

COOPERATIVE EXTENSION
UNIVERSITY OF CALIFORNIA

GOATS FOR HOME
MILK PRODUCTION

Number 7

Picking a Doe

When picking a doe, there are three basic considerations: milk production, appearance and herd health. It is not necessary to buy a purebred doe if she is to be used only for milk production.

A good doe should produce more than 1,200 pounds of milk during a 10-month lactation cycle. This is more than 2 quarts a day average, but production will vary from day to day, and there will be a "dry" period of about two months when the doe will produce no milk. Your doe must be bred and produce kids each year to keep her producing milk.

Production records are not always available, but if they are you should check them before purchasing your doe. If you are buying a young doe that has never produced, ask to see the production records of her dam and those of her sire's other female offspring.

Make sure the doe you buy has good teeth, a glossy coat and skin that is free of sores and dandruff. She should be in good physical condition but not fat. Her udder should be large before milking and considerably smaller after milking. The udder should feel soft and pliable after milking and should be free of hard lumps, lesions or scars. Teats should be about "hand size." Goats with extremely large or small teats are harder to milk. Also, kids may have difficulty nursing does with large teats.

Pendulous udder, a condition where ligaments holding up the rear of the udder break down and cause the udder to sag, is sometimes a problem with dairy animals. Avoid purchasing a goat with this problem because her udder will be more prone to injury and infection.

Other things you can do to improve your chances of purchasing a healthy goat include checking the ears for sores, scars or scabs; feeling under the jaw for knots, lumps or growths; and observing whether the hoofs have been properly trimmed. If the doe is lame, she may have foot rot, especially if her hoofs are overgrown. Also, examine her for lice, ticks and ear ticks.

It also is a good idea to contact a veterinarian to have your doe tested for tuberculosis and brucellosis at the time of purchase. Although these diseases are rare in dairy goats, they can be transmitted to humans through the milk from an infected animal.

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Shelter and Space Requirements

You will need a shelter with about 24 square feet of space for each goat. The shelter should be clean, dry and free from drafts. Bedding is desirable, but not absolutely necessary. However, since goats are sensitive to cold, bedding is helpful during cold weather. The manure and bedding make good compost or soil amendments for your garden.

Goats should have at least 200 square feet of space for exercising, preferably adjacent to their shelter so they can go in and out at will. Since goats are natural climbers, you will need a fence at least 48 inches high and will probably be better off with one that is 60 to 72 inches high. The fence should be made of non-climbable material such as woven wire. It may be a good idea to place a wooden box or some other object in the middle of the yard for the goats to climb on. Make sure that the gate locks securely as goats are very good at opening gates.

Feeding the Doe

Feed does according to their stage of production. Dry does in good condition will do fine on good alfalfa hay, clover hay, or pasture. If the dry does are thin or the forage is of low quality, you will need to feed them about 1/2 to 3/4 pound of concentrates (grain or other high energy feeds) per day until they are in good condition.

Pasture, preferably a good mixture of legumes and grasses, is the easiest and generally the cheapest method of feeding goats. You will need about 1/2 acre per goat if the grazing season is 5 to 6 months. If fences are inadequate, goats can be tethered, but this means extra work because the goats have to be moved daily and they have to be watched closely to make sure they do not get tangled in their tether.

For milking does fed good alfalfa, clover, or other legume hay, you will need a concentrate that has about 12% crude protein (CP). With a good mixed hay containing both legumes and grass as the forage, the concentrate should have 16% CP. If the hay or pasture has no legumes or is poor quality, you should feed a concentrate containing 20% CP. The crude protein percentage is given on the label of commercially prepared concentrates. As a rule of thumb, feed milking does 1 to 1 1/2 pounds of concentrate per day if the roughage is of good quality. If the concentrate being fed is all grain, you should supplement the doe with calcium. Watch the doe's physical condition and milk production closely and adjust her feed accordingly.

If you are feeding a good legume hay as the roughage your goats will probably need additional phosphorus. The easiest way to supply phosphorus is by mixing dicalcium phosphate, available at most feedstores, or other high phosphorus supplement 50:50 with salt and putting this out free-choice. If you live in a low iodine area, it might be wise to use iodized salt instead of plain salt in the mixture. If you are feeding roughages other than legume hay, certain trace minerals essential to the diet may be lacking and you should substitute trace mineralized salt for the plain salt. Most commercial concentrate mixes

have adequate trace minerals and salt and you shouldn't have to worry about supplementation if you are feeding a commercial concentrate mix as part of the diet.

Make sure that clean, fresh water is available to your goats at all times.

Milking

Cleanliness in milking is extremely important. Milk twice a day as close to 12 hours apart as possible. Brush the doe to remove loose foreign material from the coat and wash her udder, teats and your hands before each milking. Discard the first few streams of milk from each teat because they may have some foreign material in them. You should have a seamless, stainless steel milking pail to facilitate cleaning and prevent bacteria buildup.

Strain the milk immediately through several layers of cheesecloth or special filters that can be purchased from a dairy supply store. Cool the milk quickly to 40 to 50 degrees by setting the milk containers in a bucket of water (ice water or flowing water cools the milk faster) and then refrigerate it.

Milking utensils should be rinsed with cold water, scrubbed in hot soapy water, and then scalded in boiling water after each milking. They should be stored in a dry, dust-free place.

Breeding and Kidding

The breeding season for goats is usually from September to March. Does come into heat about every 21 days (17 to 25 days) and remain in heat for 1 or 2 days. Breed young does when they are 12 to 15 months old and weigh from 85 to 90 pounds. Does should be in peak physical condition at breeding. Gestation length is approximately 5 months. A doe usually has 2 kids but can have from 1 to 4 kids.

If you want to keep female kids for milking you should breed your doe to a buck from a high producing dam and, if possible, known for siring high-producing daughters.

A few days before your doe is due to kid, isolate her in a separate pen. Provide her with clean, dry bedding and plenty of fresh water. You may want to feed her some bran as a substitute for part of her concentrate during the last few days of pregnancy. After she kids she should be fed concentrates in slowly increasing amounts until she is up to her normal consumption for milk production. Remember, make all feed changes gradually or your goat may get sick.

Wipe the newborn kid dry with a clean towel and clip and paint his navel with iodine to prevent infection. The kid should receive a feeding of colostrum (doe's first milk) within 2 to 3 hours after birth. Colostrum is vital to the kid because it is a physic and supplies antibodies and vitamins necessary for good health. The easiest way to feed the colostrum is to let the kid nurse the doe

for 2 or 3 days, but it is possible to remove the kid from the doe and feed the colostrum from a bottle with a nipple.

The doe and her kids should be separated early. It will be necessary to teach the kids to drink from a pan or a bottle with a nipple. Feeding the kids from a pan will be easier than from a bottle, especially if you are going to mix the milk twice a day.

For the first few days, the kids should be fed three times a day and then twice a day. They will consume 1 1/2 to 2 pints of milk per day and they can be fed whole cows' milk or non-fat dry milk, but the change from goats' milk to cows' or non-fat milk should be done over a period of a few days. Lamb milk replacer is a good alternative to feeding cows' milk or non-fat dry milk. Lamb milk replacer has more fat and protein than the other two and will supply the kids with higher energy from which they will make faster gains. Be sure to keep all utensils clean to retard bacterial growth.

Keep fine stemmed, leafy alfalfa or other good roughage available to the kids at all times. Kids will start eating hay and grain at 10 days to 2 weeks. After the kids are about 3 weeks old, give them some calf starter or other high-protein concentrate once or twice a day. This will help to get them on solid feed and will increase their gains.

Wean kids at 4 or 5 months of age, and feed them good-quality roughage and 3/4 to 1 pound of dairy calf growing ration or other concentrate.

HELPFUL PUBLICATIONS

Walsh, Helen. Starting Right with Milk Goats. Garden Way Publishing, Charlotte, Vermont 05445.

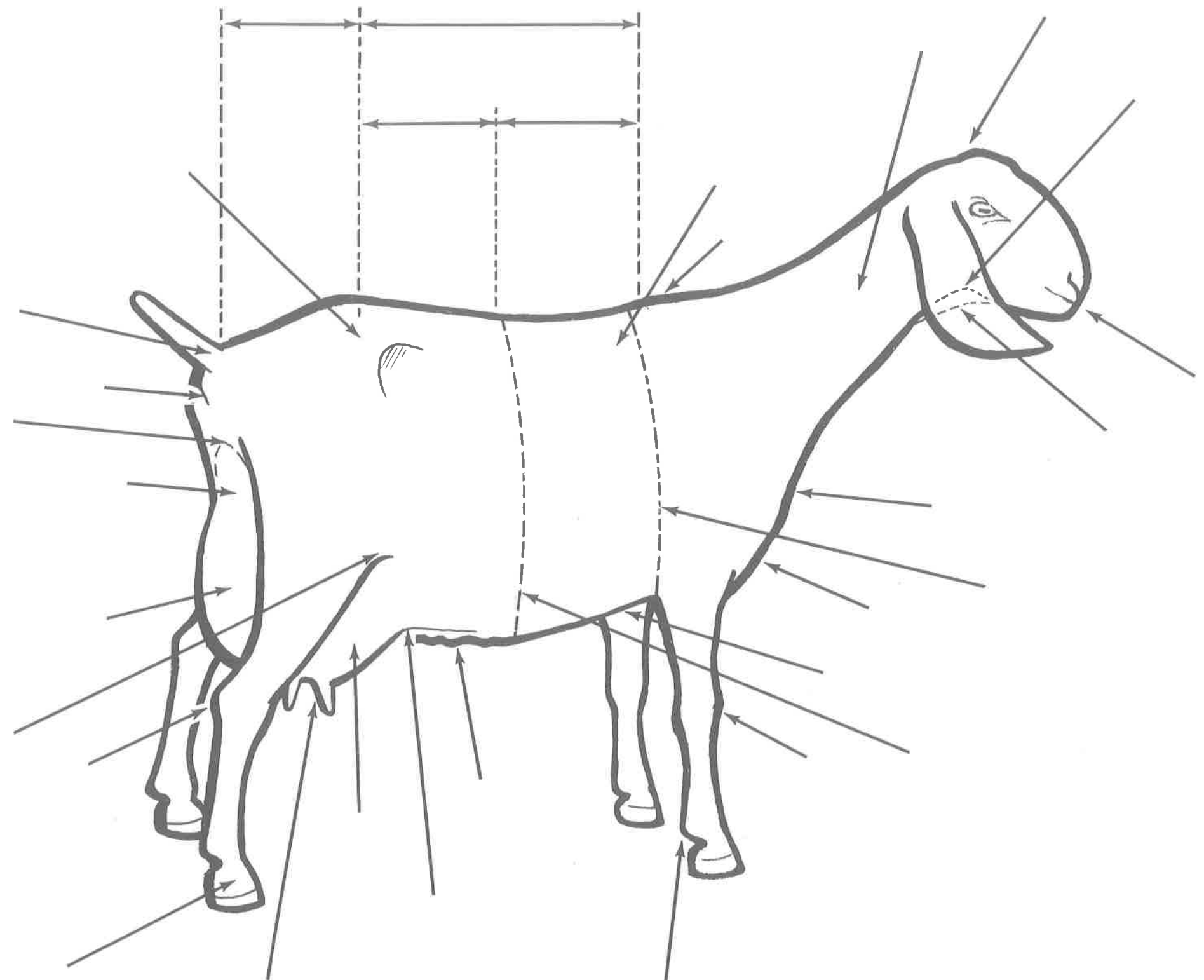
McNulty, R. W., A. D. Aulenbacher, E. C. Loomis, and G. L. Crenshaw. Your Dairy Goat. University of California Cooperative Extension (Leaflet 2736)

Proceedings, Dairy Goat Day. March 31, 1975. University of California, Animal Science Extension, Davis, CA 95616. (50 cents)

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- POLL** **MUZZLE**
- THROAT** **DEWLAP**
- POINT OF SHOULDER**
- HEART GIRTH**
- BRISKET** **CHEST FLOOR**
- BARREL** **KNEE**
- DEWCLAW** **MILK VEIN**
- FORE UDDER ATTACHMENT**
- FORE UDDER** **TEAT**
- PASTERN** **HOCK**
- FLANK** **REAR UDDER**
- REAR UDDER ATTACHMENT**
- ESCUTCHEON** **PIN BONE**
- TAIL HEAD** **HIP** **RUMP**
- BACK** **LOIN** **CHINE**
- WITHERS** **CROP** **NECK**

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DAIRY GOAT... PARTS IDENTIFICATION

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4-H DAIRY GOAT PROJECT

REQUIREMENTS AND GUIDELINES FOR LEADERS AND MEMBERS

The goat has always been a little outside the charmed social circle of American farm animals. When you mention "goat" in a group of agricultural people, you invariably get a chuckle, albeit a friendly chuckle, but nevertheless, a chuckle. Goats, perhaps, have never been really accepted. Maybe the time has come for them to go off on an integration "kick." Evidence of this lack of integration comes to you when you try to find some research on goats. Of course, the usual answer is that they are not economically important. However, in some areas, goats are profitable and there is a market for goat milk and other goat products, if properly pursued.

My first introduction to goats as a child was when someone gave me the book, "Billy Whiskers Goes South." If memory serves me right, Billy was a gay, carefree animal. He was forever eating up tin cans, pulling down clotheslines, and assisting somebody over a fence by forceful pressure on their posteriors.

About ten years ago, we began to hear about 4-H Goat Projects in Southern California. Not having any literature or planned goat program, we thought if we didn't pay too much attention to them they would fade away. However, interest in goats continued, and quite a number of 4-H members were recruited in goat projects in California. This year four hundred and forty-four 4-H members have milking-goat projects in the state.

We often talk of grassroots push for Extension programs. The 4-H goat project started with interested local people and has developed into quite a sizeable project program in Southern California. It is interesting to note that the largest goat dairy in the county today was started by a couple whose child was allergic to cows milk. They had to get a goat to feed the youngster. This child, Pinky Carman, is now a young lady and has been declared state winner in the 4-H Dairy Program, and she won this outstanding award in the 4-H dairy goat project program. Sheila Nixon, another 4-H member, was declared the national winner in the 4-H dairy program, and she too had a goat project. This project developed into a family affair, and the family is now making a living from a herd of milking goats. The goat dairy that was started because of one allergic child now milks approximately eight hundred goats and has eleven hundred in the total herd. The goat dairy is known as Laurelwood Acres, and Mr. Nordfeldt, owner and manager, and his staff have been excellent cooperators in helping us train Extension agents and in producing 4-H goat literature. A few years ago, our farm advisors doing 4-H Club work wanted some training in goat husbandry. We organized a conference for Extension agents at the Nordfeldt ranch. There

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University of Arizona, Tucson, Arizona.

Prepared by: A. D. Aulenbacher, 4-H Specialist, University of
California, Riverside, California.

we trained them in goat management, goat judging, breed identification, and to further sell goats, Mrs. Nordfeldt put on a luncheon that consisted of barbecued chevon, goat milk, goat cheese, and goat ice cream. I don't recall whether we had goat butter, but perhaps we did. In my opinion, this luncheon dispelled more myths about goat products than anything we could do.

Later on there was demand for some goat literature, so again Mr. Nordfeldt cooperated with us in developing our present 4-H manual entitled, "Your Dairy Goat." This has been a popular publication, and our records indicate that over 2,800 copies have been distributed to other states. We do not have a record of the number of states requesting permission to print the publication on their own, but we know there are several. Apparently, there is a ground swell for 4-H goat projects throughout the nation.

What are the advantages of a 4-H goat project: Size is a definite advantage for beginning 4-H members. When youngsters are small, a small animal will be easier for them to handle than a large one, and they need little space. Cost is another factor. A weaned grade kid can be purchased for about \$25.00 to \$50.00 and a purebred doe from \$75.00 to \$150.00. Parents of 4-H members often want to know the cost of feed. If you purchased a weaned kid at five days of age, a rough estimate of the cost of feed to first freshening would be \$75.00 and about \$55.00 per year after freshening. A goat project will provide milk for family use, and if the youngster stays in 4-H and builds up his herd, he may find a commercial market for the milk. We have examples of a 4-H goat project developing into a family business. In addition, youngsters can exhibit their animals at the fair, and depending upon ability and the quality of the animal, earn award money for exhibiting and participating in showmanship contests. They also can learn the fundamentals of judging livestock by participating in goat judging, training days, and contests. A 4-H leader put it this way: "Goats are a good project to bridge the gap between pets and larger animals."

Some of the disadvantages are: The difficulty in some areas of getting good foundation stock. The market for goat meat is rather limited. In Southern California they say there is a good market for kids around Easter time and that old does can be sold for barbecue purposes. However, an old buck is unsalable for meat.

We often hear the expression, "smelly old goat." However, this does not apply to the female goat. The Department of Agriculture in their Milk Goat Bulletin makes the following statement: "Milk goats are exceptionally clean animals and are more fastidious in eating habits than any other type of domestic animals."¹ The buck is another matter. He does smell and must be stabled away from the milking herd. However, the buck problem may become a thing of the past. It is my understanding that scientists in Canada have developed a frozen goat semen which is being distributed by some of the leading dairy cow semen distributors. The National Association of Artificial Breeders and the Jessup Breeders have goat semen available. The large goat farm I referred to previously has produced some of the first kids in the United States from artificial insemination.

Some facts about goats: Everyone asks, "Well, how much milk do they give?" An average milker will produce about two quarts of milk per day over a ten-month lactation period. A good doe will produce 1,800 pounds or three quarts per day in the same period. However, some of the outstanding animals do much better. The Laurelwood Farm had a 130-pound Toggenburg that produced 4,200 pounds in a lactation period. This will average about six and one-half quarts of milk per day. One of our 4-H members had a Saanen that produced 3,857 pounds in a lactation period. Mrs. Carl Sandburg, the author's wife, had a Toggenburg that produced 5,700 pounds of milk in a lactation period.

The gestation period of a goat is five months, and they can be bred to freshen at thirteen months of age. Goats are usually milked ten months and dry one to two months before they freshen again. They are seasonal breeders which makes year-around production difficult. August to February is the normal breeding season, coming in heat every twenty-one days.

Goats usually have twins, and their increase is about 190 per cent. A good milking doe needs about five pounds of hay and two pounds of concentrate per day.²

The butterfat content of goat milk runs between 3.5 and 4 per cent, depending on breed.

The one thing against the goat dairyman is the tremendous labor requirement. It is estimated that it takes thirty hours of labor for one doe each year in a one-hundred-doe dairy. It takes three times³ the labor to produce a unit of goat milk as compared to a cow dairy.³ The average cost of producing one gallon of goat milk is 87½ cents.³ This is from a cost study made in 1950. The cost is higher now and is estimated to be \$1.12 per gallon.

Per capita, goat milk consumption is highest in Southern California. Fresh milk sales in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties averaged 68,000 quarts per month, selling at between fifty and sixty cents per quart.

Distribution has always been a problem for the goat-milk producer because of the limited consumption. However, in Southern California, they have teamed up with the cow dairies, delivering their milk to the cow dairies that handle the retail distribution to homes and supermarkets. This seems to be a very practical solution, and, from all indications, is working well.

In the San Joaquin Valley, there are evaporating and drying plants to handle the goat milk production in that area.

ADVERTISING: How do you advertise? One solution is to talk to the M.D.'s. If they know that fresh goat milk is available, they will prescribe it for people who are allergic to cows milk and for some stomach disorders such as ulcers. In addition, the Laurelwood Farm has a program in which all second-graders from Burbank and Pasadena schools visit the farm and see the goats. It has two advantages. The small fry will accept goat milk as a standard item, and apparently

they can put on a little pressure or at least inform mama and papa about the availability of the product.

HEALTH QUALITIES OF GOAT MILK: There has been much talk about the relative merits of goat's milk versus cow's milk from a health standpoint. I don't think there's much ground to argue on the allergy point of view. Some people are allergic to cow's milk and not to goat's milk. Enough research has been done to establish the fact that the fat globules of goat's milk are smaller and that the curd is softer. This may be an advantage to some and not to others, but there are no good studies to give us the relative merits of the two types of milk. In a nutrition study by Mack,⁴ thirty-eight children were divided into two groups, and in each group there were ten girl and nine boy babies. One group got a quart of cow's milk a day and the other a quart of goat's milk each day. There were statistically significant differences between the two groups in their physical development. However, on some points the cow's milk won, and on some points the goat's milk won.

The researcher had this to say about the study: "The five-month's study must be regarded as preliminary. Whereas the results of this study are strongly indicative of the fact that goat's milk has some superior qualities, the work should be extended before final conclusions are drawn."

There is apparently much work that needs to be done as to the relative qualities of goat's milk and also to the goat itself concerning such problems as animal nutrition and genetics. The entire Laurelwood herd will soon have their DHIA records processed by machine. Buck proving could become as common as sire proving. It is my belief that the annual production of goat's milk could be increased appreciably, if we had the necessary research to tell us how to do it.

It has been suggested to me, and I will pass it on to those of you who work with graduate students, to suggest that some of the student research might be done on the dairy goat.

I have a set of slides showing the principal breeds of milk goats in the United States.

Slide 1. (Picture of Saanen)

The Saanen is a white, or slightly cream-colored goat of Swiss origin. It produces the greatest quantity of milk. The matured doe weights about 135 pounds and up.

Slide 2. (Picture of Toggenburg)

The Toggenburg is a Swiss breed. It is brown with a light stripe down each side of the face. The legs are white below the knees, and there is a white triangle on either side of the tail. The Toggenburg, referred to as the guernsey of the goat family, produces rich milk in quantity. The size of the matured doe is 115 to 150 pounds.

Slide 3. (Picture of French Alpine)

The French Alpine is a French breed. The colors vary from white, grey, brown, black to red and show shadings and combinations of these colors on the same animal. Its outline is angular. Like the Toggenburg, it produces rich milk in quantity. The average doe should weigh not less than 125 pounds.

Slide 4. (Picture of Nubian)

The Nubian is an African origin and is characterized by short sleek coat, long droopy ears, and a Roman nose. Colors range from red to tan or black, with or without white. The Nubian breed is one of the best for high butterfat milk production. The average mature doe weighs 130 pounds and up.

Slide 5. (Picture of Nubian doe and five kids)

Quintuplets is a very newsworthy item in human reproduction. Here we have a Nubian doe and her five kids. This event did not get the same attention that the South Dakota quints received. However, the Los Angeles Times thought it would make a good story.

Slide 6. (Picture of rear view of goat)

Goat diarmen are concerned with udders just like the cow dairy-men. Here are a couple of good examples of goat udders.

Slide 7. (Same as Slide 6)

No comment.

Slide 8. (Picture of class of Saanen)

This is a class of Saanen does for a judging contest at a recent Goat Field Day in San Diego County.

Slide 9. (Picture of 4-H'ers inspecting animals)

Youngsters inspecting the animals.

Slide 10. (Picture of class of goats)

More looking and pondering.

Slide 11. (Picture of 4-H boy inspecting goat's foot)

"I've just got to take a closer look at that foot."

Slide 12. (Picture of goat looking at boy)

The goat decides to look the boy over and see if he is up to specifications.

Slide 13. (Picture - Removing goat meat from barbecue pit)

While all the judging was going on, something was happening over in the barbecue pit, and here the pit is opened just before lunch, and we are bringing out the barbecued Chevon - goat meat if you don't like the fancy word.

Slide 14. (Picture of African Pigmy buck)

Special interest: This is an African Pigmy buck goat, weight about 55 pounds, 22 inches high. It is the property of the University of Oregon. They are developing a herd for experimental purposes. It is claimed that these Pigmy goats climb trees. The Laurelwood Farm is collecting semen from him.

Slide 15. (Picture of African Pigmy goat walking)

This is a rather determined young fellow who looks as if he's had about enough, so with that note we'll close.

Thank you.

¹USDA, Milk Goats, Farmers Bulletin No. 920.
Washington, D. C. Revised 1955.

²McNulty, Robert. Your Dairy Goat. 4-H Ag 26, University of California Agricultural Extension Service, 1960, Berkeley, California.

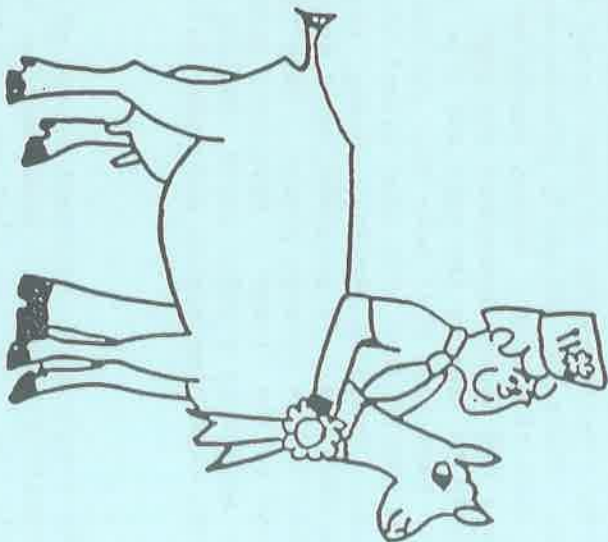
³Weber, Albert E. and Sullivan, Wallace: Milk Goat Production and Production Costs, Los Angeles County, Mimeo L.A. County Agricultural Extension Service 1950.

⁴Mack, Pauline Beery. A Preliminary Nutrition Study of the Value of Goat's Milk in the Diets of Children. American Goat Society Yearbook 1952-53.

4-H

DAIRY GOAT

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 Kenneth R. Farrell, Director of Cooperative Extension, University of California

Reprint-Kern County 9/84

Sergio Garcia
 Sergio Garcia
 4-H Youth Advisor
 Tulare County

10/82
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FITTING

At least 6 weeks prior to show day, you should evaluate your animal and begin preparing her. Animals should be wormed and conditioned. If your doe is too fat, her feed intake should be decreased and she should be exercised more regularly. If she is too thin, she should receive extra feed and supplements. All dairy goats must be dehorned in order to be shown and this should be done far enough in advance of show day so that the wounds have time to heal. Dehorning mature animals is a difficult process and should only be tempted by a veterinarian or experienced dairy goat person. Scurs and unsightly growths should be removed at this time also. Hooves should be kept trimmed every 6-8 weeks throughout the year. Daily brushings help to improve the coat and skin quality while at the same time will make your doe easier to handle. You should work with your animal 10-15 minutes each day. Practice leading, posing, standing and turning your doe. If possible, work her around other animals and in strange places. Have someone watch you and be the "judge". Have this person handle your animal as a judge would, feeling for skin texture, examining hooves and under tail.

GROOMING

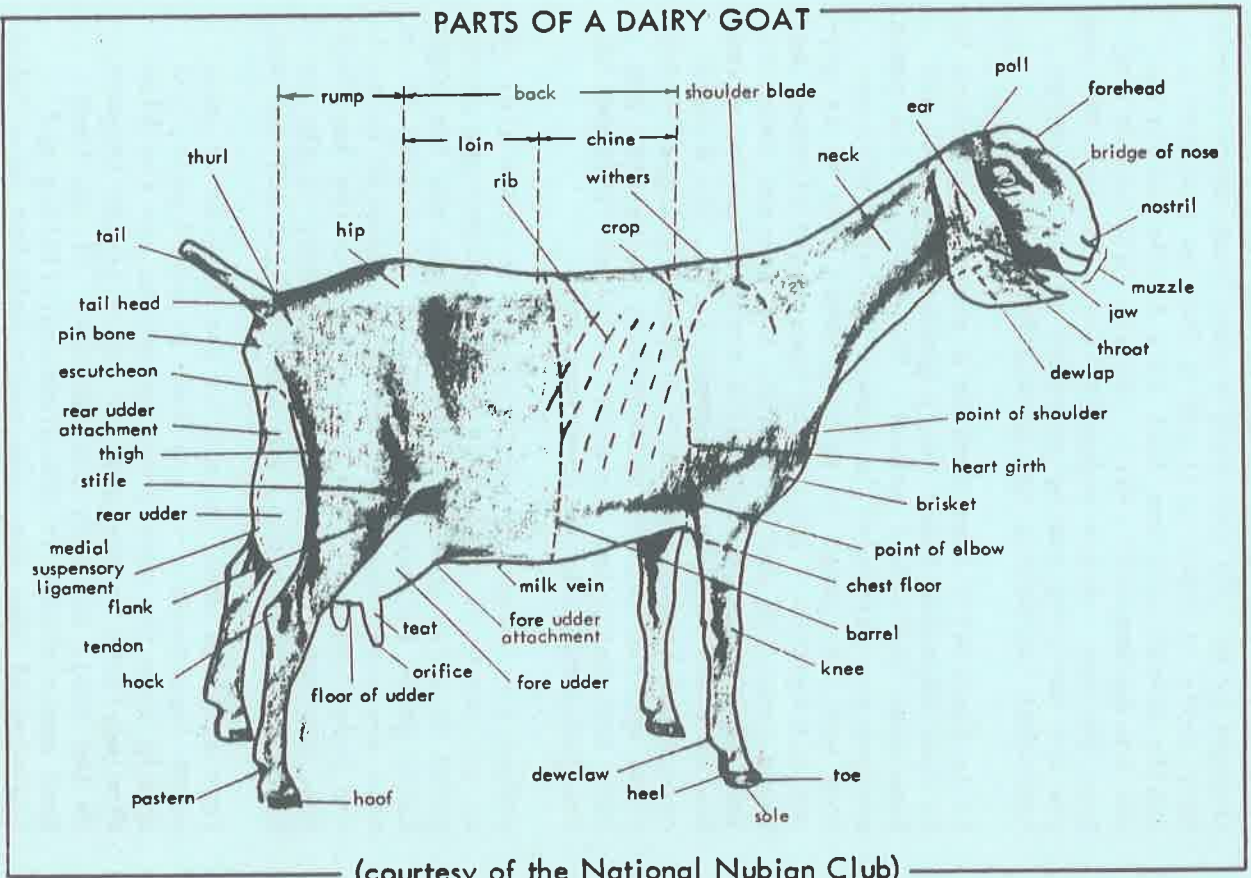
Probably the single most important aspect of a showmanship contest is grooming. Grooming your animal properly lets the judge know that you care how she looks and also reflects the time and efforts you have put into your project. A good grooming job is easy to do. If you have been conscientious in fitting your animal, grooming prior to show day should be relatively simple. Clip the hair on the entire doe going against the lay of hair about 1-2 weeks prior to show day. Experiment with clipping. Some doe's look better with more hair and some look better if they are clipped the day before the show. The first clip of the season usually looks better if allowed

the class. Do not make excuses or try to overlook anything when showing. Each showmanship class should be a learning experience in which valuable information should be gleaned. Be polite and congratulate the winner. A wise exhibitor also realizes that animals and competition change, and just because a doe was champion two weeks ago doesn't mean that she will be or even should be champion today under a different set of circumstances. If the exhibitor has any questions about the placings of his animals the judge should be asked immediately after the class has been judged and before the animals leave the ring. Study classes of showmanship and breed classes and observe the winners. See what makes them win and try to place a class for yourself. It is a wise exhibitor that accepts the judge's opinion, without argument or undue comment, for what it is -- one person's opinion. Keep in mind that the purpose of showing dairy goats is to present to the public the best possible picture of the dairy goat industry and to further acquaint them with its deals and procedures.

ROUND ROBIN

At many of the major fairs and livestock exhibitions, goats are included in a Round Robin Showmanship Contest. This is where the winners of each species of livestock compete against each other to see who is the best showman of the fair. Be prepared to comment in this event. Even if you don't think you have a chance of winning showmanship, it can't hurt to be ready when the time comes. Watch showmanship classes in the other species. Read literature. 4-H Project books are available from your Extension office. Practice showing other kinds of animals. **BE PREPARED!**

PARTS OF A DAIRY GOAT



(courtesy of the National Nubian Club)

to grow a short new coat by show time. Saanens and light colored doe's should be clipped using a plucking blade which leaves about $\frac{1}{4}$ inch of hair. Light skinned does are easily sunburned and do not show well when they are skin clipped. The legs, head, belly, udder, ears and tail should be clipped with a close or fine blade about 1-2 days prior to the show. In clipping the tail, it is customary to cut the hairs off square about one inch past the end of the tail. A brush is then left by not clipping any more hairs at the end of the tail, but trimming the tail down from the point where the hair begins on the underside to the base. Take your time clipping the doe you will use for showmanship. Clip her first, before you do any other goats, so that nothing happens to jeopardize your chances of a first-rate trim job. Clippers have a habit of breaking down, or getting dull at the worst possible moment. Also, you will be more patient and relaxed. Give yourself plenty of time to clip your showmanship doe. Rushed or hurried clip jobs can be easily detected. Attention to detail is the name of the game when it comes to clipping. Frequent places where long hair is missed are under the forearm, behind the elbow, between the toes and around the pastern & declaws, around the sides of the udder, the insides of the thighs, the flank area and the place between the ear and eye. Be careful not to nick or bald any spots. After you have clipped your doe, let her "rest" for a day or so and then look at her again to be sure you haven't missed any spots. Wash her after she has been clipped, if weather permits. This will bring out the places where you have missed. It is not recommended that you clip kids before they are 2-3 months old.

They can become sick too easy. You should, however, make an attempt to clip them by trimming the tail, head, ears, belly and legs from the hoof to the knee and hocks.

The day before the show, you should wash your doe with a mild soap (baby shampoo works well) and warm water. Be sure to rinse your doe several times to

get all the soap out as this will leave the hair sticky and flakey. If your doe has coarse skin, using creame rinse on her will help to improve the hair and hide. Use towels to dry her quickly and prevent from getting chilled. If you plan to use a coat conditioner, apply it after she has dried so it will have time to soak in before showtime. Avoid using heavy oil or greasy coat conditioners. If your doe has been brushed and she is clean, no additional polish should be necessary. You may blanket her or dress her in an old T-shirt to keep her clean. Return her to a well bedded, clean stall.

It is easiest to trim your goat's hooves after she has been bathed as the water makes them softer. Beginners should practice trimming hooves long before show day. Even if a good hoof trimming program has been followed, hooves still should be trimmed flat the day before the show. Some people prefer to use a well sharpened pocket knife, but the safest and simplest method is to use a hoof trimmer or pruning shears followed by a file or rasp. The finished hoof should be completely flat and level from heel to toe. Older does may need to have their declaws trimmed if they become so long that they curl. Use extreme caution when doing this as it is very easy to cause an animal to become lame by cutting too much declaw off. Have your leader or Jr. leader help you trim your goats hooves the first few times.

Clean cut the accumulated filth and grime from the ears and under the tail area the night before the show. Use alcohol in the ears and a warm soapy sponge under the tail. A light application of mineral or baby oil will keep the tail area clean until morning.

About 45 minutes to 1 hour before showtime, you should begin to prepare your animal. Feed her some hay and grain and brush her coat briskly. Wipe her down with a damp rag to remove dust. Don't overlook her belly. If your doe is in milk, do not milk her the morning of showday. Does show best with about 15

sanctioned show, you will be required to exchange animals for a time and show another exhibitors goat. This is for the judge to see if you really are a good showman or if you just have a goat that shows itself. Many times, a judge will pit a showman that has a docile animal with one that is a little unruly to see how he/she will react. Remain calm and do the best you can. Avoid undue fussing. Examine the goat you are handling and be prepared to let the judge know what its faults and good points are.

It is especially important in a showmanship class to be knowledgeable about dairy goats in general and know your individual animal. The parts of the goats anatomy are essential to know. How else will you know what the judge is talking about when he is giving his reasons. You should know the difference between gestation and lactation, the average temperature of a goat, how much milk the average doe gives, how many kids are in the normal birth, the 6 major recognized breeds and their origins, disqualifications and faults, the showmanship, dairy goat and buck scorecards and any other pertinent information the judge may ask you questions on.

Judges use these type of questions to break ties and to see how much you really know about and are interested in dairy goats. Read as much as you can about dairy goats and ask your leader or Jr. leader if you have any questions. You should be prepared to tell the judge when your doe was born, when she last kidded, how many times she has been fresh, if she is bred, when she is due, and who her sire and dam are.

Your attitude when you are in the ring is of paramount importance. If you have prepared well, you should have the confidence needed to win the blue. Winning first is the goal of every single showman in the ring, but only one can win. If you have been conscientious in the grooming, fitting and training of your doe, you can't help but be a "winner". The job of the judge is a difficult one. Try not to blame him when you are not at the top

Always stay on the outside of the animal on this maneuver if the judge is behind you. Slowly walk the doe down, waiting for the other exhibitor if his doe balks. Turn your doe's head toward you and walk back through the line making a U-turn to get into position. Set the legs closest to the judge up first. If the judge is standing behind you, set up the hind legs. If the judge is standing in front of you, set up the hind legs.

When changing places in the line-up, walk down the front of the line, through the new position, turn, and lead up into the new position. Allow room for other exhibitors to move in, and always leave a space for the one judge to pass. If you don't understand a command from the judge, or if it is not clear to you how to do something, don't be afraid to ask. If your doe moves badly out of position, walk her forward, turn, walk her back through the line, turn and walk up into position.

You can cover up many faults on your animal by using good showmanship techniques. There are not "tricks" but just help to show your doe to her best advantage -- and that is what showmanship is all about. If your doe is weak in the chine, tickle her under the belly and don't stretch her out so far. NEVER lay your hand on top of your does back. If you must do something with your left hand, scratch your doe on the forearm to calm her. If your doe is steep in the rump, pinch the vertebrae just ahead of the hip bone and stretch her out a bit further. Pressing down on the loin while the judge is examining the udder improves a weak fore attachment. Naturalness and inconspicuousness are important for the handler to try to attain, no matter how hard he is really working to show his animal. Practice, practice and practice some more. You can't take an animal in the ring that has not been handled and expect to win. Handling means practicing showmanship and not just playing with your goat.

If the show you are attending is an Official ADGA

hours of milk in their udder. If you are showing kids who are nursing off your showmanship doe, be sure and pen them separately the night before. Save some milk from prior milkings to reheat and feed to them on the morning of the show. Scrub the hooves and remove all manure, especially between the toes. You will find the hooves are much easier to clean if they have been trimmed properly. Some judges prefer that you don't use shoe polish on the hooves. If you have cleaned them well, none should be necessary. Scrub the hocks and knees and spot clean any soiled spots on the body. Hair spray will quickly remove manure stains from light colored animals as will water with a little bluing or bleach added. Be sure to rinse thoroughly. Wipe out the ears and under the tail once again and clean out the nostrils and teeth. If your doe is in milk, wash her udder well and apply a light oil such as baby oil or a commercial udder cream. Wait a few minutes, then wipe off with a clean, dry towel. Be sure that the udder is not greasy.

Bulky plastic chains, nylon webbing collars and large barn numbers or bells are fine for at home use, but have no place in the showring. A proper length, small link chain presents a much better picture. It is also easier to handle your doe with a chain and you have more control. Work with a chain before showday to get the animal used to the feel of it around her neck. If she is ticklish and has a tendency to choke, tie her up for a minutes each day. Also, check the chain to see if it is not too tight. If this doesn't work, you can show her in a slender, neatly polished leather strap.

After all this preparation, it would be decidedly shortsighted to go into the ring with dirty clothes and hands and scuffed up shoes. Change into your whites just before show time, after your doe has been prepared or wear protective clothing such as overalls, over your uniform. Make sure your hair is neat and tied back out of the way. Use of a tie clasp will prevent your tie from being chewed on by your doe or

the one next to you. Matching belt and shoes are a nice touch.

A light application of fly spray may be used before entering the ring if insects are a problem. Use it far enough in advance to be dry when you enter the ring. You are now ready to enter your showmanship contest! Be ready and on time when your class is called. Remember, you are trying to present the best possible picture of the dairy goat to spectators at the show. Many of them will be watching a goat show for the first time, and they probably have a pretty poor image of the goat in their minds. It is up to you to do your best to banish these fancies from their minds. Proper grooming is not only essential in a showmanship contest but gives you an edge in the conformation classes as well. A well-groomed, healthy, clean animal cannot help but look better and she feels better too!

SHOWMANSHIP

Walk in a clock-wise direction when entering the ring. Walk SLOWLY and gracefully and be aware of the judge and your doe's position at all times. Do not crowd the exhibitor ahead of you. Leave about 2 ft. between the animal ahead of you and your doe's head. Always lead your animal walking forwards. NEVER WALK BACKWARDS. Stay on the side opposite the judge. When it is necessary to change sides to keep your animal between you and the judge, cross in front of your doe. NEVER WALK BEHIND, OVER OR UNDER YOUR DOE. This maneuver should be done as smooth as possible, neither too fast or too slow. Keep the collar held high under the doe's chin. Don't let the chain fall down around her neck. A pleasant smile lets the judge know that you are enjoying what you are doing. However, a silly smirk or an unnatural forced smile is not desirable. Avoid staring at the judge.

Whenever you come to a stop in the ring, even if it is just for a few minutes, set your doe up. Practice

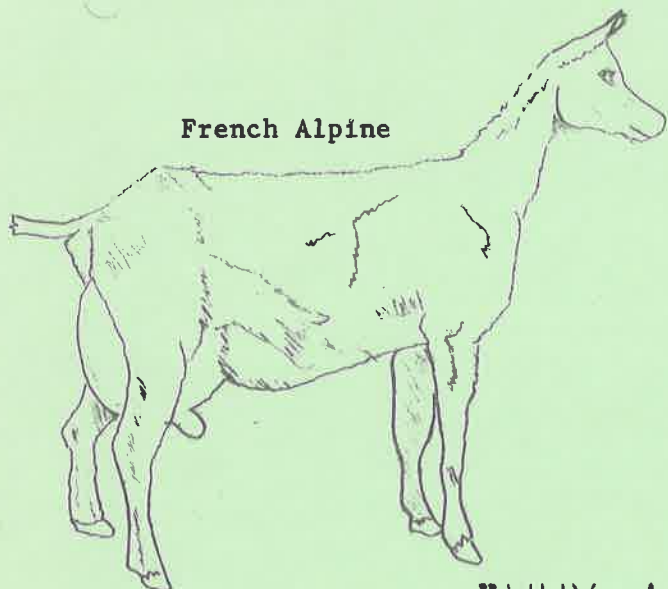
setting her up, so you can do it quickly. Dairy goats should be posed with the front feet set squarely under them, perhaps spread just a little apart to accentuate width of chest floor. Grasp the leg with your hand and place it perpendicular to the shoulder. Lean into the collar to force the doe to put weight on the leg. When setting the far leg, always reach over the doe, NEVER REACH UNDER OR AROUND. The hind feet should be stretched slightly to the rear to accentuate length of body and make the rump appear more nearly level. The hind legs should be slightly spread apart. On milking does, do not spread the hind legs apart so much that you can see daylight between the udder and thigh. This makes the attachments appear weak. For more control and less kicking when the hind leg is being moved, grasp just above the hock, with some pressure put on the tendon at that point. If the doe moves badly out of position, lead her forward, turn her, then bring her back up to the position that she was in. Avoid shoving, pushing or reprimanding your doe. Slapping or yelling are serious offenses.

As soon as you set your doe up, crouch down beside her head. Do not kneel or touch your knees to the ground. If you are in a lineup, side-by-side, remain towards the head of your animal so when the judge looks down the line, he gets a clear view of animals, not people. If the judge approaches you ask to a question or give a command, stand.

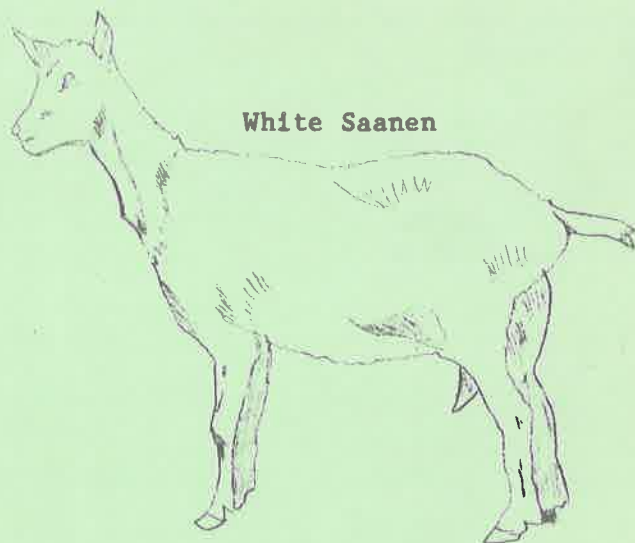
Each judge will have his/her own methods for working the class. Maneuvers and exercises executed are a means of judging how well you and your goat work as a team and are helpful to evaluate how smooth and polished a showman you are. Everything done in a showmanship contest helps to prepare you to show your animals to their best advantage in conformation classes.

If the judge asks you, along with another exhibitor, to walk your two animals down and bring them back, stay as close to the other exhibitor as possible. The judge is trying to compare the two animals.

French Alpine



White Saanen



"WHY A DAIRY GOAT?"

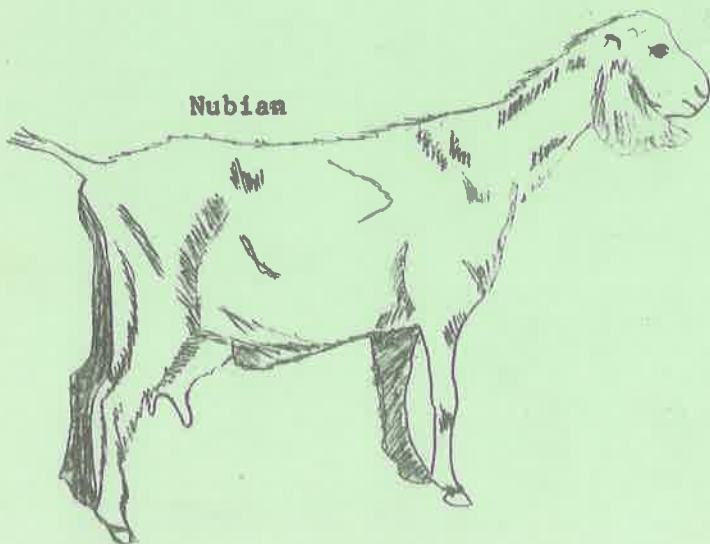
4-H DAIRY GOAT PROJECT

"TRY IT, YOU'LL LIKE IT"



Toggenburg

Nubian



La Mancha



4-H DAIRY GOAT PROJECT



Requirements for Enrollment

You must either own a dairy goat, or plan to obtain one sometime during the current project year. You do not have to sell your animal at auction, nor have more than one goat.

What You will Need

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
1 dog-type choke chain	\$1.30	Used in showing goat.
*1 leather collar	\$2.00	Goat to wear every day.
*Metal stake & cotton rope	\$0.00	To stake goat out with.
2 stiff brushes	\$2.25	For grooming goat. Available in grocery stores.
1 sharp knife <u>or</u> small clippers	\$2.25	For trimming hooves. Clippers available in saddle shops
*1 tub <u>or</u> <u>bucket</u> for water	\$3.25	Plastic buckets .55¢. Old sinks, bath tubs work, too.
<u>1 tub</u> , bucket, or box for grain	\$0.57	Plastic tubs are best.
*Box or manger for hay	\$0.00	Peach box works well.
*3-32 oz. Coke bottles	\$0.57	For feeding milk to kids. 1 bottle used each feeding 3 times daily.
3 lamb-sized rubber nipples	\$1.80	For use in feeding kids from bottles. Available at feed stores.
1 large aluminum pail	\$3.50	For milking mature goat.
*1 bottle liquid dish-washing soap	\$0.65	For cleaning milking and feeding utensils.
1 bottle disinfectant	\$0.79	For cleaning milking and other utensils.
1 bottle Kaopectate	\$1.25	For use in treating mild scours in kids. May also use a scour remedy.

NOTE: Items accompanied by * can be made or available at home. When 2 or more items are listed on same line, only item underlined is priced.

TOTAL COST OF ITEMS - \$27.68

Items listed are in amounts for 1 goat.

These items need not be bought all at once; especially if you are raising a kid.

4-H DAIRY GOAT PROJECT

Feeding Your Goat

<u>Feed</u>	<u>Cost</u>	<u>Comments</u>
Milk Replacer	\$5.25 -- 25 lbs.	Powdered milk formula for feeding young kids. Calf milk replacer is fine for goats by modifying feeding instructions. One 25 lb. bag will raise 2 kids until 6 weeks of age. Available at feed stores.
Alfalfa Hay	\$2.50 -- 1 bale	Fed to all goats of any age. A kid fed a grain also, will eat about one bale every two weeks. A mature goat will eat more, especially when in milk. Goats are fed hay morning & night. Available from local farmers.
Dairy Goat Chow	\$5.25 -- 25 lbs.	This is fed along with alfalfa & you don't have to feed another grain with it. Contains just about all needed supplements. Available at feed stores.
Mineral Blocks	\$.85 -- 50 lbs.	Goat should have salt or minerals before her at all times. Mineral blocks are best and last a lifetime. Available at feed stores.
<u>Grains As Substitute for Goat Chow</u>		
Omolene	\$3.25 -- 50 lbs.	Mixture that contains corn, oats, barley and molasses. A 50 lb. bag will feed a goat for almost 3 months. Fed with hay, will give goat a sleek coat, but tends to be too rich for young kids. A horse chow, it is available at feed stores.
Almond Hulls	\$10.00 -- per ton	Excellent grain for all age goats. Fed with hay, it reduces amount of hay you must feed. Good for growing kids, especially when mixed with a sprinkling of Omolene. One ton will feed a goat for over a year. Available at local almond hullers, and should buy it in early fall.

4-H DAIRY GOAT PROJECT

Feeding Your Goat

SUMMARY

You should feed milk replacer if you are raising a kid, alfalfa hay in all cases, and mineral blocks in all cases. You may feed as a grain either goat chow, almond hulls, or Omolene.

The average cost of feed while raising a kid until 15 months of age or maturity using a milk replacer, alfalfa hay, a mineral block, and one of the three grains is \$135.85.

Housing Your Goat

You need very little space for your goat. A small shed that protects her from wind and rain is all you need. A shed 8' x 4" will house 2 goats comfortably. A pen is really not necessary if you let your goat out for exercise or stake her out every day. A pen can be as small as 10' x 20" but should be as large as possible. The fence should be strong, turkey or chicken wire is best, and should be about 4 feet high. A goat shed can be made almost out of anything and plans for building one are available. If you have scrap materials you can build a shed and pen for almost nothing. The average cost of building a shed and pen at the dimensions mentioned with a few extra materials and shopping at flea markets and auctions comes to about \$40.00 or under according to the available materials that you have. You may not need to build anything if you already have cows, sheep, or horses.

Your Dairy Goat Project Summary

Now that you have prepared to get a goat or goats, you can also be prepared for the price of a goat. You can often buy a grade dairy goat at local goat dairies and farms for \$15.00 as a kid, while mature grade doe will cost more, especially if they are good milk producers. Though a grade is not a purebred, it can still be recorded in the American Dairy Goat Association and you may still show it in grade classes and in showmanship or recorded goat classes. Many grades become state milking champions. However, grade bucks cannot be shown except in butcher goat classes. You can breed your grade doe and her daughters until her granddaughters can be registered as American-bred goats which are almost as good as purebreds.

A purebred dairy goat will run from \$30.00 to \$100.00 as either a kid or mature goat. You never have to worry about your goat being eligible for a class this way! Breeding your goat will give you a big profit in selling her purebred kids.

****If you need help in paying for a dairy goat contact your local bank about a 4-H project loan. They will help you pay for your goat and set up a repayment schedule that is convenient for you!

4-H DAIRY GOAT PROJECT

Total Cost of Raising One Dairy Goat for 15 Months

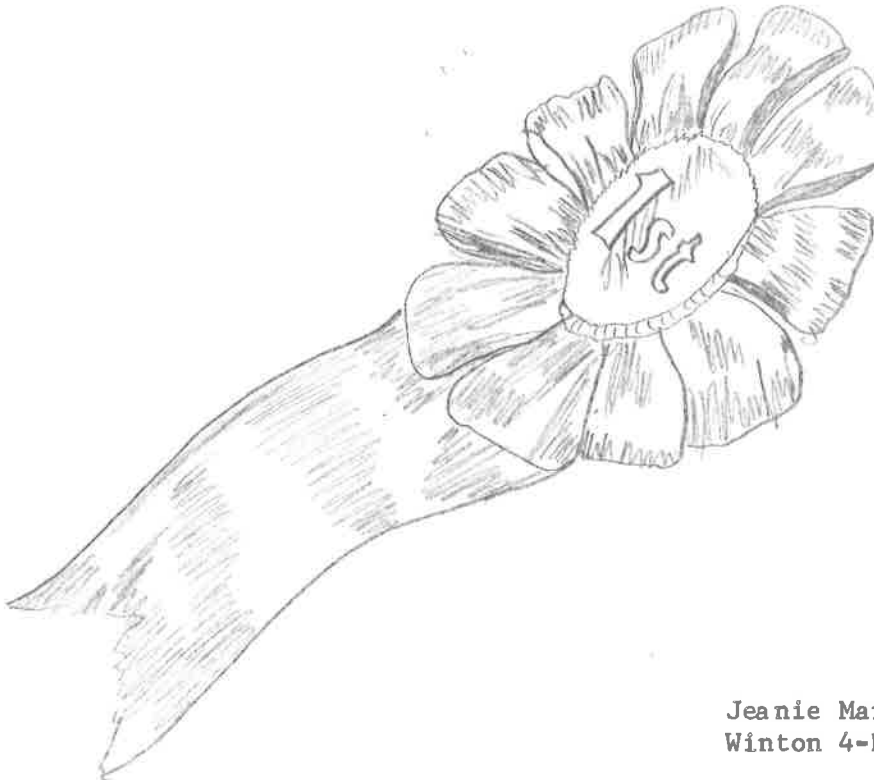
\$ 27.68	--	Needed Items
\$135.85	--	Feed
\$ 40.00	--	Shed & Pen
<u>\$ 15.00</u>	--	Grade Dairy Goat*
\$218.53	--	Total Cost

*If you bought a purebred dairy goat at the price of \$75.00 instead of a grade goat the total cost would then be:

\$278.53

Buying Your Goat

If you are not sure whether or not you will want to take the dairy goat project indepth, you would be wise to invest in a grade goat. There are several different breeds of goats available -- the Alpine, Saanen, Nubian, LaMancha and Toggenburg. We have a complete directory of dairy goat owners, breeders, farms, and dairies that you may want to purchase a goat from. In this project you will learn how to choose the right goat, how to care for the kid and the adult goat, how to manage your money correctly, how to make a profit in goats, and dairy goat knowledge and skills in general. Whether your goat is for show, or just a pet, you will find that there is much pleasure in owning such a witty, intelligent, and playful animal.



Jeanie Martin, 4-H Club Member
Winton 4-H Club - Merced County



**YOUR
DAIRY
GOAT**



AGRICULTURAL EXTENSION

UNIVERSITY OF CALIFORNIA

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The committee is greatly indebted to Mr. Wesley Nordfeldt, Laurelwood Acres Goat Farm, Chatsworth, California, for providing the facilities of his farm for photographs, and also for the valuable suggestions he made concerning the manuscript.

The Modern Dairy Goat

The modern dairy goat produces milk of the highest quality, if you give her the right care. She needs a good home, clean, high quality feed, and should be milked properly. With proper care, goats do not smell bad. If you keep them clean, the only odor will be that of the buck. This odor is normally present during the breeding season only.

The milk has a pleasant flavor if you handle it properly. It contains smaller drops

of butterfat than cow's milk; it is more like homogenized milk. Goat's milk is easier to digest and is often used for infants and invalids. The milk may be processed to produce tasty cheeses, butter, and high quality ice cream.

Milk is not the only product of goats. Goat meat, "chevon," which is primarily from milk-fed young goats, is highly tasty when barbecued.

USE THE RIGHT TERMS

- **KID**—Young goat under six months of age
- **DOE**—Female goat
- **BUCK**—Male goat
- **KIDDING**—Giving birth to young
- **SIRE**—Father
- **DAM**—Mother
- **PUREBRED**—An animal whose sire and dam are registered with the registry association
- **REGISTERED**—A purebred which is itself recorded with the registry association
- **GRADE**—An animal with one purebred parent and the other a Grade or Scrub
- **SCRUB**—An animal of unknown or unimproved ancestry
- **UDDER**—The mammary or milk-producing glands of the female
- **COLOSTRUM**—The first milk produced by the dam after giving birth
- **LACTATION PERIOD**—The time during which milk is produced
- **GESTATION PERIOD**—The time during which the doe carries her young

THE FIRST STEPS

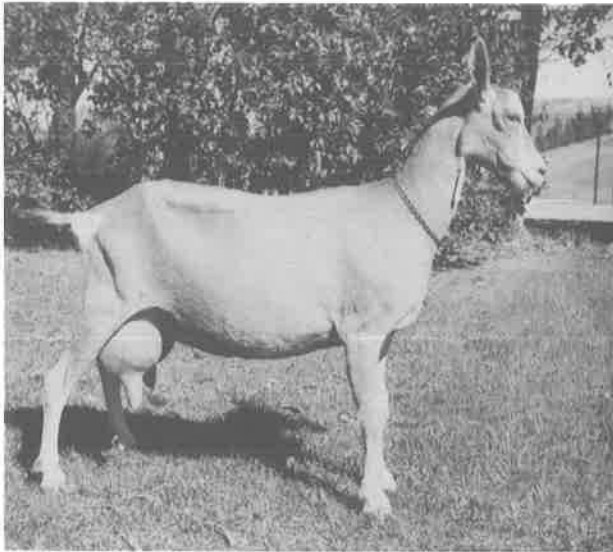
CHOOSE THE BREED

You might choose from the four breeds important in the United States; they are the Saanen, Nubian, Toggenberg, and French Alpine. Your choice will depend on the breed you like, the cost, and availability of the breed. Find out what is the future market for goats in your community. This will influence your choice too. If you don't know, check with your leader and your farm advisor.

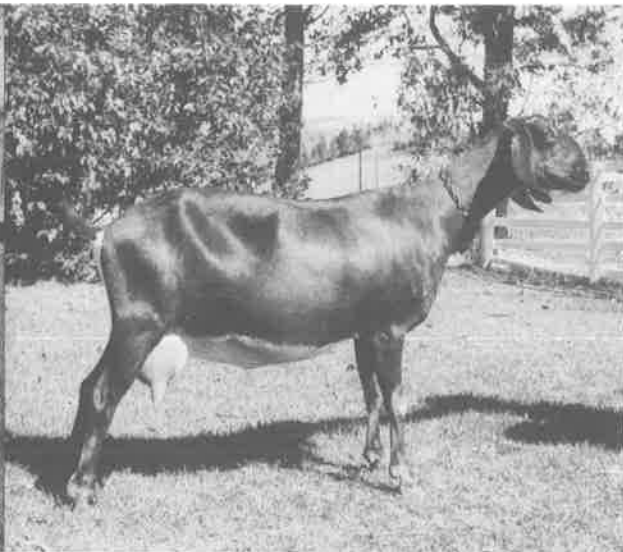
The Saanen is a white or slightly cream-colored goat of Swiss origin. It produces the greatest quantity of milk. The mature doe weighs about 135 pounds and up.

The Toggenberg is a Swiss breed. It is brown with a light stripe down each side of the face. The legs are white below the knees and there is a white triangle on either side of the tail. The Toggenberg, referred to as the "Guernsey" of the goat family, produces rich milk in quantity. The size of the mature doe is 115 to 150 pounds.

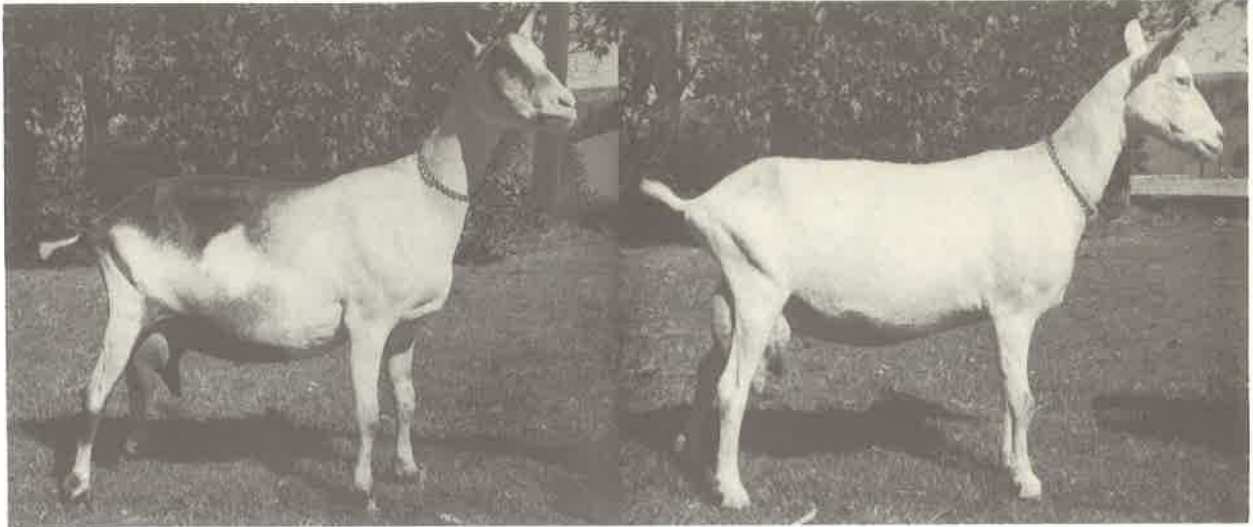
The Nubian is of African origin, and is characterized by a short, sleek coat, long drooping ears, and a Roman nose. Colors range from red to tan or black, with or without white. The Nubian breed is one of the best for high butterfat milk production. The average mature doe weighs 130 pounds and up.



The Toggenberg



The Nubian



The French Alpine

The Saanen

The French Alpine is a French breed. The colors vary from white, gray, brown, black, to red, and show shadings and combinations of these colors on the same animal. Its outline is angular. Like the Toggenberg, it produces rich milk in quantity. The average doe should weigh not less than 125 pounds.

SHOULD YOUR GOAT BE REGISTERED?

If you raise your goat for milk, the answer is no. However, if you plan to exhibit your goat at a fair or show, the answer is yes.

HOW TO CHOOSE YOUR GOAT

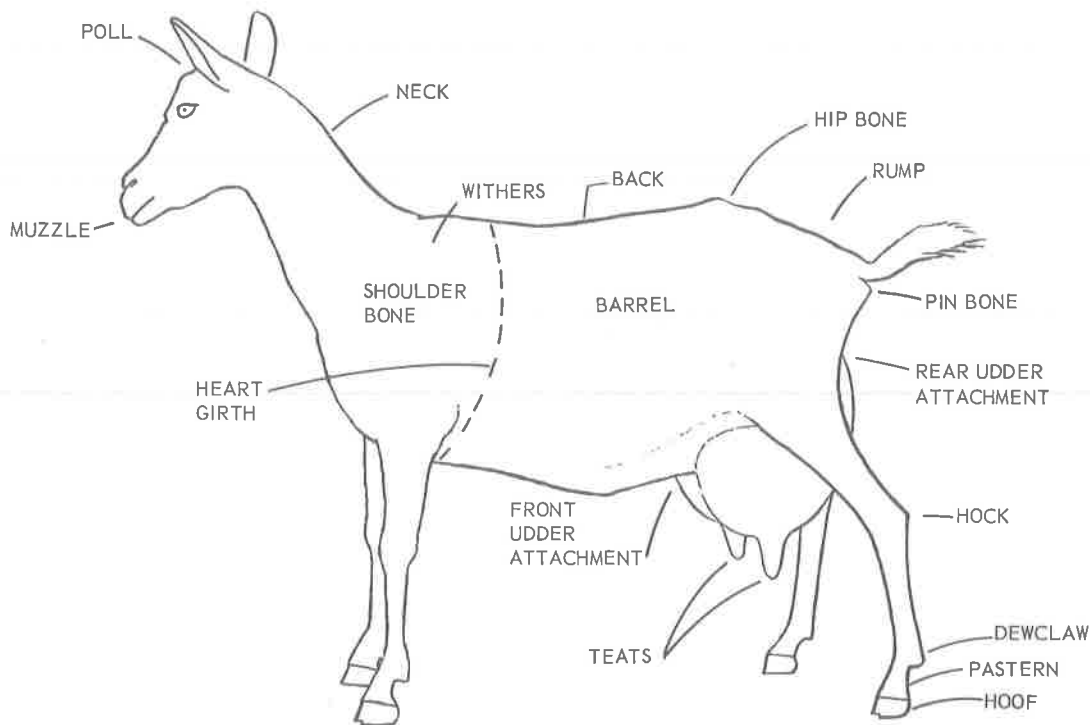
When you buy your goat, consider (1) a record of its production, (2) production of its ancestors, and (3) physical appearance of the animal.

When buying an aged goat be sure to ask for a record of the animal's milk production and production of its offspring. If the goat is young and has not yet produced milk, ask for the records of the dam. A

good producing doe averages 1,800 pounds of milk in a 10-month lactation period (the time when milk is produced). This is equal to 3 quarts per day. However, the daily production varies a great deal during this period.

Because goats are dairy animals, they must have dairy characteristics. Check to see that the doe has a feminine head, thin neck, sharp withers, well-defined spine or backbone and hips, thin thighs, and rather fine bones. The skin should be thin and fine over the ribs. Look for a wide spring of rib and roomy barrel. This will help you to know how much feed she can eat. The constitution, or physical nature, is an important item shown by the depth and width of the chest. It's important to look at the udder, too. It should be large when full of milk and very much smaller when empty. A large udder does not always mean a high milk yield.

If you find there is a great demand for buck service in your community, or if you have a large number of does, a buck may be a good buy. If not, *do not* buy a buck.



HOUSING

You don't need an elaborate barn or house for your goat. Some type of small shed, about 4 x 6 feet, will make a suitable home. It should protect her against drafts, rain, and cold weather. Part of it may be closed off to store feed and equipment.

Give your goat plenty of room to move around freely. An exercise yard is also a must. It should be about 200 square feet. The yard may be fenced with either woven wire or boards and should be between 48 and 54 inches high.

Teach your goat to respect the fence while she is still young. Use a gate when you take her in and out. Don't lift her over the fence when she is a kid or she will soon learn that she need only jump over the fence when she wants to go out. If your goat insists on jumping out, put a wire over a small pen.

Keep her there until she learns that it is impossible to jump over the fence.

Have a dirt floor for the shed and exercise area, rather than wood or concrete. Keep it clean at all times.

EQUIPMENT

You will need a brush, pan, cloth for washing, and a milk pail. It is a good idea to have a milk platform, but it isn't absolutely necessary. Build the platform and place it so you can clean it thoroughly. Have a place to milk that is separate from the living quarters. This is not necessary, but it helps keep the milk sanitary.

Brush the goat and wash the udder before milking. After milking, be careful to guard the quality of milk. All milking utensils and storage containers should be thoroughly scrubbed and sanitized. Dirty equipment can easily ruin the milk.

FEEDING YOUR GOAT

When you have chosen your doe and provided her with good housing and yard facilities, your job has just begun. She needs the right kind of feeding to make her a top milk producer.

Give your kid a good start. She needs at least two feedings of her mother's milk, colostrum. It provides vitamin A and helps prevent disease. This first thick, yellow milk is not suitable for humans.

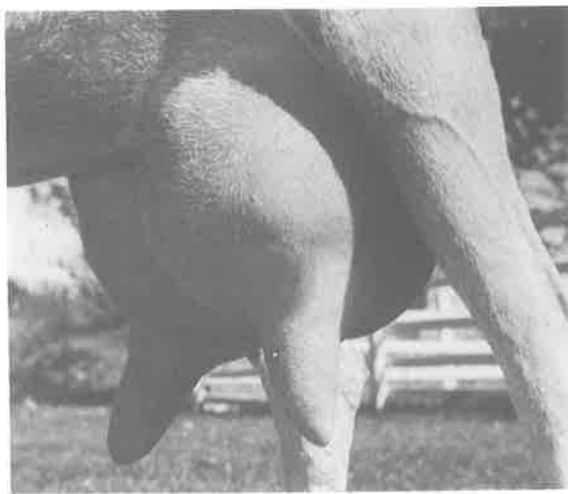
You can let her nurse her dam at birth or feed her by pan or bottle. Or you can let her nurse for three days, then hand feed her. Pan feeding is easier than bottle feeding; but a kid is less likely to gulp milk with bottles and it is easier to keep the milk at the proper temperature. Soft-drink bottles with nipples are satisfactory for feeding kids. But whatever method you use, all utensils must be thoroughly clean. Wash and scald utensils after each feeding. All milk must be warmed to about 100° F; the kid will not drink it cold.



Undesirable udder, teats too large



Poorly formed teats



Good udder

CHANGE FEED SLOWLY

Whole goat milk is the best feed for kids. Dry skim milk from goats or cows can be used instead; remember that with kids all feeding changes should be gradual. Mix dry skim milk and water to give the same milk solids as natural skim milk.

You can substitute a high protein calf starter for part of the milk. Keep the starter and a small amount of high quality alfalfa hay before her all the time. This is a good idea even if she won't eat much starter or grain until she is about 3 weeks

old. If she eats grain and hay well at the end of the eighth week, you can stop milk feeding.

All kids start nibbling leafy hay when they are a few days old. When they are 2 or 3 weeks old they start drinking water by themselves from a pan or pail, even if they are nursed or bottle fed; they also begin to eat leaves from green plants, briars, etc.

You will find your goat likes alfalfa hay; she probably won't get tired of it. She will like roots and silage too.

PASTURE FEEDING

Pasturing is the ideal way to feed your goat, but keep in mind that irrigated pasture is an excellent breeding ground for worms, flukes, and other parasites. Goats do well both on alfalfa pasture and on some of the native grasses. Because a goat enjoys variety, provide your goat with as large a pasture as possible. Always check to be sure her feed and drink are clean. She will do her best when you provide clean feed, drink, and pasture.

FEEDING GUIDE

AGE	FEED	AMOUNT EACH DAY
Birth to 3 days	Colostrum	All the kid wants
3 days to 3 weeks	Whole milk (cow or goat) Water, salt	2 to 3 pints All the kid wants
3 weeks to 4 months	Whole milk Creep feed (1) Alfalfa hay (2) Water, salt	2 to 3 pints, up to 8 weeks All the kid will eat, up to 1 pound per day All the kid will eat All the kid wants
4 months to freshening	Grain mixture (3b) Alfalfa hay or pasture (2) Water, salt	Up to 1 pound of high protein feed All the doe will eat All the doe wants
Dry pregnant	Grain mixture (3b) Alfalfa hay or pasture (2)	Up to 1 pound mix for a dry animal All the doe will eat
Milking doe	Grain mixture (3a) Alfalfa hay (2) Water, salt	Minimum of 1 pound up to 2 quarts of milk per day. Add 1 pound grain mixture for each additional 2 quarts of milk. All the doe will eat All the doe wants

(1) Creep feed may be a commercially mixed milk supplement or calf starter.

(2) Alfalfa hay of extremely high quality, fine stemmed, leafy and green.

(3) Suggested grain mixtures

(a) For a lactating doe

55 pounds barley or oats

15 pounds beet pulp

20 pounds wheat, mixed feed or mill run

10 pounds linseed, cottonseed, or soybean oil meal

(b) For a growing or a dry doe

15 pounds beet pulp

50 pounds barley or oats

15 pounds wheat, mixed feed or mill run

20 pounds linseed, cottonseed, or soybean oil meal

If you use commercial dairy cow or dairy goat feed, use it according to your goat's stage of growth—growing, drying, or lactating.

READY-MIX FEED

You may buy your grain and mix it at home. However, several commercial feed companies produce ready-mix feed. Ready-mixed dairy feeds are fine and may be less expensive, depending upon how much you buy. Have fresh clean water and salt before your goat at all times.

A doe that produces less than 1 quart of milk per day gets all the nutrients she needs from a good quality alfalfa. A doe that

produces more milk needs more than alfalfa. She needs a quart measure of concentrate mixture for each 4 pints of milk produced daily. Give half of the concentrate at the morning milking and the other half at the evening milking.

A pregnant doe should have a dry period of 2 months just before kidding; during this period she should receive all the alfalfa she will eat. Increases or changes in feed should always be gradual. (For method of drying up, refer to page 9.)

YOUR GOAT NEEDS CARE

TRIM HOOFS OFTEN

To ensure your goat's good health, properly trimmed hoofs are a must. Untrimmed or poorly trimmed hoofs can cause serious lameness. The more often you trim them, the less you have to cut off. Check the hoofs once a month. Use either a small hand pruner or a sharp knife whose blade will lock in an open position. Most people prefer to use the sharp knife to get a more level floor on the hoof.

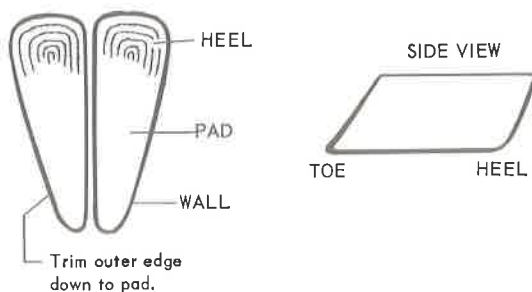
Trim the bottom of the hoof so that it is parallel with the top.

Always cut from heel to toe.

If you trim the hoofs often, you won't need to trim much of the pad, if any. Sometimes

you may have to trim some of the heel in order to get the bottom level.

If some of the pad has to be trimmed, do it in thin slices; stop when the pad turns a pinkish color, as you may draw blood if you go too deep.



The right-handed person stands on the right side of the goat when trimming the front feet. The left-handed person, on the left side. If possible, keep your animal against a fence or wall. This will prevent excessive movement. When working on the opposite hoof, reach across the animal and brace the animal against your body.



Work on one toe at a time. With the first cut remove the outer wall. Then level the heel and pad to make the hoof floor level. It is seldom necessary to remove much of the pad. If it is, take care not to cut too deep as this will draw blood.



When you finish the first toe, begin on the other. Take care to trim both toes so that when the foot is placed on the ground, one toe is not longer than the other.



Note that the well-trimmed hoof does not have an overlapping wall. The hoof floor is level and clean.



This rear hoof is badly in need of trimming.



When trimming the rear hoof, stand to the rear; bring the goat's leg through your legs and brace it against your knee.

The procedure for trimming the rear feet is the same as for the front feet.

HOW TO DEHORN

Some kids are born hornless. If your goat starts to develop horn buds, follow these steps to dehorn the animal. Caustic sticks of soda or potash may be used, but be extremely careful in handling them. They may injure your skin. They may also be harmful to goats that come in contact with the treated animal.

The disbudding iron probably gives the most successful results. It is easier on both you and the kid than other methods. You can purchase a disbudding iron from goat dairy supply firms, or make one if you are handy with tools. It looks like a soldering iron with the tip sawed off. Irons with slightly curved ends are better than irons sawed off with plain ends, but both give good results.

For disbudding, heat the iron so that at least 2 inches are cherry-red. Save time by having two irons heated so that a fresh one is ready for the second horn bud. For small doe kids, a $\frac{7}{8}$ -inch (diameter) iron is large enough. For large does, and especially buck kids, a 1-inch iron is better. Center the iron on the horn buds and apply it with a circular motion and light pressure. Do this for about 5 to 10 seconds or more, depending on the size and development of the horn buds.

When the iron has burned enough, the clean skull will show. It is important that the iron be cherry-red hot. A lower temperature takes a longer time and is more exhausting to the kid. Apply unguentine or carbolated vaseline to each disk immediately after disbudding. To dehorn an adult goat, use either horn scoops or a wire saw.

HOW TO CASTRATE THE BUCK KID

If you have a male goat that will not be used for breeding, castrate him when he is 1 to 14 days old. Do this on a bright, dry day, rather than in a cloudy, chilly, or rainy period. Use a clean, disinfected knife to cut off one-third of the lower part of the scrotum or bag. Then force the testicles out and hold them with a firm grip, pulling them out with the attached cords. This should be done with a steady pull. Cut or crush the cords and treat the wound with some standard disinfectant.

Other methods include the use of the Burdizzo, elastrator, and emasculator. For use of these methods check with your leader or farm advisor.

BREED THE DOE ONCE A YEAR

To maintain milk production over a period of years, it is necessary to breed your doe once a year. Milk goats are good breeders. A mature doe usually has two kids at one time; frequently there are three and sometimes four.

Goats tend to be seasonal breeders. The breeding season is usually from late August through March. The does are generally first bred at 12 to 15 months if they are well grown. During this time the bucks have a strong odor. Except when breeding, keep them in a separate pen at all times.

Does usually remain in heat from 1 to 2 days. The period between heats varies, but is generally from 17 to 21 days. A doe will freshen about 5 months after the day of service (145 to 155 days).

It is good management to have the doe freshen once each year. Allow her a dry period of from 6 to 8 weeks. To dry your doe, switch to dry feed and cut out concentrates. Do not milk her for 7 days. Of course

her udder will fill up. This pressure turns the doe's system away from milk producing and dries her up. At the end of 7 days, milk her out again.

CARE AT KIDDING TIME

Shortly before your doe is due to freshen, clip around her udder, hind-quarters, and tail for greater cleanliness during kidding. Give her a quiet kidding stall and clean bedding. Do not tie the doe. Do not leave cold water where she can drink

it after kidding. Because kids are often born when the doe is standing, don't leave a water bucket where she might drop a kid in it.

A few days before she is due, cut down her grain feeding. Substitute laxative feeds, such as bran or beet pulp. You will know when she is due by these signs: rising tail bone, loose to the touch, with sharp hollows on either side; rapid cud chewing; restlessness and pawing at bedding; low, plaintive bleating; rapidly filling udder, turning pink and shiny just before kidding; and a mucous discharge from the vulva.

WATCH FOR PARASITES

EXTERNAL PARASITES

Be on guard against lice, ticks, domestic flies, screwworms, and fly maggots. These external parasites are harmful to your goat. While you can use sprays (insecticides) to control the spread of these parasites, insecticides will not take the place of good sanitation and management. To prevent the spread of parasites, always inspect your goat right after you buy her.

You can reduce the fly problem with good sanitation. Get rid of the places where maggots develop. Manure, heaps of rotting vegetation, garbage, and other plant materials that collect are ideal places for fly development. Be sure that the area your goat is housed in is kept sanitary.

Insecticides are poisonous, use them with caution. Do not let them come in contact with feed, water, or the containers for feed or water. Wash your hands thoroughly after using an insecticide. If you spill some of the material on your clothing, change it at once and launder it before wearing again. Store insecticides out of reach of children,

livestock or pets. Read and follow directions on the label.

Control—Don't use a spray if your goat is thin, sick, or when the doe is milking. The spray might get into the milk if you use sprays on milking does.

INTERNAL PARASITES

Protect your goat against stomach-worms. They are among the most common internal parasites. They occur in early spring and summer.

Large stomachworms are found in the fourth stomach. They are $\frac{3}{4}$ to $1\frac{1}{2}$ inches long and are twisted, with reddish and whitish bands.

Medium stomachworms are found in the fourth stomach near the small intestine.

Hairworms occur in early spring and summer. The hair lungworm is found in the small bronchial tubes, the air sacs of the lungs, and the lung tissue. They cause the goat to cough frequently. If your goat gets hairworms, consult your veterinarian.

TREATMENTS

(These treatments revised May, 1970.)

	Insecticide	Dip	Spray	Days Between Treatment and Slaughter*	Remarks
TICKS AND LICE	Lindane	0.025%	0.05%	30 days	Repeat treatments after 2 or 3 weeks if needed. Do not use Toxaphene on milk goats. Do not use Lindane on lactating animals. Good for ear ticks using E.C. formulation in mineral oil by aid of rubber-tipped oil can, ½ oz per ear.
	Toxaphene	0.25%	0.5%	28 days	
	Malathion	None	0.5%	None	
	Dichlorvos (DDVP), Vapona®	None	0.25%	None	
	Insecticide	Smear	Spray	Days Between Treatment and Slaughter*	Remarks
SCREWWORMS AND MAGGOTS OF BLOWFLIES	Lindane	EQ335 (3% Lindane)	None	None	Brush or smear directly into and around wound twice first week, then weekly until healed.
	Diphenylamine	Smear 62 (35% Diphenylamine)	None	None	
	Co-Ral®	None	W.P. 0.25%	60 days	Wet entire areas around wound and spray directly into wound thoroughly. Do not use Co-Ral or Ronnel on animals less than 3 months old.
	Ronnel (Korlan®)	Available	E.C. 0.5%	90 days	

* Minimum number of days which should elapse between day of last treatment and time of slaughter.

®Registered trade name.

Control—To aid in preventing worms, keep a mixture of 1 part of phenothiazine and 10 parts salt near the animal. Once a week put out 1 part phenothiazine and 7 parts salt. No preventive treatment has been fully developed.

If your goat gets worms, treat by drenching with phenothiazine—35 to 40 grams for adults; 15 to 20 grams for kids. To drench, you use a dose syringe to make the goat swallow the mixture. Do not do this while the animal is struggling.

Effective treatments for worms are: copper sulfate, carbon tetrachloride, tetrachlorethylene, hexachloroethane, and thia-bendazole (Thibenzole®). Consult your veterinarian for dosages and methods of giving the drug.

There are times, such as during periods of heavy rain, when your goat is more likely to become infested with para-

sites. Some conditions help the parasites to increase rapidly and cause more harm to your goat.

Drenching—Moisture is necessary for worm eggs and larvae to live in pastures. About 3 weeks after a good heavy rain that thoroughly soaks the ground, drench the goat with phenothiazine mixture. This delay is necessary. Your goat will pick up worm larvae in about a week, but mature worms won't develop until 3 weeks later. Effective treatment at this time will destroy the young adult worms before they produce more eggs. If wet conditions continue, it may be necessary to give repeated drenches every 3 to 4 weeks.

When dry conditions cause goats to crowd into selected areas or to overgraze on natural feed, you may have to do more frequent drenching.

When feed is poor, goats will lose condition. They will not tolerate their normal worm burdens as when well fed. Feed value declines in a dry season or when lush feed becomes coarse. A decline in nutrition, shown by a change in thriftiness of the goats, means you can expect to drench more often.

Control with Management—Drenching alone will not control worm infestation. You must also manage stock and pasture well. Rotate grazing and rest the infected pastures. Take better care of your young goats. If they're in good condition, it will help in worm control.

You can keep your goats well fed with extra pastures, fodder chopped for grazing, and supplementary feeding. The amount of time you can rest pastures by grazing them in rotation will vary. This depends on the number of divisions in your pasture, size and age of the flock, the nature of the pasture, and seasonal changes. However, if you use pasture management to control worms, remember that the period from eggs to infective larvae is seldom less than 7 days. (It can be as short as 4 days in hot, wet weather.) Remember that resting a paddock for 3 to 4 weeks usually kills many of the eggs and larvae. Whenever possible, move your goats into clean paddocks after drenching so they will not become re-infested so soon.

GUARD YOUR GOAT AGAINST DISEASE

Some common diseases of goats are mastitis, foot rot, foot abscess, digestive disorders, enterotoxemia, infectious dysentery, scours, joint conditions, sore teats, pink eye, and ringworm.

MASTITIS

Common names for mastitis are inflammation of the udder, blue bag, caked bag, and garget. These are acute or chronic forms of mastitis. Most cases seem to be caused by one of two types of bacteria—staphylococcus (the bacteria causing pimples in man) or streptococcus.

Signs of mastitis in goats are uneasiness, bad smelling udder, and increased temperature.

In the acute type, the udder is painful, smaller, hard, and tense. The watery or bland-stained fluid discharged contains the bacteria causing "strep" throat. The condition is always serious, as it leads to loss of the milk supply and, in the most severe form, death of the goat.

Your goat can catch this disease when teats come in contact with contaminated area, ground, and bedding. Flies, infections, and injuries from mechanical equipment are other causes of the disease.

To decide whether a goat has this disease, a strip cup—palpation—laboratory test is used. The disease can be cured if it is discovered and treated early enough. Treatment consists of using antibiotics and sulfa drugs, as prescribed by your veterinarian.

Sanitation is very important in the prevention and management of mastitis.

- Before milking, wash teats with common antiseptic, such as chlorine solution or other relatively odorless antiseptic.
- Discover the disease early.
- Sterilize teat cup and disinfect hands before and after milking each goat.
- Get rid of anything that may cause injury to the udder.
- Control goatpox in herd.
- Do not feed milk from goats with mastitis to young kids.
- Keep barn floors and pens clean.

FOOT ROT AND FOOT ABSCESS

This disease is caused by an infection that destroys tissue. The germ which causes it thrives in wet, dark places (mud, for example) where there is no air.

The germ enters the tissues of the feet through small cuts or bruises. It multiplies under the skin and in the outer tissue. Other organisms then move into the wound and increase the infection.

Signs of this disease are lameness and often intense pain when the infected part is touched. The pain keeps animals from moving around for food, and as a result they lose weight. The milk production of goats falls off. When goats have the infection in both forefeet, pain is often so great they kneel when eating. A watery fluid oozes from the infected area. The tissues rot away as the disease continues and there is a greyish, cheesy discharge. There is also a foul odor.

To treat foot rot and foot abscess, carefully trim away the rotten part with a sharp knife or pruning shears. Treat the in-

fecting parts with antiseptic, such as a 10 to 30 per cent copper sulfate solution or a 2 to 10 per cent solution of formaldehyde. These washes can eat into the flesh. Examine the wound carefully before each treatment to see that they do not eat into the flesh.

A number of very good ointments especially prepared for treatment of foot rot are available. Sulfathiazole ointment is widely used. The sulfa drugs are also given either by mouth or by injection.

Foot rot and foot abscess of goats can often be prevented by keeping goats in dry pastures and clean, dry barns. Wet or muddy places should be drained. If foot rot gets a start in a herd, follow the treatment by disinfecting the premises; otherwise, animals may become reinfected. As another precaution, clean away broken glass, tin cans, etc. Proper trimming of the feet is important because this organism does not live very long in the soil.

DIGESTIVE DISORDERS

Digestive disorders may be a problem, especially in young kids. When a goat eats large amounts of unsuitable feeds or is forced to eat unsuitable material, these disorders result. Generally, goats are very hardy and are less likely to get such disorders than the other ruminants. (A ruminant is a mammal that chews again what has been chewed slightly and swallowed.) However, great changes in feed may result in digestive disorders.

To treat goats for digestive disorders, divide by 5 the dosage for cattle in a similar stage of development. Suggested drugs for treatment are Epsom salts, nuxvomica, linseed oil, and sodium bicarbonate mineral oil.

ENTEROTOXEMIA

This disease causes many deaths among both young and old goats. It is closely associated with irregular feeding. The animals may or may not develop diarrhea (scours). This disease can be prevented by vaccination as recommended for sheep, as well as by care and management of the diet.

INFECTIOUS DYSENTERY AND SCOURS

Infectious dysentery can cause death in 2 to 4 hours after the goat becomes sick. Symptoms of infectious dysentery are heavy scouring with blood and mucus in the droppings, followed by an acute inflammation of the large bowel. Scouring may have many causes, such as worm infection, irritating weeds and unsuitable feeding, as well as bacteria or virus infections. When the cause is an irritation, soothing remedies are recommended. Such drugs as prepared charcoal, prepared chalk, powdered ginger, and sodium bicarbonate may be used. If the scouring is caused by a bacterial infection, oral (by the mouth) doses of sulfa drugs may be used.

In all cases keep the infected animal away from other animals to prevent the spread of the disease.

JOINT CONDITIONS

Infection of the joints occurs in young goats, mostly from navel infections. This can be prevented by having clean ma-

ternity pens and yards. Another prevention is to paint the navel of the newly born kid with iodine, or to inject antibiotics when the disease first appears.

SORE TEATS

The goat may develop sore and cracked teats as a result of injuries. Antibiotics, sulfa, or zinc ointments may be used. If the condition is not properly cared for, goatpox may develop. Goatpox shows up as blisters surrounded by a reddened area which may rupture and form ulcers where the infection occurs. This infection can be carried from goat to goat on the milker's hands and is also infectious to humans.

PINK EYE

This is an infectious disease that is carried from goat to goat, especially during hot, dry, windy, dusty weather. If a goat gets pink eye, keep him away from other animals. Penicillin, chloromycetin and aureomycin have been found effective. See your veterinarian for dosages.

RING WORM

Ring worm affects not only goats, but also humans. The fungus grows in the skin, causing hair to fall out in round patches. Treat with a solution of glycerine and tincture of iodine once daily. Another method is to scrub the infected area.

DISEASES AFFECTING MAN THROUGH MILK

Many diseases can be spread from goats to man through the milk. A few of the more serious diseases are tuberculosis, brucellosis, leptospirosis, and listeriosis.

TUBERCULOSIS is a chronic infectious disease of mammals. It can be carried to man, but may be prevented by pasteurization of the milk. Refer the problem of diagnosis to the local or state veterinarian.

BRUCELLOSIS is a contagious disease of goats, cattle, and swine. It can be transmitted to man and causes undulant fever or Malta fever. The disease can be carried through contaminated food, milk, and water or from vaginal discharge. It gains entrance through skin wounds, mucous membranes, and mammary glands. The disease can be prevented by proper sanitation and

good management. Take precautions when introducing a new goat to the herd. A blood test by a veterinarian will show whether the disease is present. This test should be given to all animals that are producing milk.

LEPTOSPIROSIS is transmitted from goat to goat or from goat to man through milk. This disease causes high fever in man for 3 to 8 days. Other signs are headaches, vomiting, and pains in muscles and joints, followed by jaundice and kidney complications. It is very serious to both goat and man.

LISTERIOSIS causes abortions and circling disease in goats. This disease can be transmitted from goats to humans as meningitis and glandular fever.

GOOD GROOMING — GOOD SHOWING

APPEARANCE OF YOUR GOAT

- Condition and thriftiness—normal growth, neither too fat nor too thin
- Grooming
 - Hair properly groomed, hide soft and pliable
 - Hoofs trimmed and shaped to enable animal to walk and stand properly
 - Hornless or neatly disbudded

- Clipping
 - Entire body clipped about 3 weeks before show, if weather permits
 - Long hair inside ears trimmed, tail neatly trimmed in a V-shape with a tuft on the end
- Cleanliness
 - Hair clean and, if possible, free from stains
 - Hide and ears free of dirt, legs and feet clean

IN THE RING

Leading—As you enter, lead the goat at normal walk around ring in clockwise direction. Walk on the left side of your animal, next to the head. Hold the lead chain with your right hand. Holding the chain close to animal insures more secure control.

Your goat should lead readily, respond quickly.

Use the right type of lead chain. It should be placed correctly and fit properly. A small link or choke chain is advisable.

Walk backward slowly, face the goat, and hold the lead chain in your left hand as the judge studies your animal. Face forward when leading at all other times.

Lead slowly, with the animal's head held high enough for impressive style, attractive carriage, and graceful walk.

Posing—When you pose and show the goat, always keep it between yourself and the judge.

Stand facing your goat at an angle far enough away to see stance of feet and topline. Pose your goat with the front feet placed squarely under and hind feet slightly spread. If possible, face the goat upgrade with front feet on slight incline.

Don't crowd the exhibitor next to you or leave space enough for another animal when you lead into a side-by-side position. Your goat may be led out of line when

the judge requests that her placing be changed. Many prefer to lead animal forward and around end of line or back through line. Do not lead animal between the judge and an animal he is observing.

Step the goat ahead by a slight pull on the lead strap or collar. Move the animal back by exerting pressure on the shoulder point with thumb and fingers of the right hand, pushing back with collar.

When the judge is observing the animal, let her stand when posed reasonably well. Be natural. Overshowing, undue fussing, and maneuvering are objectionable practices.

Show Your Goat at Its Best—Quickly recognize the conformation faults of the animal you are leading and show her to overcome them. You may be asked to exchange with another and show his or her doe for a short time.

Poise, Alertness, and Attitude—Keep an eye on your goat and be aware of the position of the judge at all times. Do not be distracted by persons and things outside the ring. Show animal at all times and not yourself. Respond quickly to requests from the judge and officials. Be courteous and sportsmanlike at all times. Keep showing until the entire class has been placed and the judge has given his reasons.

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PESTICIDE RESIDUES

These suggestions for pest control are based on the best information currently available for each pesticide listed. If followed carefully, the suggestions should result in satisfactory control and should not leave residues that will exceed the tolerance established for any particular chemical. To avoid excessive residues, follow suggestions carefully with respect to dosage levels, number of applications.



YOUR DAIRY GOAT

The Modern Dairy Goat

The modern dairy goat produces milk of the highest quality, if you give her the right care. She needs a good clean home, high-quality feed, and should be milked properly. With the exception of bucks during breeding season, goats do not have a bad odor.

The milk has a pleasant flavor if you handle it properly. It contains softer drops of butterfat than cow's milk, and is more like homoge-

nized cow's milk than raw cow's milk. Goat's milk is easier to digest than cow's milk and is often drunk by infants and invalids. Goat's milk may be processed to produce tasty cheeses, butter, and high quality ice cream.

Milk is not the only product of goats. Goat meat, "chevon," which is primarily from milk-fed young goats, is highly tasty when barbecued.

Use the Right Terms

- KID – Young goat under six months of age
- DOE – Female goat
- BUCK – Male goat
- KIDDING – Giving birth to young
- SIRE – Father
- DAM – Mother
- PUREBRED – An animal whose sire and dam are registered with the registry association
- AMERICAN – An American is the result of three successive generations of "grading up" by breeding to purebred sires of one breed. Americans can be developed in all breeds
- REGISTERED – A purebred which is itself recorded with the registry association
- GRADE – An animal with one purebred parent and the other a Grade or Scrub
- SCRUB – An animal of unknown or unimproved ancestry
- UDDER – The mammary or milk-producing glands of the female
- COLOSTRUM – The first milk produced by the dam after giving birth
- LACTATION PERIOD – The time during which milk is produced
- GESTATION PERIOD – The time during which the doe carries her young

Division of Agricultural Sciences
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The First Steps

CHOOSE THE BREED

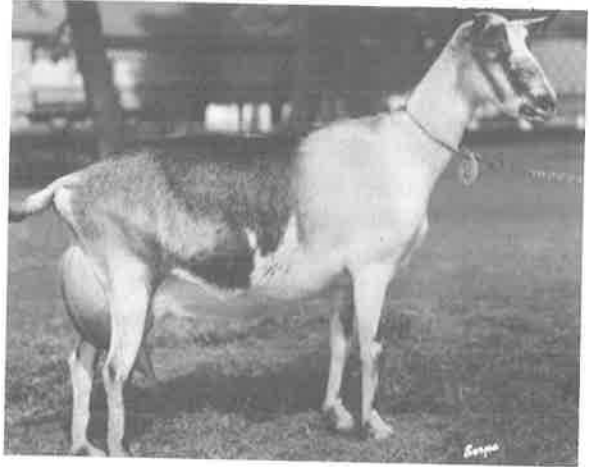
You might choose from the five breeds important in the United States: the Alpine, La Mancha, Nubian, Saanen, and Toggenburg. Your choice will depend on the breed you

The Alpine originated in the French Alps and is a large, rangy, yet deerlike animal. The ears are upright; the color may vary from white, gray, brown, black, to red and show shadings and combinations of these colors on the same animal. The minimum height for a mature doe is 30 inches and the minimum weight 135 pounds.

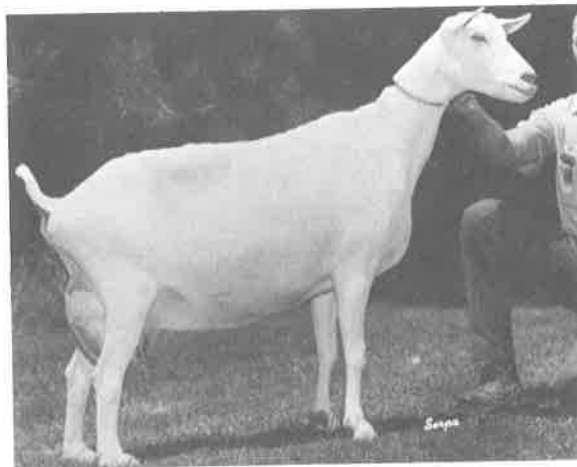
The La Mancha is a breed developed recently in this country from a short-eared Spanish breed crossed with the leading purebred breeds. They may be any color but are distinguished by their external ears which are either absent or very short. The minimum height for a mature doe is 28 inches and the minimum weight 130 pounds.

The Nubian is large and has a proud and graceful appearance. This breed was developed in England by crossing animals from India and Egypt with British dairy goats. Distinguishing features are long, wide, pendulous ears and the convex roman nose. They may be any color or colors, solid or patterned. The minimum height for a mature doe is 30 inches and the minimum weight 135 pounds.

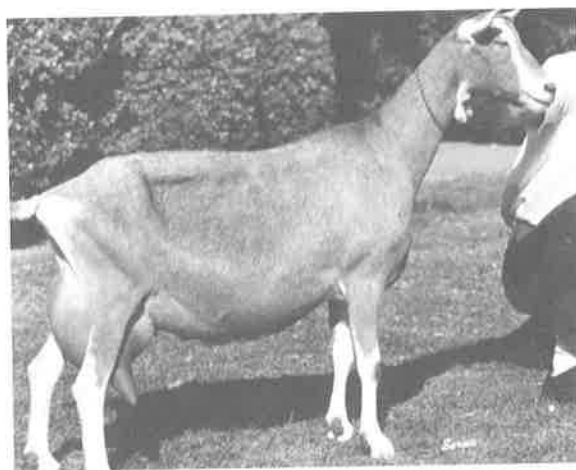
like, the cost, and availability of the breed. You should consider the availability of bucks for breeding in your area, as well as the future market for dairy goats in your community. Check with your leader or farm advisor for recommendations.



The **Saanen** is a white or slightly cream colored goat of Swiss origin. She is medium to large in size with rugged bone and plenty of vigor. The ears are upright and the preferred color is white. The minimum height for a mature doe is 30 inches and the minimum weight is 135 pounds.



The **Toggenburg** is of medium size, sturdy and vigorous, and is of Swiss origin. The color is solid varying from light fawn to dark chocolate with distinct white markings. Although the shades of brown may vary, the white markings have a set pattern. The minimum height for a mature doe is 25 inches and the minimum weight is 120 pounds.



SHOULD YOUR GOAT BE REGISTERED?

If you raise your goat for milk, the answer is no. However, if you plan to exhibit your goat at a fair or show, the answer is yes.

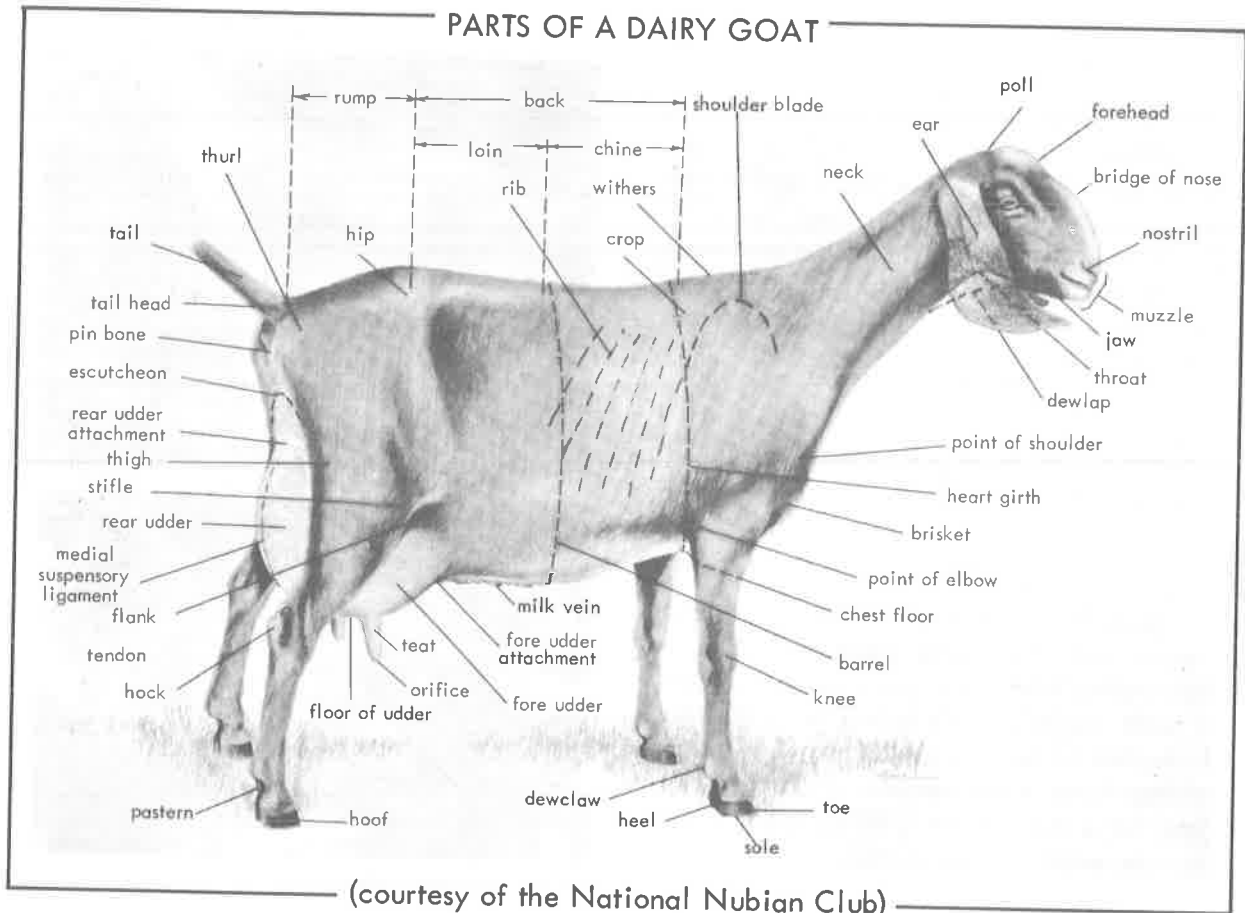
HOW TO CHOOSE YOUR GOAT

When you buy your goat, consider (1) a record of its production, (2) production of its ancestors, and (3) physical appearance of the animal.

When buying a mature goat be sure to ask for a record of the animal's milk production and production of its offspring. If the goat is young and has not yet produced milk, ask for the records of the dam. A good producing doe averages 1,800 pounds of milk in a 10-month lactation period (the time when milk is produced). This is equal to 3 quarts per day. However, the daily production varies a great deal during this period.

Because goats are dairy animals, they must have dairy characteristics. Check to see that the doe has a feminine head, thin neck, sharp withers, well-defined spine or backbone and hips, thin thighs, and rather fine bones. The skin should be thin and fine over the ribs. Look for a wide spring of rib and roomy barrel. This will help you to know how much feed she can eat. The constitution, or physical nature, is an important item shown by the depth and width of the chest. It's important to look at the udder, too. It should be large when full of milk and very much smaller when empty. A large udder does not always mean a high milk yield.

If you find there is a great demand for buck service in your community, or if you have a large number of does, a buck may be a good buy. If not, *do not* buy a buck.



(courtesy of the National Nubian Club)

HOUSING

You don't need an elaborate barn or house for your goat. Some type of small shed, about 4 x 6 feet, will make a suitable home. It should protect her against drafts, rain, and cold weather. Part of it may be closed off to store feed and equipment.

Give your goat plenty of room to move around freely. An exercise yard is a must. It should be about 200 square feet. The yard may be fenced with either woven wire or boards and should be between 48 and 54 inches high.

Teach your goat to respect the fence while she is still young. Use a gate when you take her in and out. Don't lift her over the fence when she is a kid or she will soon learn that she need only jump over the fence when she wants to go out. If your goat insists on jumping out, put a wire over a small pen. Keep her there until she learns that it is impossible to jump over the fence.

Have a dirt floor for the shed and exercise area, rather than wood or concrete. Keep it clean at all times.

EQUIPMENT

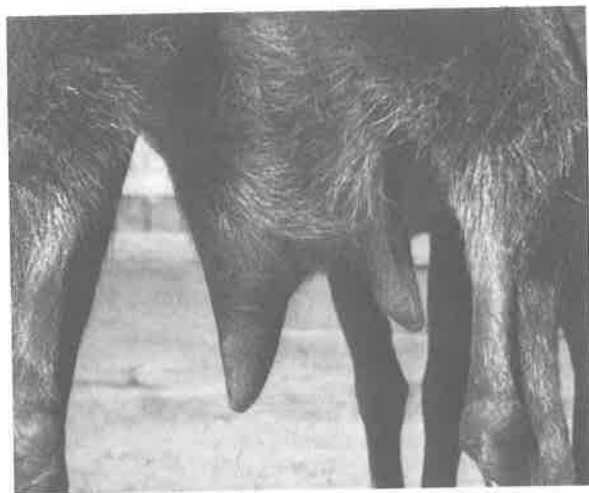
You will need a brush, pan, cloth for washing, and a milk pail. It is a good idea to have a milk platform, but it isn't absolutely necessary. Build the platform and place it so you can clean it thoroughly. Have a place to milk that is separate from the living quarters. This is not necessary, but it helps keep the milk sanitary.

Brush the goat and wash the udder before milking. After milking, be careful to guard the quality of milk. All milking utensils and storage containers should be thoroughly scrubbed and sanitized. Dirty equipment can easily ruin the milk.

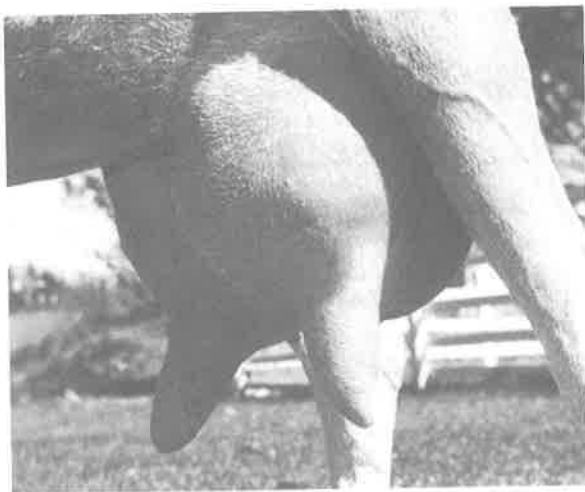
Feeding Your Goat



UNDESIRABLE UDDER, TEATS TOO LARGE



UNBALANCED UDDER DUE TO MASTITIS



GOOD UDDER

When you have chosen your doe and provided her with good housing and yard facilities, your job has just begun. She needs the right kind of feeding to make her a top milk producer.

Give your kid a good start. She needs at least two feedings of her mother's milk, colostrum. It provides vitamin A and helps prevent disease. This first thick, yellow milk is not suitable for humans.

You can let her nurse her dam at birth or feed her by pan or bottle. Or you can let her nurse for three days, then hand feed her. Pan feeding is easier than bottle feeding; but a kid is less likely to gulp milk with bottles and it is easier to keep the milk at the proper temperature. Soft-drink bottles with nipples are satisfactory for feeding kids. But whatever method you use, all utensils must be thoroughly clean. Wash and scald utensils after each feeding. All milk must be warmed to about 100° F; the kid will not drink it cold.

CHANGE FEED SLOWLY

Whole goat's milk is the best feed for kids, but whole cow's milk can be used instead, or a high-fat lamb's milk replacer can be substituted for part of the milk. All kids start nibbling leafy hay when they are a few days old. A high-protein calf starter should be fed as soon as the kid will accept it. She probably will not eat much of this until she is about 3 weeks old. When she is 2 or 3 weeks old she will start drinking water by herself from a pan or pail, even if she is nursed or bottle fed; she will also begin to eat leaves from green plants, briars, and so on. If she is eating grain and hay well at the end of eight weeks, milk feeding can be stopped. Your dairy goat will like roots, silage, and alfalfa and probably will not tire of such a diet.

PASTURE FEEDING

Pasturing is the ideal way to feed your goat, but keep in mind that irrigated pasture is an excellent breeding ground for worms, flukes, and other parasites. Goats do well both on alfalfa pasture and on some of the native grasses. Because a goat enjoys variety, provide your goat with as large a pasture as possible. Always check to be sure her feed and drink are clean. She will do her best when you provide clean feed, drink, and pasture.

READY-MIX FEED

You may buy your grain and mix it at home. However, several commercial feed companies produce ready-mix feed. Ready-mixed dairy feeds are fine and may be less expensive,

depending upon how much you buy. Have fresh clean water and salt before your goat at all times.

A doe that produces less than 1 quart of milk per day gets all the nutrients she needs from a good quality alfalfa. A doe that produces more milk needs more than alfalfa. She needs a quart measure of concentrate mixture for each 4 pints of milk produced daily. Give half of the concentrate at the morning milking and the other half at the evening milking.

A pregnant doe should have a dry period of 2 months just before kidding; during this period she should receive all the alfalfa she will eat. Increases or changes in feed should always be gradual. (For method of drying up, refer to page 9.)

FEEDING GUIDE

AGE	FEED	AMOUNT EACH DAY
Birth to 3 days	Colostrum	All the kid wants
3 days to 3 weeks	Whole milk (cow or goat) Water, salt	2 to 3 pints All the kid wants
3 weeks to 4 months	Whole milk Creep feed (1) Alfalfa hay (2) Water, salt	2 to 3 pints, up to 8 weeks All the kid will eat, up to 1 pound per day All the kid will eat All the kid wants
4 months to freshening	Grain mixture (3b) Alfalfa hay or pasture (2) Water, salt	Up to 1 pound of high protein feed All the doe will eat All the doe wants
Dry pregnant	Grain mixture (3b) Alfalfa hay or pasture (2)	Up to 1 pound mix for a dry animal All the doe will eat
Milking doe	Grain mixture (3a) Alfalfa hay (2) Water, salt	Minimum of 1 pound up to 2 quarts of milk per day. Add 1 pound grain mixture for each additional 2 quarts of milk. All the doe will eat All the doe wants

- (1) Creep feed may be a commercially mixed milk supplement or calf starter.
- (2) Alfalfa hay of extremely high quality, fine stemmed, leafy and green.
- (3) Suggested grain mixtures
 - (a) For a lactating doe
 - 55 pounds barley or oats
 - 15 pounds beet pulp
 - 20 pounds wheat, mixed feed or mill run
 - 10 pounds linseed, cottonseed, or soybean oil meal

- (b) For a growing or a dry doe
 - 15 pounds beet pulp
 - 50 pounds barley or oats
 - 15 pounds wheat, mixed feed or mill run
 - 20 pounds linseed, cottonseed, or soybean oil meal

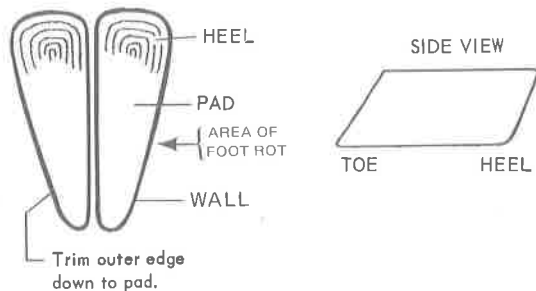
If you use commercial dairy cow or dairy goat feed, use it according to your goat's stage of growth—growing, drying, or lactating.

Your Goat Needs Care

TRIM HOOFS OFTEN

To ensure your goat's good health, and help prevent foot rot, properly trimmed hoofs are a must. Untrimmed or poorly trimmed hoofs can cause serious lameness. The more often you trim them, the less you have to cut off. Check the hoofs once a month. Use either a small hand pruner or a sharp knife whose blade will lock in an open position. Most people prefer to use the sharp knife to get a more level floor on the hoof.

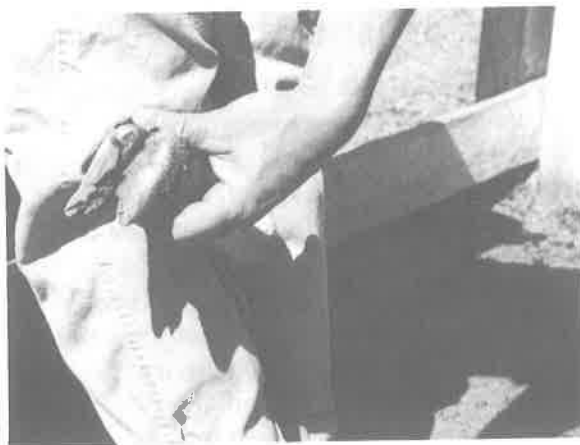
Trim the bottom of the hoof so that it is parallel with the top.



Always cut from heel to toe.

If you trim the hoofs often, you won't need to trim much of the pad, if any. Sometimes you may have to trim some of the heel in order to get the bottom level.

If some of the pad has to be trimmed, do it in thin slices; stop when the pad turns a pinkish color, as you may draw blood if you go too deep.



The right-handed person stands on the right side of the goat when trimming the front feet. The left-handed person, on the left side. If possible, keep your animal against a fence or wall. This will prevent excessive movement. When working on the opposite hoof, reach across the animal and brace the animal against your body.



Work on one toe at a time. With the first cut remove the outer wall. Then level the heel and pad to make the hoof floor level. It is seldom necessary to remove much of the pad. If it is, take care not to cut too deep as this will draw blood.



When you finish the first toe, begin on the other. Take care to trim both toes so that when the foot is placed on the ground, one toe is not longer than the other.



Note that the well-trimmed hoof does not have an overlapping wall. The hoof floor is level and clean.



This rear hoof is badly in need of trimming.



When trimming the rear hoof, stand to the rear; bring the goat's leg through your legs and brace it against your knee.

The procedure for trimming the rear feet is the same as for the front feet.

HOW TO DEHORN

Some kids are born hornless. If your goat starts to develop horn buds, follow these steps to dehorn the animal. Caustic sticks of soda or potash may be used, but be extremely careful in handling them. They may injure your skin. They may also be harmful to goats that come in contact with the treated animal.

The disbudding iron probably gives the most successful results. It is easier on both you and the kid than other methods. You can purchase a disbudding iron from goat dairy supply firms, or make one if you are handy with tools. It looks like a soldering iron with the tip sawed off. Irons with slightly curved ends are better than irons sawed off with plain ends, but both give good results.

For disbudding, heat the iron so that at least 2 inches are cherry-red. Save time by having two irons heated so that a fresh one is ready for the second horn bud. For small doe kids, a 7/8-inch (diameter) iron is large enough. For large does, and especially buck kids, a 1-inch iron is better. Center the iron on the horn buds and apply it with a circular motion and light pressure. Do this for about 5 to 10 seconds or more, depending on the size and development of the horn buds.

When the iron has burned enough, the clean skull will show. It is important that the iron be cherry-red hot. A lower temperature takes a longer time and is more exhausting to the kid. Apply unguentine or carbolated vaseline to each disk immediately after disbudding. To dehorn an adult goat, use either horn scoops or a wire saw.

HOW TO CASTRATE THE BUCK KID

If you have a male goat that will not be used for breeding, castrate him when he is 1 to 14 days old. Do this on a bright, dry day, rather than in a cloudy, chilly, or rainy period. Use a clean, disinfected knife to cut off one-third of the lower part of the scrotum or bag. Then force the testicles out and hold them with a firm grip, pulling them out with the attached cords. This should be done with a steady pull. Cut or crush the cords and treat the wound with some standard disinfectant.

Other methods include the use of the Burdizzo, elastrator, and emasculator. For use of these methods check with your leader or farm advisor.

BREED THE DOE ONCE A YEAR

To maintain milk production over a period of years, it is necessary to breed your doe once a year. Milk goats are good breeders. A mature doe usually has two kids at one time; frequently there are three and sometimes four.

Dairy goats tend to be seasonal breeders. The breeding season is usually from late August through March. Does may be bred as young as eight months if they are well grown (weighing at least 80 pounds). During this time the bucks have a strong odor. Except when breeding, keep them in a separate pen at all times.

Does usually remain in heat from 1 to 2 days. The period between heats varies, but is generally from 17 to 21 days. A doe will freshen about 5 months after the day of service (145 to 155 days).

It is good management to have the doe freshen once each year. Allow her a dry period of from 6 to 8 weeks. To dry your

doe, switch to dry feed and cut out concentrates. Do not milk her for 7 days. Of course her udder will fill up. This pressure stops milk production and she will dry up. At the end of 7 days, milk her out again.

CARE AT KIDDING TIME

Shortly before your doe is due to freshen, clip around her udder, hind-quarters, and tail for greater cleanliness during kidding. Give her a quiet kidding stall and clean bedding. Do not tie the doe. Do not leave cold water where she can drink it after kidding. Because kids are often born when the doe is standing, don't leave a bucket where she might drop a kid in it.

A few days before she is due, cut down her grain feeding. Substitute laxative feeds, such as bran or beet pulp. You will know when she is due by these signs: rising tail bone, loose to the touch, with sharp hollows on either side; rapid cud chewing; restlessness and pawing at bedding; low, plaintive bleating; rapidly filling udder, turning pink and shiny just before kidding; and a mucous discharge from the vulva.

Watch for Parasites

EXTERNAL PARASITES

Guard against lice, mange mites and ticks, fleas, domestic flies, screwworms, and fly maggots—external parasites which in dense numbers may harm your goat. While applications of insecticides will control these parasites, the use of chemicals will not replace good sanitation and animal management. Routinely examine all animals in the winter for lice and in the spring and summer for ticks, particularly if the goats have access to brush areas. Treat all skin wounds to prevent attacks by flies in summer. Thoroughly inspect any goats purchased before placing them in your herd.

With good sanitation you can reduce fly problems. Get rid of places where fly maggots develop. Manure, piles of rotting vegetation, garbage, and other plant accumulations are ideal places for fly development. Be sure that the housing area for goats is kept sanitary by weekly removing manure and bedding during hot summer months.

INTERNAL PARASITES

Goats may harbor many internal parasites; the more important include coccidia, the stomach and intestinal roundworms, lungworms, and liver flukes.

TREATMENT FOR LICE, FLEAS, OR TICKS

Insecticide	Type Application	Days between Treatment and Lactation(L) or Slaughter(S) ¹	Remarks
Ciodrin [®] * 14.4% EC ²	0.25% spray	None(L) None(S)	Repeat treatment for lice in 14 days.
Ciovap [®] (10% Ciodrin, 2.5% Vapona EC)	0.25% spray	None(L) None(S)	As above. Good for ear ticks in mineral oil at ½ oz per ear by use of rubber-tipped oil can.
coumaphos (Co-Ral [®]) 5% dust	5% dust bottle	None(L) None(S)	For treatment of ear ticks, by applying a few puffs into each ear.
dioxathion (Delnav [®]) 30% EC	0.15% dip 0.15% spray	None(L) None(S)	In dips, water animals well before dipping to prevent drinking of vat fluid; hand dip young animals.
ronnel (Korlan [®]) 25% EC	0.5% dip 0.5% spray	7(L) 28(S)	Repeat treatment for lice in 14 days.

TREATMENT FOR BLOWFLY MAGGOTS AND SCREWORMS (IN WOUNDS)

Insecticide	Type Application	Days between Treatment and Lactation(L) or Slaughter(S) ¹	Remarks
Lindane* (EQ335) 3%	Smear, 3%	None	Wet entire areas around wound and wash or smear directly into wound. Do not use on animals less than 3 months old.
MGK 326	Smear or aerosol spray	None	As above but no limitations.
MGK 264	Spray or aerosol spray	None	As above.
ronnel (Korlan [®]) 25% EC	Sponge wash, 0.5%	7(L) 28(S)	As above, but use 7 days prior to lactation.

TREATMENT FOR MITES OR SCABIES

Insecticide	Type Application	Days between Treatment and Lactation(L) or Slaughter(S) ¹	Remarks
Lime sulfur	Dip with special proprietary solutions.	None	Scabies must be reported to California Food and Agriculture as infested animals are subject to quarantine regulations. Vat dip for 2 to 3 minutes per animal at water temperature of 95° to 105° F and redip in 10 to 14 days.

¹ Minimum number of days between day of last treatment and time of lactation or slaughter.

² EC = emulsifiable concentrate to mix in water.

* Permit required for purchase or use from the County Agricultural Commissioner.

[®] Registered trade name.

The signs produced in clinically infected animals may mimic those produced by bacterial, viral, or other disease-producing agents. To confirm a diagnosis of disease produced by any of these parasites requires laboratory and/or autopsy procedures which can only be conducted and evaluated by a skilled professional. For this reason, the goat owner should call on a veterinarian when a goat becomes sick from any cause.

The goat owner should be more concerned with preventing parasitic disease than with treating it. With rare exception, it is impossible to rear goats free of all internal parasites. Consequently, the object of disease prevention is to prevent the number of parasites from increasing to a level that will cause disease. Acute parasitic disease occurs in the susceptible goat as the result of an overwhelming exposure to infective stages of a specific parasite over a brief period.

COCCIDIOSIS

This is primarily a disease of the young goat. Where coccidia are present in a goat herd, a balance is reached between the level of infection and the resistance of older goats. This balance prevents establishment of infective levels which produce disease. Introduction of a susceptible goat, such as a newborn or recently weaned kid, to an environment to which it is unadapted may result in overwhelming exposure, particularly if feed bunks and water troughs are not protected from fecal contamination.

Prevention: The chemicals most valuable in preventing coccidiosis are the sulfonamides and the more recently developed compound, amprolium, but label restrictions apply to a period when milk must be withheld from consumption. Where management practices prove inadequate in preventing exposure to disease, these chemicals may be utilized to prevent disease, while resistance is being established in previously susceptible goats. Such use of chemicals calls for consultation with a veterinarian.

STOMACH AND INTESTINAL ROUNDWORMS

Whereas infection with coccidia increases when feed bunks and, to a lesser extent, water troughs, are improperly designed, infection by gastrointestinal roundworms and the large lungworm (*Dictyocaulus filaria*) increases when pastures are overstocked and the young, more susceptible goats are pastured with older, contaminative goats. Gastrointestinal parasitism occurs more frequently as a disease in the late spring and early summer and in late fall and winter.

Prevention: Use of appropriate deworming medicines in all pastured goats in midspring, in does approximately two weeks after parturition, and in all pastured kids at weaning will aid in preventing disease. Frequency of deworming depends upon factors peculiar to the premises of the individual goat owner and can be best established by consultation with a veterinarian.

Selection of a dewormer is largely determined by cost and ease of administration. All of the newer broad spectrum anthelmintics approved for use in sheep or cattle are effective in goats. Haloxon and thiabendazole are the only ones registered for use in goats, and milk must be withheld for 96 hours after treatment. The goat owner is well advised to consult with a veterinarian before using anthelmintics.

LUNGWORM DISEASE

Produced by the large lungworm, lungworm disease is most common in the fall, winter, and spring because a cool, moist environment is required for overwhelming levels of infection to develop. In areas such as California's north coast, environmental conditions suitable for overwhelming infections are present throughout the year, and occurrence is then largely determined by the presence or absence of the parasite and susceptible goats.

Prevention: Previous infection with the lungworm produces a relatively high degree of resistance to reinfection; this, among other factors, results in a more variable potential for disease than exists with the gastrointestinal parasites. For this reason, preventive use of dewormers is not as widely practiced against lungworm. The only chemical now considered effective and available for use against this worm is levamisole, but it has not yet been registered for use in goats.

LIVER FLUKES

These may be a serious problem in goats pastured in wet meadows and along streams

and canals. The most effective means of control is to prevent the goats from grazing such potentially infective areas. In the United States there are no dewormers that are registered for use against this parasite.

SUMMARY

The most important managerial practice that can be instituted against all internal parasites is establishing a properly balanced and adequate nutrient supply; without it overwhelming outbreaks of disease and death from parasitic infection result.

Guard Your Goat Against Disease

Diseases commonly found in milking goats include mastitis, boils, foot rot, joint conditions, pink eye, and paratuberculosis (wasting disease). Diseases more common to young goats, but occasionally found in adults, are tetanus, enterotoxemia, infectious scours, white muscle disease, pneumonia, and sore mouth.

MASTITIS

The major portion of a doe's udder is comprised of the cistern areas where milk is stored. The amount of glandular or milk secreting tissue is relatively small and is positioned high in the udder against the body wall. Bacteria, which gain entrance to the gland through the teat opening, multiply and migrate to the glandular tissue where they cause inflammation. Most mastitis seen in dairy goats is the result of staphylococcal infection spread from the infected glands of other goats by the milking process. Streptococcal and mycoplasma infections, though less frequent, are spread in the same manner. Boils of the gland can also be spread from goat to goat and may be precipitated by

butting or bruising of the udder or injuries causing breaks in the skin. Other forms of mastitis are occasionally seen.

Signs of *acute mastitis* are severe and include swelling, heat, and pain of the affected side with a characteristic change from a normal milk secretion to a watery, yellow, or gargety secretion. The other form, *chronic mastitis*, may not be easily recognized. A little garget in the first stream of milk, reduced production on one side, an unbalanced udder, reduced solids on test or a salty flavor—all are signs of a low grade mastitis infection. Suspicions of a chronic mastitis infection can be confirmed by examination of the cell content of the milk, using the California Mastitis Test (CMT), and from a bacterial culture of a milk sample submitted to the laboratory.

Sanitation at milking time is the single most important step in preventing mastitis. Before milking, the teats and milker's hands should be disinfected in a 25 ppm iodine solution or 200 ppm chlorine solution and dried well with toweling. Teats should be dipped immediately after milking in an approved bovine teat dip solution. These precautions are the

best ways to prevent mastitis. Nursing kids can also spread mastitis. Does with mastitis that fail to respond to treatment should be culled from the herd.

Treatment: The treatment of mastitis in goats may not always be satisfactory, because the organisms causing mastitis in goats are among the most difficult to kill with medication. Use of cow-type mastitis infusions into the gland for three or more days, sometimes combined with systemic injections of antibiotics, are usually recommended by veterinarians. Always observe recommendations on the labels of drugs used to treat mastitis which indicate the period of time treated milk should not be used for human consumption. Use of "dry cow" mastitis products in the udder during the dry period is also beneficial for chronic mastitis in the goat. Recommendations from your local veterinarian designed for a particular type of mastitis will generally yield best results.

Public health significance: Questions always arise as to the safety of mastitic milk for human consumption. Milk which does not appear normal or which has drug residues should never be used for human consumption. Normal looking milk containing small numbers of pathogenic bacteria from chronic mastitic glands, if left unrefrigerated for a few hours, can cause the multiplication of these bacteria many times and result in food poisoning in humans. This same milk, if unpasteurized and used for making cheese, can also result in human health problems. Ideally, all suspect milk should be pasteurized and milk used for cheese making should always be pasteurized. Never use milk for human consumption from an obviously ill or abnormal acting goat.

BOILS

Boils caused by the bacteria *Corynebacteria ovis* are local abscesses generally found about the head, neck, flank, udder, and stomach of goats. They are contagious from goat to goat

(or sheep to goat) by ingestion, flies, surface cuts, feed troughs, brushes, and other materials. Butting and bruising and other means of trauma often initiate the occurrence of boils. Though appearing harmless, these abscesses readily spread to lymph nodes and extend to the major internal organs (lungs, liver, kidneys) where the resulting damage shortens the life and productivity of the animal.

Examination of an animal for boils before purchase is advisable. Culling of chronically infected animals will reduce exposure of the young animals in the herd.

Treatment: Usually treatment includes opening and draining of the local abscesses, followed by liberal use of tincture of iodine to the area. Animals with draining or treated boils should be separated from other animals until they have healed. Use of antibiotics, sulfas, and oral organo-iodides has a place in treatment upon recommendation of a veterinarian. Vaccination and oral medicants as preventatives have given inconsistent results, and milk residues are always a consideration with this approach.

FOOT ROT

Foot rot is caused by a specific bacteria which is transmitted from the feet of infected sheep or goats to susceptible goats by contamination of the soil of pens and pastures. Lameness in one or more feet is the first indication of foot rot. Trimming of the affected feet reveals a dark moist area of dead tissue between the wall of the hoof or sole and the sensitive tissues beneath.

Frequent trimming of normal feet, followed by occasional medicated foot baths, and isolation of affected goats until cured are sound preventative measures. Infected pens will become free of the organisms three weeks after removal of infected goats.

Treatment: Trim all infected areas of the foot down to clean tissues, even though bleeding may result. Severely trimmed and exposed feet can be wrapped in protective bandage for a few days to control bleeding and ease the pain.

Both normal and affected feet of all goats in the herd should be treated after trimming in a foot bath containing 2 percent copper sulfate or formaldehyde solution. Infected goats should be treated three times more at three-day intervals.

JOINT CONDITIONS

Swelling of the knee (carpal) joint in goats is not uncommon because of the frequent irritation which occurs. This may result in non-painful swellings which involve the bursas or joint capsules themselves. Acute pain or lameness associated with joint swellings generally indicates an infection of some sort. Joint infection in young kids may be due to navel infections resulting from birth in unclean surroundings.

Joint infections in yearlings or mature goats may be an extension of infection which occurred elsewhere in the body. Mycoplasma arthritis may occur spontaneously or be a sequel to pneumonia or mycoplasma mastitis infection.

Treatment: Acute joint conditions require use of antibiotics. The nature and extent of treatment will depend on the type of infection.

PINK EYE

Pink eye is an infectious disease caused by one or more organisms that spreads from goat to goat. Its transmission is increased by dust and flies. First signs are tearing and drooping eyelids. Foxtails and other foreign bodies in the eye can give similar signs and therefore affected eyes should be carefully examined. True pink eye causes an ulcer or cloudy area in the center of the clear part of the eye (cornea).

Treatment: Treatment consists of using antibiotic ointment in the eye and isolating affected animals in a darkened area. Severe cases may require treatment by a veterinarian. Vitamin A may hasten healing.

PARATUBERCULOSIS (JOHNE'S DISEASE, WASTING DISEASE)

This is a chronic bacterial infection spread from contamination of feed and watering areas by the feces of infected animals. Signs usually do not appear until animals are 2 years old or older and begin with severe diarrhea and weight loss, generally initiated by the stress of kidding. Although affected animals improve if they are placed on excellent nutrition and their lactation terminated, this is an incurable disease of a chronic wasting nature and known infected animals should be culled. Johne's is frequently confused with internal parasitism or acute dietary upsets. A diagnosis should be confirmed by a veterinary laboratory.

TETANUS

Goats—young kids in particular—are highly susceptible to tetanus, caused by an organism that is found to varying degrees in the surroundings of most animals. Untreated navels, puncture wounds, castration, debudding, tattooing, and ear tagging all produce the type of wounds in which the tetanus organism can grow. When these procedures are performed, it is advisable to use 500 to 1,500 units of tetanus antitoxins per animal for short term protection. Affected animals show muscle spasms and hyperexcitability, and they eventually die.

Treatment: Use of antibiotics and tetanus antitoxin along with cleansing of the local wound, if done early, may effect a cure in a few cases.

ENTEROTOXEMIA (OVEREATING DISEASE)

This disease results from the toxins produced by a group of clostridial bacteria which multiply in the intestinal tract of young growing animals on rich diets or undergoing rapid feed changes. Sudden unexplained deaths of obviously healthy animals could be caused by these organisms. An autopsy by a veterinary laboratory may confirm the diagnosis. Prevention with vaccines, antisera, or oral antibiotics is usually successful. Once experienced, a goat owner should adopt and maintain a rigid vaccination program in young kids or in pregnant does to protect the very young through colostrum milk.

INFECTIOUS SCOURS

This condition of young kids or newborn kids is generally initiated through crowding and poor sanitation and is generally bacterially caused. Adequate colostrum milk, clean surroundings, and judicious use of antibiotics are all basic to controlling infectious scours.

PNEUMONIA

Pneumonia epidemics in young kids, as evidenced by rapid breathing, fevers, nasal discharge, and depression, are generally precipitated by crowding in poorly ventilated buildings, severe weather changes (both hot or cold weather), and shipment to fairs. Viruses, bacteria, and mycoplasma organisms may all be present in an outbreak.

Treatment: Treatment consists of isolating sick animals, using antibiotics and sulfas, and offering supportive treatment with fluids. In some cases, premedicating normal appearing animals may prevent spread of this disease complex. Seek professional help.

WHITE MUSCLE DISEASE

Young kids from birth to a few months of age may be affected by this selenium deficiency disease which may take one of two forms: (1) sudden unexplained death or (2) muscular paralysis, particularly of the hind limbs, or stiffness and inability to rise.

Treatment: Early injection of Vitamin E-selenium compounds may cause a cure. If treatment is delayed, muscle damage may be permanent. Selenium-vitamin E compounds are most effective if injected as a preventative into susceptible normal-appearing animals, once a diagnosis is made in the flock. Many feeds in California are selenium-deficient.

SORE MOUTH

This is a contagious viral disease of sheep and goats which causes scabbing sores on the lips of young kids and can spread to the teats of nursing does. The lesions are painful and cause loss of condition in young kids; they can lead to mastitis in nursing does. Animals are most susceptible at weaning and fair time. This virus can be picked up at fairs or by introduction of outside animals. A vaccination program for all mature and young animals should be initiated; thereafter, only young kids need be vaccinated yearly. Sores can be spread to the hands of humans.

RINGWORM

Ringworm is a fungal disease of the skin of goats which can also be contagious to humans. It generally causes loss of hair with skin irritation in multiple circular patterns.

Treatment: Early treatment locally with iodine compounds is generally successful. Newer drugs are available from a veterinarian for more severe cases.

Diseases Affecting Man Through Milk

Many diseases can be spread from goats to man through the milk. A few of the more serious diseases are tuberculosis, brucellosis, leptospirosis, listeriosis, and staphylococcus food poisoning.

TUBERCULOSIS is a chronic infectious disease of mammals rarely found in goats. It can be carried to man, but may be prevented by pasteurization of the milk. Refer the problem of diagnosis to the local or state veterinarian.

BRUCELLOSIS is a contagious disease of cattle and swine, rarely found in goats. It can be transmitted to man and causes undulant fever or Malta fever. The disease can be carried through contaminated food, milk, and water or from vaginal discharge. It gains entrance through skin wounds, mucous membranes, and mammary glands. The dis-

ease can be prevented by proper sanitation and good management. Take precautions when introducing a new goat to the herd. A blood test by a veterinarian will show whether the disease is present. This test should be given to all animals that are producing milk.

LEPTOSPIROSIS is transmitted from goat to goat or from goat to man through milk. This disease causes high fever in man for 3 to 8 days. Other signs are headaches, vomiting, and pains in muscles and joints, followed by jaundice and kidney complications. It is very serious to both goat and man.

LISTERIOSIS causes abortions and circling disease in goats. This disease can be transmitted from goats to humans as meningitis and glandular fever.

Good Grooming - Good Showing

APPEARANCE OF YOUR GOAT

- Condition and thriftiness—normal growth, neither too fat nor too thin
- Grooming
 - Hair properly groomed, hide soft and pliable
- Hoofs trimmed and shaped to enable animal to walk and stand properly
 - Hornless or neatly disbudded
- Clipping
 - Entire body clipped about 3 weeks before show, if weather permits
- Long hair inside ears trimmed, tail neatly trimmed in a V-shape with a tuft on the end
- Cleanliness
 - Hair clean and, if possible, free from stains
 - Hide and ears free of dirt, legs and feet clean

IN THE RING

Leading—As you enter, lead the goat at normal walk around ring in clockwise direction. Walk on the left side of your animal, next to the head. Hold the lead chain with your right hand. Holding the chain close to animal insures more secure control.

Your goat should lead readily, respond quickly.

Use the right type of lead chain. It should be placed correctly and fit properly. A small link or choke chain is advisable. Face forward when leading at all times.

Lead slowly, with the animal's head held high enough for impressive style, attractive carriage, and graceful walk.

Posing—When you pose and show the goat, always keep it between yourself and the judge.

Stand facing your goat at an angle far enough away to see stance of feet and topline. Pose your goat with the front feet placed squarely under and hind feet slightly spread. If possible, face the goat up grade with front feet on slight incline.

Don't crowd the exhibitor next to you or leave space enough for another animal when you lead into a side-by-side position. When the judge changes placing, lead animal forward out of line, down or up to the place directed, then back through the line, finally making a U-turn to get into position. Do not lead animal between the judge and an animal he is observing.

Step the goat ahead by a slight pull on the lead strap or collar. Move the animal back by exerting pressure on the shoulder point with thumb and fingers of the right hand, pushing back with collar.

When the judge is observing the animal, let her stand when posed reasonably well. Be natural. Overshowing, undue fussing, and maneuvering are objectionable practices.

Show Your Goat at Its Best—Quickly recognize the conformation faults of the animal you are leading and show her to overcome them. You may be asked to exchange with another and show his or her doe for a short time.

Poise, Alertness, and Attitude—Keep an eye on your goat and be aware of the position of the judge at all times. Do not be distracted by persons and things outside the ring. Show animal at all times and not yourself. Respond quickly to requests from the judge and officials. Be courteous and sportsmanlike at all times. Keep showing until the entire class has been placed and the judge has given his reasons.

ADGA DAIRY GOAT SCORE CARD

(Ideals of type and breed characteristics must be considered in using this card.)

Based on Order of Observation			
1. GENERAL APPEARANCE		30	
Attractive individuality revealing vigor; femininity with a harmonious blending and correlation of parts; impressive style and attractive carriage; graceful walk.			
Breed characteristics		10	
Head — medium in length, clean cut; broad muzzle with large, open nostrils; lean, strong jaw; full, bright eyes; forehead broad between the eyes; ears medium size, alertly carried (except Nubians).			
Shoulder blades — set smoothly against the chest wall and withers, forming neat junction with the body.			
Back — strong and appearing straight with vertebrae well defined.			
Loin — broad, strong, and nearly level.			
Rump — long, wide and nearly level.		8	
Hips — wide, level with back.			
Thurls — wide apart.			
Pin bones — wide apart, lower than hips, well defined.			
Tail head — slightly above and neatly set between pin bones.			
Tail — symmetrical with body.			
Legs — wide apart, squarely set, clean-cut and strong with forelegs straight.			
Hind legs — nearly perpendicular from hock to pastern. When viewed from behind, legs wide apart and nearly straight. Bone flat and flinty; tendons well defined. Pasterns of medium length, strong and springy. Hocks cleanly moulded.		12	
Feet — short and straight, with deep heel and level sole.			
2. DAIRY CHARACTER		20	
Animation, angularity, general openness, and freedom from excess tissue, giving due regard to period of lactation.			
Neck — long and lean, blending smoothly into shoulders and brisket, clean-cut throat.			
Withers — well defined and wedge-shaped with the dorsal process of the vertebrae rising slightly above the shoulder blades.		20	
Ribs — wide apart; rib bone wide, flat, and long.			
Flank — deep, arched, and refined.			
Thighs — incurving to flat from the side; apart when viewed from the rear, providing sufficient room for the udder and its attachments.			
Skin — fine textured, loose, and pliable. Hair fine.			
3. BODY CAPACITY		20	
Relatively large in proportion to the size of the animal, providing ample digestive capacity, strength, and vigor.			
Barrel — deep, strongly supported; ribs wide apart and well sprung; depth and width tending to increase toward rear of barrel.		12	
Heart girth — large, resulting from long, well-sprung foreribs; wide chest floor between the front legs, and fullness at the point of elbow.		8	
4. MAMMARY SYSTEM		30	
A capacious, strongly attached, well-carried udder of good quality, indicating heavy production and a long period of usefulness.			
Udder — Capacity and Shape — long, wide, and capacious; extended well forward; strongly attached.		10	
Rear attachment — high and wide. Halves evenly balanced and symmetrical.		5	
Fore attachment — carried well forward, tightly attached without pocket, blending smoothly into body.		6	
Texture — soft, pliable, and elastic; free of scar tissue; well collapsed after milking.		5	
Teats — uniform, of convenient length and size, cylindrical in shape, free from obstructions, well apart, squarely and properly placed, easy to milk.		4	
TOTAL		100	

ADGA DAIRY GOAT SCORECARD FOR BUCKS

(Ideals of type and breed characteristics must be considered in using this card.)

Based on Order of Observation			
1. GENERAL APPEARANCE		40	
Attractive individuality revealing vigor, masculinity with a harmonious blending and correlation of parts; impressive style and majestic carriage; graceful and powerful walk.			
Breed Characteristics		10	
Head — medium in length, clean-cut; broad muzzle with large, open nostrils; lean, strong jaw; full, bright eyes; forehead broad between the eyes; ears medium size, alertly carried (except Nubian and La Manchás)		5	
Color — appropriate for breed.			
Shoulder blades — set smoothly against the chest wall and withers, forming neat junction with the body.			
Back — strong and appearing straight with vertebrae well defined.			
Loin — broad, strong and nearly level.			
Rump — long, wide and nearly level.		10	
Hips — wide, level with back.			
Thurls — wide apart.			
Pin bones — wide apart, lower than hips, well defined.			
Tail head — slightly above and neatly set between pin bones.			
Tail — symmetrical with body.			
Legs — wide apart, squarely set, clean-cut and strong with forelegs straight.			
Hind legs — nearly perpendicular from hock to pastern. When viewed from behind, legs wide apart and nearly straight. Bone strong, flat and flinty; tendons well defined. Pasterns of medium length, strong and springy. Hocks cleanly moulded.		15	
Feet — short and straight, with deep heel and level sole.			
2. DAIRY CHARACTER		25	
Animation, angularity, general openness, and freedom from excess tissue.			
Neck — medium length, strong and blending smoothly into shoulders and brisket.			
Withers — well defined and wedge-shaped with the dorsal process of the vertebrae rising slightly above the shoulder blades.			
Ribs — wide apart, rib bone wide, flat and long.			
Flank — deep, arched and refined.			
Thighs — incurving to flat from the side; apart when viewed from rear.			
Skin — fine textured, loose and pliable. Hair fine.			
3. BODY CAPACITY		25	
Relatively large in proportion to size of the animal, providing ample digestive capacity, strength and vigor.			
Barrel — deep, strongly supported; ribs wide apart and well sprung; depth and width tending to increase toward rear of barrel.		13	
Heart Girth — large, resulting from long, well-sprung foreribs; wide chest floor between the front legs, and fullness at the point of elbow		12	
4. MAMMARY AND REPRODUCTION SYSTEM		10	
Mammary — two rudimentary teats of uniform size and showing no evidence of extra orifices, extra teats, spur teats or teats that have been removed. Teats should be squarely placed below a wide arched escutcheon.		5	
Reproduction — two testicles of appropriate size for age of animal both showing evidence of being in a viable healthy breeding condition. All visible parts of reproduction system showing no evidence of disease or disability.		5	
TOTAL		100	

Based on Usual Order of Consideration

1. APPEARANCE OF ANIMAL		40
Condition and Thriftiness – showing normal growth – neither too fat nor too thin.	10	
Hair clean and properly groomed.		
Hoofs trimmed and shaped to enable animal to walk and stand naturally.	10	
Neatly disbubbed if the animal is not naturally hornless.		
Clipping – entire body if weather has permitted, showing allowance to get a neat coat of hair by show time; neatly trimmed tail and ears.	10	
Cleanliness – as shown by a clean body as free from stains as possible, with special attention to legs, feet, tail area, nose, and ears.	10	
2. APPEARANCE OF EXHIBITOR		10
Clothes and person neat and clean – white costume preferred.	10	
3. SHOWING ANIMAL IN THE RING		50
Leading – enter, leading the animal at a normal walk around the ring in a clockwise direction, walking on the left side, holding the collar with the right hand. Exhibitor should walk as normally and inconspicuously as possible.		
Goat should lead readily and respond quickly.		
Lead equipment should consist of a collar or small link chain, properly fitted.	10	
As the judge studies the animal, the preferred method of leading is to walk alongside on the side away from the judge.		
Lead slowly with animal's head held high enough for impressive style, attractive carriage, and graceful walk.		
Pose and show an animal so it is between the exhibitor and the judge as much as possible. Avoid exaggerated positions, such as crossing behind the goat.		
Stand or kneel where both judge and animal may be observed.		
Pose animal with front feet squarely beneath and hind feet slightly spread. Where possible, face animal up grade with her front feet on a slight incline. Neither crowd other exhibitors nor leave too much space when leading into a side-by-side position.		
When judge changes placing, lead animal forward out of line, down or up to the place directed then back through the line, finally making a U-turn to get into position.	15	
To step animal ahead – use slight pull on collar. If the animal steps badly out of place, return her to position by leading her forward and making a circle back thru your position in the line.		
When judge is observing the animal, if she moves out of position, replace her as quickly and inconspicuously as possible.		
Be natural. Overshowing, undue fussing, and maneuvering are objectionable.		
Show animal to best advantage, recognizing the conformation faults of the animal you are leading and striving to overcome them.	15	
Poise, alertness, and courteous attitude are all desired in the show ring. Showmen should keep an eye on their animals and be aware of the position of the judge at all times – but should not stare at the judge. Persons or things outside the ring should not distract the attention of the showmen. Respond rapidly to requests from judges or officials, and be courteous and sportsmanlike at all times, respecting the rights of other exhibitors. The best showmen will show the animals at all times – not themselves – and will continue exhibiting well until the entire class has been placed, the judge has given his reasons, and he has dismissed the class.	10	
TOTAL		100

Suggested Uniform:

Long-sleeved white shirt, regulation white pants, 4-H or FFA necktie, 4-H or FFA cap (if applicable), with matching shoes and belt in either black, white, or brown.

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- A.M.G.R.A. Handbook, 1956*, The American Milk Goat Record Association
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- Milk Goats*, USDA Farmers Bulletin No. 920
- Milk Goats—Why?, What? and How?*, The American Milk Goat Record Association
- Showmanship Rules*, The American Milk Goat Record Association

CAUTION

**LIVESTOCK
PESTICIDE USE WARNING — READ THE LABEL**

CAUTION

Pesticides and drugs are poisonous and must be used with caution. READ the label CAREFULLY BEFORE opening a container. Precautions and directions MUST be followed exactly. Special protective equipment (as indicated) must be used.

STORAGE: Keep all pesticides and drugs in original containers only. Store separately in a locked shed or area. Keep all pesticides and drugs out of the reach of children, unauthorized personnel, pets, and livestock. DO NOT STORE with foods, feeds or fertilizers. Post warning signs on storage areas for all chemicals, pesticides, and drugs.

USE: The suggestions given in this publication are based upon best current information. Follow directions. Measure accurately, to avoid residues exceeding established tolerances. Use exact amounts as indicated on the label, or lesser amounts as specified in this publication. Use a pesticide or drug only on animals listed on the label.

CONTAINER DISPOSAL: Consult your Agricultural Commissioner for correct procedures for rinsing and disposing of empty containers. Do not transport pesticides or drugs in vehicles with foods, feeds, clothing, or other materials, and never in a closed cab with the vehicle driver.

RESPONSIBILITY: The livestock owner is legally responsible for proper use of pesticides, including drift to other crops or properties, and for excessive residues. Pesticides should not be applied over streams, rivers, ponds, lakes, run-off irrigation or other aquatic areas, except where specific use for that purpose is intended.

PERMIT REQUIREMENTS: Many pesticides require a permit from the County Agricultural Commissioner for possession or use. Such compounds mentioned in this publication are marked with an asterisk (*).

ANIMAL INJURY: Certain pesticides or drugs may cause injury, or give less than optimum parasite control if used: (1) at the wrong animal age; (2) at the wrong time of year; (3) on animals under extreme stress or sick; (4) with the wrong formulation; (5) at excessive rates; or (6) in simultaneous use with incompatible materials. Read the label to be sure you are using the chemical properly.

PERSONAL SAFETY: Follow label directions exactly. Avoid splashing, spilling, leaks, spray drift or clothing contamination. Do NOT eat, smoke, drink, or chew while using pesticides. Provide for emergency medical care in advance.

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