin her and nurse until evening when they're shuttled off to their separate quarters once again.



Is this cruel? Not at all. Modern dairy animals are bred to give considerably more milk than their natural offspring require. Babies can be fed quality feed in their own private area and in many cases grow faster and bigger than if they were raised solely on mother's milk.

All livestock species give milk—you needn't buy a dairy cow, goat or sheep if you don't need a bountiful supply of milk.

Cream for your coffee? Milk for atop your morning Rice Krispies? Highland cattle, Boer goats and Icelandic sheep all give wonderful, high butterfat milk--more than enough for some folks' needs.

If you already own cattle, goats or sheep that are bred or have young offspring, pick a likely candidate from your flock or herd, then tame and milk her.

She might provide all the milk you need; if not, you'll know if you enjoy dairying before springing for specialized dairy stock.

No dairy animal provides maximum output year-round; the amount of milk your dairy animal gives will decrease as her lactation progresses. She'll also require a period of downtime between lactations when she won't be milking at all, though she'll still need to be fed and well cared for.

To count on a continual supply of fresh milk, you'll need more than one dairy animal.

Dairy livestock requires high-quality feed, plenty of clean water, pasture or an exercise area surrounded by safe fencing and a draft-free place to get out of the weather.

To milk them you will need a separate milking area and proper equipment. You can't cut corners and reap quality milk.

To produce high-quality, safe, flavorful milk, you'll spend considerable time sanitizing equipment and processing the fruits of your labor. Your cow, goats or sheep must also be fed, watered, cleaned up after and doctored if they get injured or sick. Livestock keeping and home dairying in particular are not for the chronically harried.

How Now, Dairy Cow?

If you want lots of familiar-tasting milk to drink and plenty left over for crafting large quantities of secondary products, your dairy animal of choice is probably a cow.

A full-size dairy cow, depending on her breed, what you feed her, and the stage of her lactation, gives between four and 12 gallons of milk per day.

Hand Milking 101

A dairy animal, depending on her species, has two (sheep and goats) or four teats attached to the halves or quarters of her udder.

Between milkings, milk accumulates in structures called alveoli before passing through a series of ducts into the gland cistern, the udder's largest collecting point.

The gland cistern is connected to the teat cistern, a cavity within the teat where milk pools until milking time. A group of circular sphincter muscles surrounds the orifice at the tip of each teat. When an external force (a calf's mouth or a milker's hands) overcomes the strength of the sphincter muscles, they open and stored milk begins to flow.

Hand milking is a team effort between a milker and the creature he milks. When the milker preps his animal by washing her udder, the hypothalamus in her brain signals her posterior pituitary gland to release oxytocin into her bloodstream, causing tiny muscles around those milk-holding alveoli to contract.

In other words, she "lets down her milk."

Milk letdown lasts five to eight minutes and milking must be completed during that time.

However, if the animal becomes excited, frightened or experiences pain, her adrenal gland secretes adrenaline, which constricts blood vessels and capillaries in her udder and blocks the flow of oxytocin needed for effective milk letdown.



Good hand milkers are efficient and patient. They approach milking in a low key manner and they practice good milking technique.

Let's imagine you're milking a goat, but whatever the species, the same basic protocol applies. You will need: Squeaky-clean hands with short fingernails
A recently sterilized, seamless, stainless steel milking pail
Udder wash and paper towels
Teat dip and a teat dip cup or a pair of disposable 3 oz. paper cups
A strip cup with a dark, perforated insert
A sturdy milking stand set up against a wall in your milking area with grain waiting in the feed cup

- Step 1 – Lead the doe to the milking stand, ask her to hop up and secure her head in the stallion.
- Step 2 – Wash her udder using your favorite prepping product. Dry each half using a paper towel, then massage her udder for 30 seconds to facilitate milk letdown.
- Step 3 – Squirt the first few streams of milk from each teat into your strip cup and examine it for strings, lumps or a watery consistency that might indicate mastitis.
- Step 4 – Place the milking pail slightly in front of the goat's udder, sit down and grasp a teat in each hand.
- Step 5 – Trap milk in each teat by wrapping your thumb and forefinger around its base. Squeeze with your middle finger, then your ring finger and then your pinky, in one smooth, successive motion to force out milk trapped in the teat cistern into your pail (never, ever pull on her teats). Relax your grip to allow the cistern to refill and do it again. Alternate squeezing one teat while the other refills.
- Step 6 – Gently bump or massage the goat's udder to encourage additional milk letdown as the teats deflate and become increasingly more flaccid. Don't finish by stripping the teats between your thumb and first two fingers; this hurts and annoys the goat.
- Step 7 – Pour enough teat dip into the teat cup (or paper cups) to dip each teat in fresh solution and allow the teats to air dry. If that's too much milk, but you'd still prefer a cow, choose a miniature breed that gives comparatively less milk or use the excess to fatten a beef calf or pig for your freezer.

Most "house cows" are Jerseys or Guernseys, the smaller of the standard dairy breeds; in addition to their compact size, both breeds are prized for the higher-than-average butterfat content of their milk.

However, many heritage breeds such as Milking Devons, Galloways and Dutch Belteds give respectable amounts of rich, tasty milk too.

Before choosing, visit the American Livestock Breeds Conservancy's Web page (www.albc-usa.org) and peruse the breeds on the Watch List. By keeping a heritage cow and hiring an artificial inseminator to breed her using semen from a bull of her own kind, you can have your milk and the satisfaction of preserving a living, breathing bit of history, too.

For all their appealing qualities, cows also have their drawbacks. Even a diminutive miniature cow is relatively large and bulky, and when cows are feeling cantankerous, they can be a lot more beef than you care to wrestle with.

Cows produce a lot of runny, fly-attracting manure (a 1,000-pound cow can drop 80 pounds of manure in a day), so you'd better have a plan for disposing of this bounty. Their large hooves quickly sink deep pocks in damp pastures and turn small enclosures into stinky, mired messes. Unless you practice impeccable sanitation, close neighbors may object to a cow.

Cows are relatively expensive to purchase and feed, they require more room and better pasture than goats and sheep, and relatively few dairy cows are accustomed to hand milking.

Unless you're cattle-savvy and adventurous, a cow fresh from a commercial dairy's milking line probably won't do. If you're a first-time milker, expect to conduct a lengthy search for a trained house cow (or choose something smaller like sheep or goats).

Goat for It with Goat Milk
Milk and dairy products from healthy, well-fed goats are tasty treats. Contrary to popular opinion, properly handled goat milk neither smells nor tastes "goaty"; in fact, it tastes exactly like full-cream, home-processed cow milk.

The differences between cow and goat milk are negligible. Goat milk is slightly higher in calcium, milk solids and a few vitamins and minerals, but their protein and carbohydrate counts are much the same.

Smaller fat globules render goat milk easier to digest and whiter because it lacks the carotene that turns the fat in cow's milk a pale, creamy yellow (goats convert carotene to vitamin A).



A quality dairy doe at peak lactation gives about eight pounds (one gallon) of milk per day, although top producers milk considerably more than that.

One doe can provide enough milk for two people or a small family's needs, but because goats are social animals and pine without company, it's better to keep two or more goats.

Excess milk can be crafted into wonderful goat milk cheeses; smooth, yummy chevre and goat queso blanco are so easy that anyone can make them.

Because of goats' general "joie de vivre" and all-out affection for their caretakers; their compact, manageable size; low space requirements; ease of milking; and a ready availability of reasonably priced animals already trained for hand milking, goats are arguably the beginners best choice for efficient, user-friendly, home-dairy animals.

Goats produce far less manure than house cows, they don't attract flies and their hooves don't stir up a mess. Because they are browsers rather than true grazers, they thrive on pasture where cows would starve and gladly rid fields of brush, briars, brambles and even hard-to-rout noxious weeds like star thistle, leafy spurge and multiflora rose.

However, intelligent, ingenious goats require taller, more secure fencing to contain them. Research goat fences in your locale and have goat- and predator-proof fencing in place before you bring dairy goats home. For their safety, never tether goats (or sheep) in lieu of fencing!

Sheepie, is that Ewe?

Americans rarely think of milking sheep, yet scores of the world's greatest cheeses are crafted of sheep's milk. Consider Roquefort, Feta, Kashkaval, Pecorino and Wensleydale--sheep cheeses one and all. In fact, the International Dairy Federation lists 127 varieties of cheese made of sheep's milk—and sheep's milk tastes great, too! While sheep give less milk than cows or goats, what they give is marvelously rich, extremely nourishing, and ideally suited for making cheese, milk, butter and naturally thick, ultra-creamy yogurt. High protein and calcium-rich ewes' milk contains 6.7 percent fat and 18.3 percent solids, compared to 3.5 percent and 12.1 percent for cow's milk and 3.9 percent and 11.2 percent for milk from goats. It takes 10 pounds of cow's and only six pounds of sheep's milk to craft a one-pound brick of cheese.

America imports about \$10 million dollars worth of sheep cheese every year. To meet some of that need domestically, enterprising North American shepherds have imported specialized dairy sheep genetics from Europe, making it relatively easy for home-dairy enthusiasts to find and milk truly productive sheep. Breeds of choice are the German East Friesian and the French Lacaune. Where domestic wool and meat sheep produce 100 to 200 pounds of milk per lactation, European dairy queens give 1,000 pounds or more; because purebred East Friesians and Lacaunes are scarce, crossbreeds are the norm and can be expected to produce 250 to 650 pounds of milk per lactation.

Sheep traits are identical to goats', except they're not as likely to attempt to escape their fences. Sheep fencing, however, must be just as secure as goat fencing to protect sheep from marauding dogs and hungry coyotes.

A bonus with dairy sheep: You can harvest a wool crop, too. East Friesians have no wool on their faces, legs, underbellies and tails, yet they still shear an average 12-pound black or white fleece in the 30 to 37 micron, 52 to 54 Bradford count range, making them a best bet for fiber artists who like to produce their own dairy products, too.

It's a Beginning!

This brief introduction barely scratches the surface of the phenomenon known as home dairying. For the full skinny on why and how people approach home dairying the way they do, you'll need to do research this topic on your own. Fortunately, the Internet houses a treasure trove of valuable materials on home dairying; scope out these fine resources for starters.

About the Author

Sue Weaver is a contributing editor to HF and raises a variety of livestock on her Ozark farm.

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