



# STOREY'S GUIDE TO RAISING DAIRY GOATS

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FOURTH EDITION

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**Storey's Guide to  
RAISING  
DAIRY  
GOATS**

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**Breeds • Care • Dairying • Marketing**

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&  
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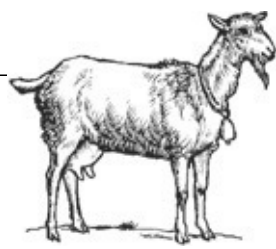
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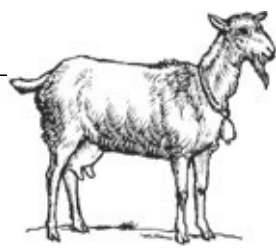
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# 1

## Basic Information About Goats

THIS BOOK ASSUMES THAT you are interested in goats and that you like these interesting and valuable animals, but it doesn't assume that you know anything about them. So let's start at the very beginning by looking at some basic terms and facts. (If you already know the basics, or if you're more interested in practical matters than in terminology and history, feel free to skip ahead to the next chapter.)

### Basic Terms

Female goats are called does or, if they're less than a year old, sometimes doelings. Males are bucks, or bucklings. Young goats are kids. In polite dairy goat company, they are never "nannies" or "billies," although you might hear these terms applied to meat goats. Correct terminology is important to those who are working to improve the image of the dairy goat. People who think of a "nanny goat" as a stupid and smelly beast that produces small amounts of vile milk will at least be likely to stop and think if she's called a doe.

### Goat Myths and Truths

Over the many centuries that goats have been humankind's companions and useful domesticated stock, myths about goat behavior and characteristics have been passed from generation to generation. As myths tend to be, these are exaggerated truths or downright fiction.

#### *The Truth about Goat Aroma*

Does are not smelly, they are not mean, and of course they don't eat tin cans. They are dainty, fastidious about where they walk and what they eat, intelligent (smarter than dogs, some scientists tell us), friendly, and a great deal of fun to have around.

Bucks have two major scent glands located between and just to the rear of the horns or horn knob and minor ones in the neck region. Bucks do smell, but the does think it's great, and some goat raisers don't mind it either. The odor is strongest during the breeding season, which usually runs from September to about January. The scent glands can be removed, although some authorities frown on the practice because a descented buck can be less efficient at detecting and stimulating estrus and will still have enough of an odor to be mildly offensive.

Still, even if they don't stink, bucks have habits that make them less than ideal family pets. For instance, they urinate all over their front legs and beards or faces. This is natural, but it tends to turn some people off.

In most cases the home dairy won't even have a buck (see [chapter 9](#)), so you can keep goats even if you have neighbors or if your barn is fairly close to the house, and no one will be overpowered by goat aroma.

### ***Livestock or Pets?***

One of the challenges of goat public relations is that everyone seems to have had a goat in the past or knows someone who did. Most of them were pets, and that's where the trouble lies.

A goat is not much bigger than a large dog (average weight for a doe is less than 150 pounds [68 kg]), she's no harder to handle, and she does make a good pet. But a goat is not a dog. People who treat her like one are asking for trouble, and when they get rid of the poor beast in disgust, they bring trouble down on all goats and all goat lovers. If the goat "eats" the clothes off the line or nips off the rosebushes or the pine trees, strips the bark off young fruit trees, jumps on cars, butts people, or tries to climb in a lap when she is no longer a cute little kid, it's not the goat's fault but the owner's.

Goats are livestock. Would you let a cow or a pig roam free and then damn the whole species when one got into trouble? Would you condemn all dogs if one is vicious because he was chained, beaten, and teased? Children can have fun playing with goats, but when they "teach" a young kid to butt people and that kid grows up to be a 200-pound (90 kg) male who still wants to play, there's bound to be trouble. Likewise, a mistreated animal of any species isn't likely to have a docile disposition.

Because goats are livestock, and more specifically dairy animals, they must be treated as such. That means not only proper housing and feed but also strict attention to and regularity of care. If you can't or won't want to milk at 12-hour intervals, even when you're tired or under the weather, or if the thought of staying home weekends and vacations depresses you and you can't count on the help of a friend or neighbor, then don't even consider raising goats. The rewards of goat raising are great and varied, but you don't get rewards without working for them.

### ***Goats Eat Everything, Don't They?***

The goat (*Capra hircus*) is related to the deer, not to dogs, cats, or even cows. She is a browser rather than a grazer, which means she would rather reach up than down for food. The goat also craves variety. Couple all that with her natural curiosity, and nothing is safe from at least a trial taste. Lacking fingers, goats use their lips and tongues to investigate their world like an infant stuck in the oral stage. Anything hanging, like clothes on a wash line, is just too much for a goat's natural instinct to resist.

Rosebushes and pine trees are high in vitamin C, and goats love them. Leaves, branches, and the bark of young trees are a natural part of the goat's diet in the wild. If you expect them to mind their manners when faced with the chance of a garden smorgasbord, of course you'll have problems! But don't blame the goat.

Goats are not lawn mowers. Most of them won't eat lawn grass, unless starved to it, and they won't produce much milk on it.

Do goats eat tin cans? Of course not. But they'll eat (or at least taste) the paper and glue on tin cans, which is probably what started the myth.

## **GOAT HOUSING**

Like a cow or a pig, a goat needs a sturdily fenced pen. Each doe requires a minimum of 10 square feet (0.9 sq m) of inside space, plus as much outdoor space as you can manage. Goats do

not require pasture, and unless it contains browse, they probably won't utilize much of it anyway; they'll trample more than they eat. It's better to bring their food to them and feed them in a properly constructed manger, especially in a land- and labor-intensive small-farm situation. Managed intensive grazing is catching on, even in relatively small properties. For more on that option, see [chapter 5](#).

## DON'T TIE HER DOWN

Never stake out a goat. There is too much danger of strangulation, and many goats have been injured or killed by dogs. A goat that is tied can neither defend herself adequately nor escape to high ground. Even the family pet you thought was a friend of the goat could turn on her.

Goats can be raised in a relatively small area. If there are no zoning regulations restricting livestock, dairy goats can be (and are) raised even on average-size lots in town.

## A Little History

Goats have been humanity's companions and benefactors throughout recorded history — and even before. There is evidence that goats were among the first — some say *the* first — animals to be domesticated by humans, perhaps as long as 10,000 years ago. They provided meat, milk, skins, and undoubtedly entertainment and companionship.

Wild goats originated in Persia and Asia Minor (*Capra aegagrus*), the Mediterranean basin (*Capra prisca*), and the Himalayas (*Capra falconeri*). There were domesticated goats (*Capra hircus*) in Switzerland by the middle period of the Stone Age, and the first livestock registry in the world was organized in Switzerland in the 1600s — for goats.

Goats were distributed around the world by early explorers and voyagers. They were commonly carried on board ships as a source of milk and meat. There were goats, for example, aboard the *Mayflower* on its famous voyage to America in 1620, and British explorer Captain James Cook has become infamous in New Zealand and other South Pacific islands for dropping goats on dry land along his route. They were supposed to be emergency food in the event of subsequent shipwrecks. As a consequence, goats ended up on shores far from home and spread to most parts of the world. Many returned to their feral state in their new homes, but today many more are in domesticated settings. The Food and Agriculture Organization (FAO) of the United Nations estimates that there are nearly 744 million goats in the world, and the number is increasing at a rate of 2 percent a year.

In Europe, goats provided more milk than cows did until well after the Middle Ages. With the growth of modern cow dairies in densely populated countries such as China and India, it is hard to say where goat milk consumption stands in the world today. Nevertheless, the FAO lists China in the top ten for goat milk production, and India is number one. Goats are certainly more common in less fertile, or more arid, or developing countries than they are in the United States and Canada, because they're more efficient animals than cattle in their ability to convert plants into more valuable animal protein. Although goats are more labor intensive than cattle, this is of small concern in backyard dairies and nonindustrialized countries and of no concern at all where there isn't enough feed for cattle to do well or where a cow would produce more milk than a family could use.

## THE BIOLOGY OF GOATS

Goats are mammals, of the phylum Mammalia: their young are born alive and suckle on a secretion from the mammary glands, which of course is milk.

They are of the order Artiodactyla, which means they are even-toed, hooved mammals, and of the suborder Ruminantia (from the Latin, meaning “to chew cud”) and have four “stomachs” like cows.

They belong to the family Bovidae, which among other things means that they have hollow horns that they don’t shed. (Some goats are naturally hornless, or polled. Many more are disbudded: the horn buds are burned out with a hot iron or with caustic before they start to grow. Some goats are dehorned: the horns grow but are then cut off.)

Goats belong to the genus *Capra*, which includes only goats. We will discuss the species *Capra hircus*, the domestic goat; within the species, subdivisions are known as breeds.

## Breeds of Goats

While all domestic goats have descended from a common parentage, there are many breeds, or subdivisions of the species, throughout the world — more than 80. Only a few of these are found in the United States.

Goat breeds are classified according to their main purpose; that is, meat, mohair, or milk. In this book we’ll be concentrating on the goats that have been bred for milk production, although in most respects care is the same for all.

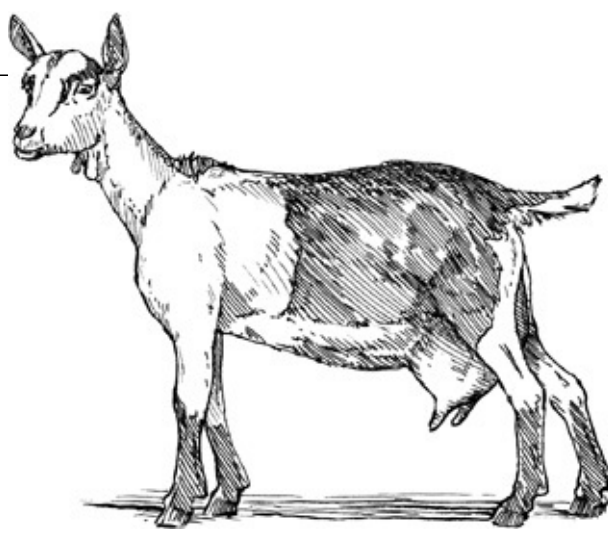
Bear in mind that many, perhaps most, American goats are not purebreds: they are mixed and can be identified as belonging to any particular breed. If these are fairly decent animals, they’re usually referred to as “grades”; if not, most people call them “scrubs.”

### *French Alpine*

The French Alpine originated in the Alps and arrived in the United States in 1920, imported by Dr. C. P. DeLangle. The color of Alpines varies greatly and can range from solid colors to a variety of patterns. Often one animal displays several colors and shades. Plain white and the fawn and white markings of a Toggenburg (page 13) are discriminated against.

There are recognized color patterns, such as the cou blanc (French for “white neck”). The cou blanc goat has a white neck and shoulders that shade gradually through silver gray to a glossy black on the hindquarters; there are gray or black markings on the head. Another color pattern, the chamoisée, can be tan, red, bay, or brown, with black markings on the head, a black stripe down the back, and black stripes on the hind legs. The sundgau has black and white markings on the face and underside. The pied is spotted or mottled; the cou clair has tan to white front quarters shading to gray, with black hind-quarters; and the cou noir has black front quarters and white hindquarters.

According to the American Dairy Goat Association, Alpines average 2,439 pounds (1,106 kg) of milk a year, with 3.2 percent butterfat. The record is 6,416 pounds (2,910 kg).



French Alpines have erect ears, and many of them have distinctive color patterns.

You might also hear of British Alpines, Rock Alpines (named not because they like to climb on rocks any more than other goats do but because they were developed in America by Mary Edna Rock and Swiss Alpines).

The stereotypical Alpine is pushy in a herd setting, will do anything for food, and is a little hyperactive. As with all stereotypes, this is a broad generalization, and there are many that don't fit that picture.

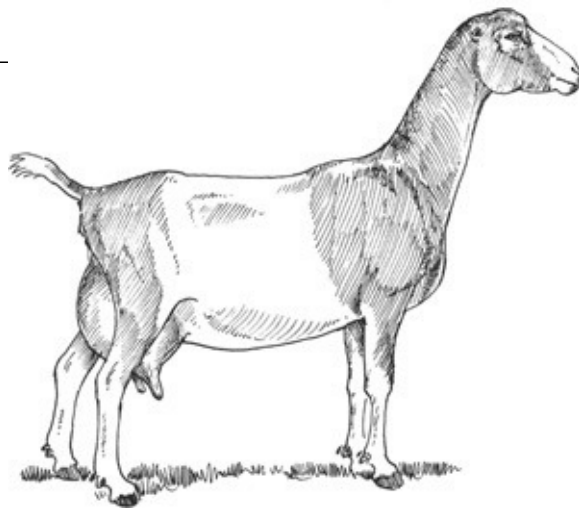
### ***LaMancha***

The LaMancha is a distinctly American breed. There's no mistaking a LaMancha: it looks as if it has no ears!

During the 1930s, Eula F. Frey of Oregon crossed some short-eared goats of unknown origin with her top line of Swiss and Nubian bucks. The result was the LaMancha.

If you show LaManchas at the county fair, you'll have to put up with many exclamations of "What happened to the ears!" Some people who are somewhat more knowledgeable about livestock will accuse you of allowing the animals' ears to freeze off. Even worse, you might be accused of cutting them off. But you don't milk the ears, LaMancha backers say. These goats have excellent dairy temperament, and they're very productive. A good average is 2,231 pounds (1,012 kg) of milk, with 3.9 percent butterfat.

If LaManchas have a personality quirk, it is that they tend to be the uncontested herd queens when put in with other breeds. One way goats create a pecking order is by nipping ears, so LaManchas can sit back and watch the others jostle for position. Although they can hear perfectly well, they are like teenagers — they play deaf when it suits them.



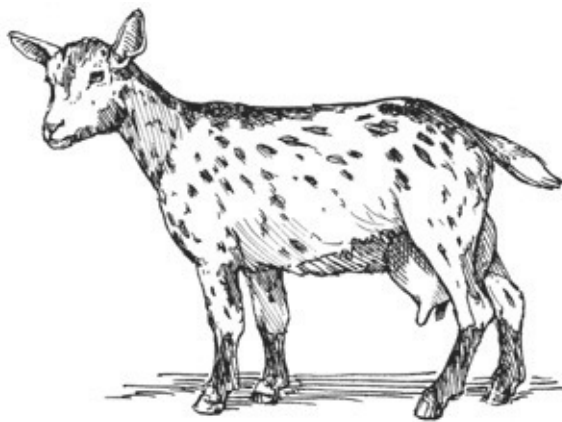
LaManchas are noted for their “lack” of ears and are claimed by some to be the most docile breed. They also tend to be good milk producers.

### ***Nigerian Dwarf***

Although these miniature dairy goats have been considered more of a novelty than true dairy animals for many years, the American Dairy Goat Association officially recognized this breed for its registry in 2005. Introduced in the early 1980s, when they were seen mostly in zoos, some of these little imports are excellent milkers for their size. As more serious breeders continue to develop them, their milk production is constantly increasing. What’s more, they are considered dual-purpose animals, providing both milk and meat. Consequently, this breed is of particular interest to the backyard or small farmer.

The Nigerian Dwarf was the breed chosen for the Biosphere 2 experiment, in which eight people spent 2 years (from 1991 to 1993) sealed inside a self-contained, mostly self-sufficient dome in Arizona, along with 3,500 plant and animal species and no outside supplies or support except electricity. Biosphere 2 was designed as a space-colony model, though ecological research became the primary, scientific goal. At any rate, future space travelers might be milking Nigerian Dwarfs!

One Nigerian Dwarf doe gave a whopping 6.3 pounds (2.9 kg) of milk on one test day in Biosphere 2, and another had 11.3 percent butterfat. A well-bred and well-managed Nigerian can be expected to produce an average of a quart (1 L) a day over a 305-day lactation. Many of these good producers have teats as large as those of the full-size breeds and are milked just as easily.



The Nigerian Dwarf takes less space than full-size breeds and is an excellent choice for the small farmer.

Nigerian Dwarf conformation is similar to that of the larger dairy breeds. All parts of the body are in balanced proportion. The nose is straight, ears are upright, and any color or combination is acceptable. Does can be no more than 22½ inches (57 cm) tall, bucks no more than 23½ inches (60

cm) tall. Weight should be about 75 pounds (35 kg). Being oversize for the breed standard is a disqualification in a goat show, as are a curly coat, a Roman nose, pendulous ears, and evidence of myotonia (a muscle condition characteristic of “fainting” goats).

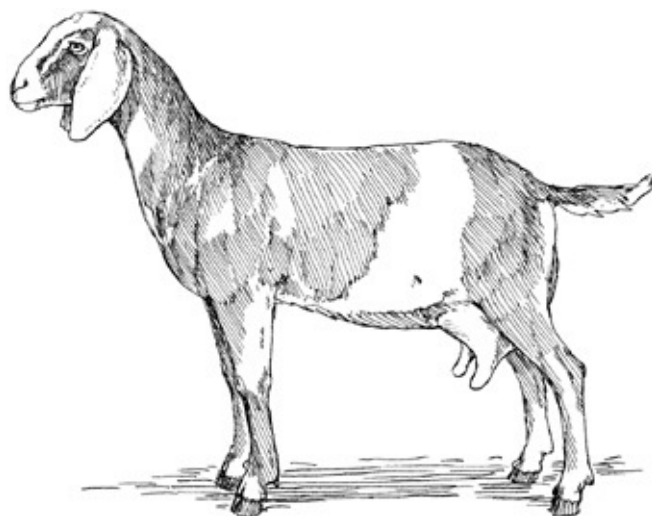
Nigerian Dwarfs offer several advantages to the home dairy. Three Dwarfs can be kept in the space needed by one standard goat, so with staggered breedings a year-round milk supply is easier to achieve. This is enhanced by the Dwarf’s propensity to breed year-round (compare this with seasonal breeding, discussed in [chapter 10](#)). These small goats can be kept on places that might not have room for larger animals. Also, for some people, a regular goat will produce too much milk, while the Dwarf’s quart-or-so a day is just fine. And the smaller animal is obviously easier to handle and transport, an attribute that many folks find especially appealing.

One potential disadvantage: many people still regard Nigerian Dwarfs as pets. If you purchase one from someone other than a dairy breeder, chances are the goat does not come from a line that has been upgraded and bred for milk production. She may not give enough milk to make it worth a trip to the barn, and if she has never been bred, she may have physiological problems that prohibit her from being bred in the future. Animals like this are not ideal choices for the home dairy.

## ***Nubian***

The most popular pure breed in America is the Nubian. Nubians can be any color or color pattern, but they’re easily recognized by their long drooping ears and Roman noses. Unfortunately for people who like peace and quiet, that nose acts like the bell of a horn. Nubians are noted for loud voices, a tendency to stubbornness, and an unqualified dislike of rain, but the babies are so darned cute it’s easy to overlook the personality flaws.

It’s commonly said that the Nubian originated in Africa, but technically, the genealogy is a bit more complicated. From Africa, the Nubian made a stop along the way in its journey to the United States. Our Nubians are descendants of the Anglo-Nubian, which resulted from crossing native English goats with lop-eared breeds from Africa and India. The first three Nubians arrived in this country in 1909, imported by Dr. R. J. Gregg of Lakeside, California. The thicker-bodied African genetics still show up in many herds in the United States. People looking for a dual-purpose animal that will maximize meat production probably want the thicker neck, shoulders, and loin, but those wanting higher milk production will prefer the more refined and angular variety.



Nubians are readily identified by their pendulous ears and Roman noses and should not be confused with the much shorter-legged Boer meat goat, which has a distinctive brown head, white body, and very bulky frame.

The Nubian is often compared with the Jersey of the cow world. The average Nubian produces less



milk than the average goat of any other breed, but the average butterfat content is higher. This is a good breed for cheese makers; not so good for dieters.

Averages can be misleading, though. While the average production for a purebred Nubian is about 1,795 pounds (815 kg) of milk in 305 days with 85 pounds (39 kg) (4.8 percent) of butterfat, the top Nubian recorded by the American Dairy Goat Association produced 6,416 pounds (2,910 kg) of milk and 309 pounds (140 kg) of butterfat in 305 days. Just to get a feel for how much milk that is, figure pounds (3.5 kg) of milk to the gallon (3.75 L). That's 802 gallons (3,036 L) of milk in 10 months.

### ***Oberhasli***

There are no more Swiss Alpines. No, they're not extinct. In 1978, their name was changed to Oberhasli (oh-ber-HAAS-lee). This goat was developed near Bern, Switzerland, where it is known as the Oberhasli-Brienzer, among other names.

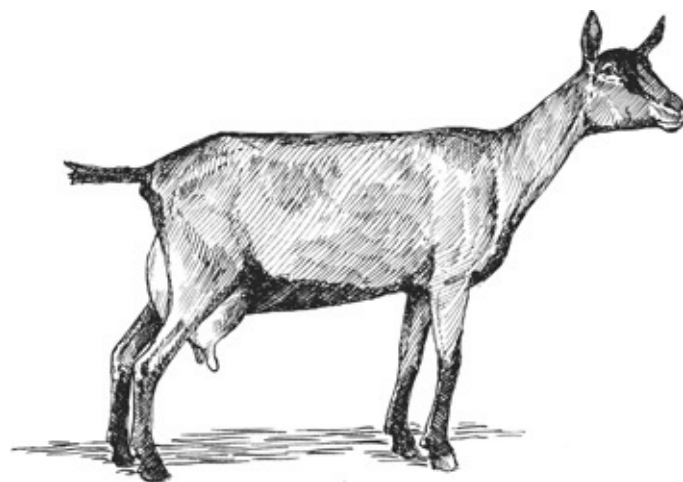
## HOW MANY GOATS?

According to the 2010 agricultural census, there are about 355,000 dairy goats in the United States, up 6 percent from a year earlier. The leading states are Wisconsin, California, Iowa, and Texas. However, the census covers only farmers (that is, those meeting minimum income requirements), and most homestead and backyard animals aren't included in these totals.

Who has the least? In 2010, Hawaii, North Dakota, and Delaware had such small goat numbers that the statisticians lumped them in with other states.

The outstanding feature in the appearance of the Oberhasli is its rich, red bay coat with black "trim." The black includes stripes down the face, ears, back, belly, and udder. The legs are also black below the knees and hocks. Oberhasli milk production averages 2,208 pounds (1,000 kg) of milk a year, with 3.7 percent butterfat. The record is 4,665 pounds (2,116 kg) of milk in 305 days.

Because Oberhaslis are fairly new to U.S. breed records, some people feel the purebred gene pool is a little shallow. Breeders will argue the point, but keep in mind that it may be more difficult to find unrelated breeding stock close to home when it's time to think about babies.



The Oberhasli is a rich bay color with black stripes on the face, ears, belly, udder, lower legs, and back. The American Dairy Goat Association allows for all-black coats, but only on does.

### ***Saanen***

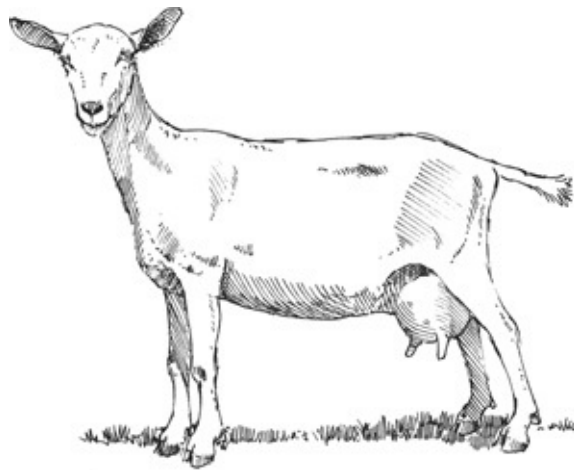
Next in popularity behind the Nubian is the Saanen (pronounced SAH-nen). This is a light cream or

pure white goat with erect ears and a “dished” face that is just the opposite of the Nubian’s. Saanens originated in the Saane Valley of Switzerland and have enjoyed a wider distribution throughout the world than any other breed. The first Saanens arrived in the United States in 1904.

They are large goats, with high average milk production: almost 2,500 pounds (1,135 kg) in 305 days. Butterfat averages 3.3 percent on a yearly basis. The all-time milk record is 6,571 pounds (2,988 kg).

Until recently, Saanens that were not pure white or light cream were discriminated against in purebred circles. Any that were colored or spotted could not be registered, and they were frequently disposed of. That changed in the 1980s when some Saanen breeders kept the colored or patterned animals, found that they were fine dairy animals, and started promoting them as a separate breed. They’re not crossbreeds; they’re actually purebred Saanens but with a “color defect” that results when both the sire and the dam carry a recessive color gene. Today these goats are called Sables and were recently accepted as a separate breed by the American Dairy Goat Association. Since they are essentially “Saanens in party clothes,” they won’t be described separately here.

Saanen owners like to describe the personality of their breed as “laid back.” A commercial producer with hundreds of animals would probably jump at that trait, but for the family dairy, it might not be as important.



Saanens are always light cream or white and have “dished” or concave faces.

## IT'S IN THE GENES

In goat genetics, white is dominant and black is recessive. The white color pattern on Toggenburgs, including the vertical white stripes on both sides of the face, is dominant.

### ***Toggenburg***

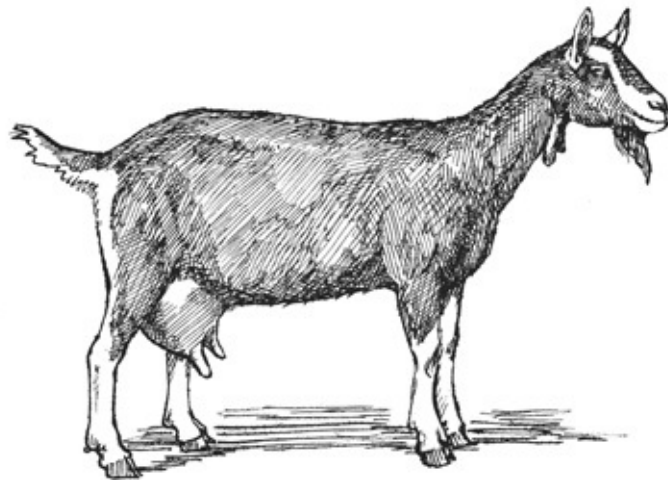
Toggenburgs are the oldest registered breed of any animal in the world, with a herd book that was established in Switzerland in the 1600s. They were the first imported purebreds to arrive in the United States, in 1893, and have always been popular. Poet Carl Sandburg had a well-known herd of Toggenburgs.

Toggs, as they’re sometimes affectionately called, are always some shade of brown with a white or light stripe down each side of the face, white on either side of the tail on the rump, and white below the hocks and knees.

Toggenburgs produce an average of 2,302 pounds (1,045 kg) of milk a year, with 3 percent

butterfat. That's a little short of what the Saanens and Alpines average, but a Toggenburg currently holds the all-time record for milk production from a dairy goat, with 7,965 pounds (3,613 kg) — an astounding 995 gallons (3,767 L) of milk a year, from one little goat!

Someone walking into a herd of look-alike Toggenburgs will wonder how the owner can tell one from another, but each has her own personality and color modification that can be recognized once the eyes adjust.



Toggenburgs have white markings on the face, lower legs, and rump.

### ***Other Breeds and Uses***

New breeds are being created. (Mating a doe of one breed to a buck of another produces a crossbred; creating a new breed is much more involved than that and generally takes years.) Some recently created breeds include the Kinder (a Pygmy/Nubian cross), the Pygora (Pygmy/Angora), and the Santa Theresa (another dual-purpose breed). Although these have very enthusiastic, usually regional backers, they are rare compared with the eight recognized breeds, and most are still in the early stages of development.

You might hear about a few other rare breeds, such as the Tennessee Fainting Goat or Wooden Leg, which goes by several other names as well. When startled by a loud noise, the goat's muscles contract, and she tips over in what looks like a faint. Formerly a curiosity, many have been developed as meat goats.

### ***African Pygmy***

Another dwarf breed gaining in popularity is the African Pygmy, often referred to simply as the Pygmy. This breed was first seen in the United States in the 1950s, and then only in zoos. These little goats are only 16 to 23 inches (40 to 58 cm) tall at the withers at maturity, and does weigh only 55 pounds (25 kg). They are very cobby (stocky, compact, and well muscled) — quite unlike a standard dairy animal. They look much like beer kegs with legs.

Despite their tiny size, some Pygmies are said to produce as much as 4 pounds (1.75 kg) of milk a day — that's half a gallon (almost 2 L) — and 600 to 700 pounds (270 to 320 kg) a year. And while the lactation period is shorter than for full-size goats (4 to 6 months rather than 10 months), the butterfat content often exceeds 6 percent. They are not really considered to be milk goats, and there is the practical problem of getting even a small bucket under them.

The Pygmy is more likely than the other breeds to have triplets or even quadruplets. They are registered by the National Pygmy Goat Association.



Some African Pygmies can produce enough milk for a small household, but they are generally considered pets.

## **Angora**

Raised primarily for their long silken mohair, Angora goats have become quite popular in recent years. They are also raised for meat. While the fiber aspects are beyond the scope of this book, basic feeding, breeding, and management are similar for both Angora and dairy goats, except that you do not remove the horns on an Angora goat. The horns act as a cooling system for the hair-covered bodies.



Angora goats are raised primarily for mohair and meat.

## **Working Goats**

Goats have proved useful as working animals, too. Wethers, or neutered males, are commonly used for packing, and goats of any breed can be trained to pull a small cart or wagon. In our technologically driven society, it's also good to see that goats are being put to practical use as "brushers" along roadways, power lines and other places where weeds and brush need to be cleaned out. In some parts of the country, such as California and Colorado, leasing out a herd of brush goats can be a lucrative business. It's also good for the environment.

## **Meat Goats**

And then there are meat goats — animals raised for that specific purpose. The demand for goat meat has grown tremendously in recent years, due largely to ethnic markets (see [chapter 15](#)). Spanish and Angora goats were the traditional meat animals in the United States, but the Boer, originating in South Africa, has become hugely popular among meat goat ranchers. When they were first imported via New Zealand in 1993, a breeding buck could fetch as much as \$70,000. We have since come to our senses and expanded herd numbers to the point where top prices are significantly less than that. I've never

heard of anyone milking a Boer or other meat goat, but dairy goats provide plenty of meat as a by-product when culls and unwanted kids are butchered.

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## Selecting a Breed

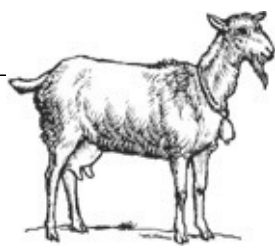
Which breed is best? There is no answer to that question. If your reason for raising goats is to have a home milk supply, a goat that produces 1,500 pounds (680 kg) of milk a year is as good as any other goat, regardless of breed, that produces a like amount. You might not need or want a purebred at all, least at first. Mixed-breed goats are much easier to find, usually cheaper, and in some cases produce more milk than purebreds.

Even for those interested in purebred stock, the choice of a breed isn't made because of any breed superiority or rational factors. If you are intending to make prodigious amounts of cheese, you might be influenced by breeds that tend to produce higher butterfat, but there is no guarantee that you will also get the higher protein levels that yield lots of cheese. On a small scale, the little bit of extra solids will hardly show in the finished product. You can, however, taste more butterfat in your milk, and some say it is creamier and sweeter ... also fatter.

In most cases, a breeder just "likes the looks" of a particular breed. It's also easier to find certain breeds than others, because the popularity of each varies from place to place. You might get a certain doe just because she's available, but if there is also a convenient stud service and a more likely market for her kids, you'd be making a wise choice.

## So You Want a Goat?

This brief look at some of the basic facts about goats should help you decide if you really want to raise goats. I hope you do — but with full awareness of what will be expected of you. That means you'll want a lot more information on care and management. And by all means, be sure to read that section of the book before you go looking for your goat. But even before we get to that, let's take a closer look at the product that probably led you to goats in the first place: milk.



## 2

# All About Goat Milk

ONE OF THE FIRST QUESTIONS a prospective goat owner who is interested in a family milk supply asks is, “How much milk does a goat give?”

While the question is logical and valid, it’s something like asking how many bushels of corn an acre of land can produce. How good the soil is, how much fertilizer is applied, what variety of seed is planted, how much of a problem weeds and insects are, and the amount of heat and moisture at the proper stages of development are all factors that affect the outcome.

To put this in terms that might be more familiar to city dwellers, how many ladies’ coats can a merchant sell? It depends on whether the seller is in downtown New York or on the edge of a small southern village; whether the coats are mink or cloth; whether it’s June or December; and so on.

## How Much Milk?

There can be no set answer to the question of how much milk a goat will give, but here are some considerations.

### *Lactation Curves*

It must first be understood that all mammals have lactation curves that, in the natural state, match the needs of their young. Through selection, humankind has altered these somewhat to meet human need but they’re still there.

The supply of milk normally rises quite rapidly after parturition (kidding, or freshening, or giving birth) in response to the demands of the rapidly growing young. In the goat, the peak is commonly reached about 2 months after kidding. From the peak, the lactation curve gradually slopes downward as the kid begins eating forage and gradually weans away from an all-milk diet.

This brings up what is probably the most common problem with terminology in reference to production: we often hear of a “gallon milker.” The term has little or no practical value, because we want to know at what point in the lactation curve this gallon-day occurred and, even more importantly, what the rest of the curve looks like. The goat that produces a gallon a day 2 months after kidding, then drops off drastically and dries up a short time later, will probably produce much less milk in a year than the animal whose peak day is less spectacular but that maintains a fairly high level over a long lactation. Especially in the home dairy, where a regular milk supply is the goal, slow and steady is more desirable than the flashy one-day wonder.

In addition, a “gallon” (3.75 L) is neither an accurate nor a convenient unit of measure for milk. Milk foams, and what if a goat gives just over or under a gallon? A gallon and 1 cup is tough to measure and even tougher to record. It’s much more practical to speak of pounds of milk per lactation

As mentioned in the last chapter, a gallon weighs very close to 8 pounds (3.5 kg). The traditional lactation period is 305 days. If a goat is to be bred once a year and dried off for 2 months before kidding for rest and rehabilitation, this period is logical. The 305-day lactation period is simply an average; most goats milk for more or less than 305 days. According to the U.S. Department of Agriculture (USDA), only one-third of all does with official Dairy Herd Improvement Association (DHIA) records milked for 305 days. The milk production of many does declines sharply with the onset of seasonal estrus, or heat periods; after estrus, the does are dried off.

The average 305-day lactation period is a convenient way to compare animals (cows are judged in similar fashion), but it is mainly for record purposes. The backyard goat dairy has no need to adhere to such a schedule, and in practice even most commercial dairies milk an animal for shorter or longer periods, depending on the animal's production. In some cases, it might not be worth dirtying the milk pail for a quart or so. In others, even a cup of milk might be considered valuable.

Actually, many household goat dairies with animals that exhibit long lactations would do well to milk them for as long as they can without rebreeding. Production could be lower the second year, but this would be offset by avoiding a 2-month layoff, breeding expenses, and unwanted kids — including the considerable amount of milk kids will drink if they are not disposed of at birth. It should be pointed out, however, that not many goats will milk for that long: most will be dry before the 10 months are out (see [chapter 10](#)).

### ***Average Production Levels***

Looking at averages can be meaningless — after all, how many American families really have 2.4 children? — but sometimes that's the only way to get even a rough idea of a situation. Just remember that when a breed averages 2,000 pounds (900 kg) of milk, some of the goats are producing 3,000 pounds (1,350 kg), and some are only milking 1,000 pounds (450 kg). Some may even be producing less than that.

For many years we said a decent average was 1,500 pounds (680 kg) a year, but that average is increasing. In 1998, for instance, the average for all large dairy breeds was 1,794 pounds (815 kg). In 2007, it was 2,241 pounds (1,015 kg). But then the question arises, is it increasing because more good goats are on test while less productive animals aren't? Fifteen hundred pounds — about 187 gallons (708 L) — is still a reasonable expectation for the beginning goat farmer. But bear in mind that this average of 187 gallons over a period of 305 days doesn't mean you can plan on 0.6 gallons (2.25 L) a day. Remember the lactation curve.

### ***Breed Records***

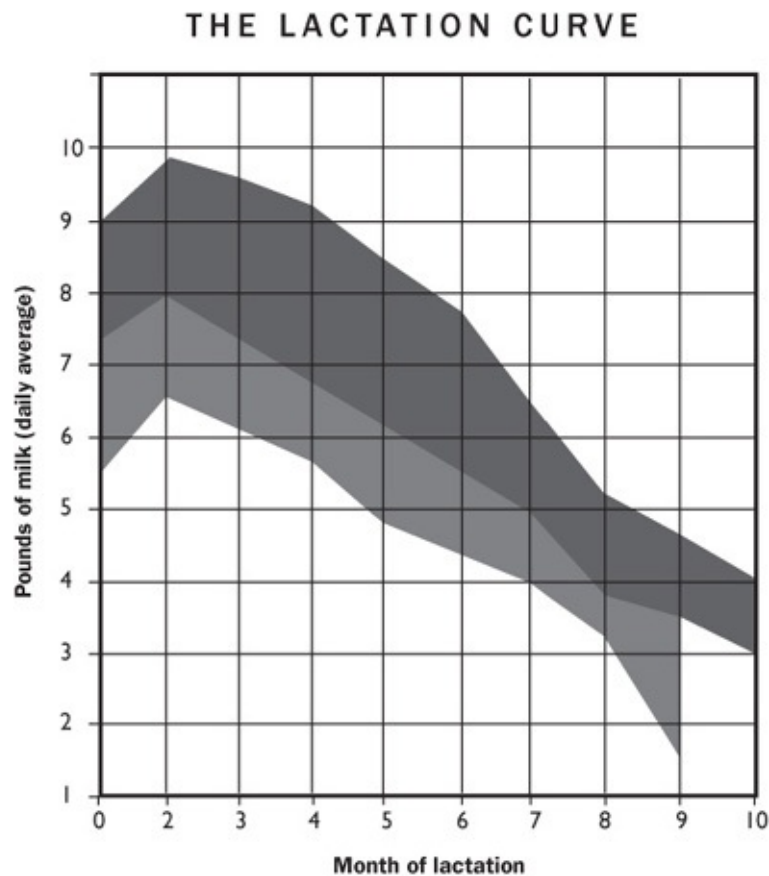
Breed records are even more meaningless for the home dairy than are averages. The new goat owner has about as much chance of even coming close to record production as the guitar-pickin' kid down the road has of coming up with a hit song. It takes knowledge, experience, work, and maybe even a few lucky breaks, to produce a winner in any field.

At least the records will show you what goats are capable of. And they also demonstrate what a can of worms you open when you ask, "How much milk does a goat give?"

You won't start out with a record setter, and you hope you won't get stuck with an underproducer, but it would be nice to find one that's "average." The only way to know for certain how much milk a goat gives is to milk her, weigh the milk, and record it for the entire lactation period. Or purchase a goat from someone who's been doing that.

## Using Production Records

Leaving the pacesetters for a moment, let's look at the lactation curve on pages 20 and 21. These are actual production records of a small herd of Nubians. The top doe produced 2,150 pounds (975 kg) in 10 months, the bottom doe 1,300 (590 kg) in 9 months. Notice the lactation curve. The average production goes from 7 pounds (3.2 kg) at kidding to about 8 pounds (3.6 kg) 2 months later. From there it tapers off to about 3 pounds (1.4 kg) at 10 months after kidding.



The best doe in the herd produced 2,150 pounds (957 kg) of milk in 10 months (n). The lowest record shown is 1,300 pounds (590 kg) in 9 months (n). The average for the entire herd was 1,730 pounds (785 kg) in 10 months. This chart is just for comparison.

The lactation curve on page 21 provides another example of an “average” small herd. These are actual, individual records from a herd of four grade does; they show how much production can vary among animals. One doe had a 17-month lactation. She gave 1,800 pounds (815 kg) in the first 10 months and continued to produce a steady 5 pounds (2.25 kg) daily until pregnancy caused production to drop. Another doe reached her peak at 4 months.

If you owned these four does and were going to sell one, which one would it be? There are two lessons here:

First, remember this when you buy a goat: are you buying an animal someone is culling because of low production? Ask to see milk records.

Second, without records and perhaps a chart like this one, no matter how rough, you don't know for sure what's happening. Not a month from now, not a year from now, and certainly not 5 years from now when you're trying to decide which granddaughters of your present milking does to keep and which ones to sell or butcher.

Note that one of these does produced more than twice as much as another, even though they ate about the same amount of feed and required the same amount of care. Note also that two weren't worth milking after only 8 months. And finally, it should be obvious that when you milk your own goats, you don't have as steady a milk supply as when you pick up a gallon from the grocery store



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sample content of Storey's Guide to Raising Dairy Goats: Breeds, Care, Dairying, Marketing (4th Edition)

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