



REFERENCE GUIDE

4-H Market Goat Project



Name _____

Address _____

Name of Club _____

Leader's Name _____

Name of Project _____

*4-H
Market
Goat
Project*

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1

Getting Started**Introduction**

Welcome to the 4-H market goat project! Your 4-H market goat project can be an unforgettable learning experience. You will do many things that will help you undergo personal growth and develop skills that will help you to become a more responsible person. Skills you learn from raising a goat will be valuable in the future, and will carry over into other aspects of your life. We hope you will have fun, too.

This book will teach you many of the things you need to know in order to raise a 4-H market goat. There are skills and information to learn and activities for you to do. There are some activities everyone should do and others you may choose to do. You should complete six activities per year. Twelve of these activities are required and should be completed in the first two years of the project. After the first two years, six activities should be selected from the suggested activities list in this book. Do as many of the activities as you can by yourself, but be willing to call on others for help. As you get older and advance through the market goat project, you should select more advanced activities to accomplish. Your parents, project leaders, and extension agent will be happy to teach you all they know about raising market goats!

This reference book will get you started; however, don't limit yourself to the information on these pages. Explore the Internet, newsletters, and magazines for more information.

How to Use Your Reference Guide

Your reference guide is designed to fit into a three-ring notebook with your project record books. You may keep any extra information in your notebook. You will receive only one reference guide for your entire 4-H career, so take care of it! It contains a checklist of things you should do and learn to complete your project. The things to do and learn are grouped into sections about meat goats. Each section includes:

- objectives for that section
- information about meat goats and how to care for them
- words to learn
- ideas for presentations and talks
- suggested activities
- things to check out on your own or with your leader or club.

Purpose of the 4-H Market Goat Project

In the Market Goat Reference Manual, you will learn fundamentals of raising market goats and build skills that will prepare you for life.

Some of the things you will learn about goats are:

- why people raise goats
- how to select a project goat
- how to feed and care for goats

- how to keep your goat healthy
- what is normal goat behavior
- what are the parts of a goat
- how to fit and show a meat goat
- how to keep records
- how to prepare for the roundup

Working with your goat and enjoying 4-H activities, you will develop new skills that will help you throughout your life. These skills include:

- being a leader
- being a citizen
- communicating effectively
- developing personal values
- relating to people
- preparing for a career

Project Options

Five basic kinds of 4-H goat projects are:

1. Market Goats—selection and feeding of one or more goats to market weight.
1. Dairy Goats—care and management of goats raised for milk production.
2. Pack Goats—care, management, and training a goat as a pack animal.
4. Cart Goats—care, management and training a goat to pull a cart.
5. Fiber Goats—care and management of goats raised for fiber.

This guide is written specifically for market goat projects, although much of the information will easily transfer to pack or cart goat projects. Dairy and fiber goat project members should use a different reference guide.

You will be the one responsible for caring for your goats. You may choose to take a market goat, pack goat, cart goat, dairy goat, fiber goat, or multiple kinds of projects each year. Some things for you to think about when choosing the type of goat project are:

- Do you want a short-term or long-term project?
- What kinds of buildings, equipment, and feeds do you need?
- How much help can your parents give?

Market goat projects can be completed in a few months and require fewer facilities and management skills than dairy goat projects. Dairy goat, cart goat, and pack goat projects are usually continued for more than one year.

What Do You Need?

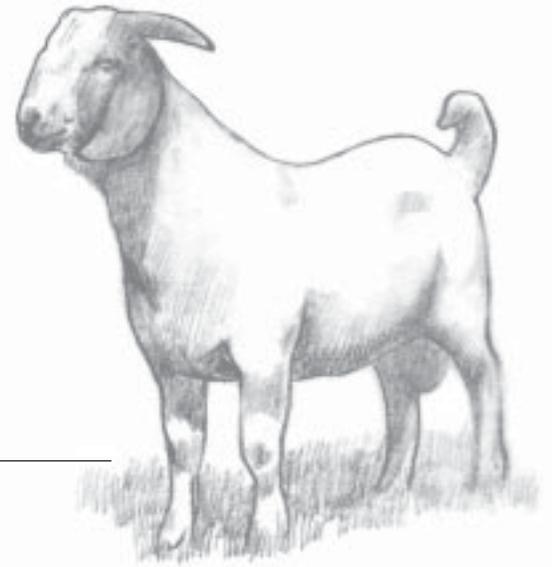
Before purchasing a goat kid, make sure you have everything you need to properly manage it and keep it healthy. If you plan to take a meat goat project you will need:

- an interest in goats
- a place to keep your goat
- equipment for feeding and watering your goat
- money to purchase and care for your goat
- support from your parents and leaders





Knowledge and Skills Checklist



Meat Goat Project Requirements

Your meat goat project has three major parts.

1. Caring for one or more meat goats each year.
 2. Completing activities and learning skills needed to complete the meat goat project. You should complete three knowledge skill and three life skill activities each year. There are a total of 12 required activities. For the first two years of the project, do six of the required activities each year. A list of the required activities for the first two years is found on page 6. After the first two years, choose six activities from the lists of additional activities in this book. You may do more than the required activities if you want to.
 3. Keeping records. The records you should keep are:
 - For the first two or three years, members should fill out a 4-H Animal Project Record for Beginning Members. Start a new one each year. More experienced 4-H'ers should keep a 4-H Livestock Record for Intermediate and Advanced Projects instead. If you have completed two years of another meat animal species (swine, sheep, or beef), fill out a 4-H Livestock Record for Intermediate and Advanced Projects.
 - The Knowledge and Skills Checklist found in your reference guide.
 - A record of your entire 4-H career. Your leader may ask you for this information if you want to be considered for some 4-H awards.

Do these things each year:

1. Plan with your parents and leaders what you will do for your project. Decide which skills you would like to learn and activities you would like to do. Write your goals in your 4-H project record book.
 2. Prepare a budget for your 4-H market goat project. (See Section 5.)
 2. Select and care for one or more market goat kids.
 3. Keep records of your goals, numbers of goats, things you do to feed and care for them, money you spend and receive, and your 4-H experiences. Write them in your 4-H project record.
 4. Participate in 4-H meetings and activities.
 5. Do at least six activities each year. Select six activities from the required lists each of the first two years. After the first two years, choose six activities from the lists of additional activities in this book. Have your leader or parent sign the checklist as you finish each activity. You may substitute other activities with your leader's permission.
 6. Turn in this reference manual and your project record to your leader by the due date for your club or county.

Required Market Goat Activities, years 1 and 2

Choose three the first year, and three the second year.

Things to Do	Date Done	Signature
Explain the meaning of these sex-related terms for goats: buck, doe, kid, and wether.		
Name and locate at least 10 of these body parts on a live goat or label the diagram in your book: loin, point of shoulder, wither, heart girth, toe, hock, tail, hoof, throat, poll, brisket, rump, ear, nostril, muzzle, dewlap, and jaw.		
Show and tell how you show a market goat.		
Lead your parents or leader on a tour of the place you will keep your market goat and point out the things you are doing to take care of your goats.		
Name three things that can cause goats to get sick and at least four signs to look for to recognize sick goats.		
Tell what the normal body temperature of goats is and show or tell the proper way to use a veterinary thermometer.		

Required Life Skill Activities, years 1 and 2

Choose three the first year, and three the second year.

Things to Do	Date Done	Signature
Know and recite the 4-H Pledge, the 4-H Club Motto, and colors.		
Plan what you will do for your project with your parents or leaders each year.		
Select a project doe or wether using your knowledge of parts and desirable types.		
Keep records of your goals, numbers of goats, things you did and accomplished with them, money spent and earned, and your 4-H activities in your 4-H project record book.		
Give a presentation on something you learned about market goats at a club meeting or your county presentation contest.		
Exhibit your animal or something you made for this project at your county roundup or fair.		

Additional Market Goat Activities, years 3 and beyond

Choose three of these activities each year after the first two years.

Things to Do	Date Done	Signature
Draw a picture of a sick goat. Label the signs of sickness.		
Make a world map and show where five or more breeds of goats were developed.		
Watch your goat chew its cud. Count how many times it brings its cud into its mouth in 15 minutes.		
Explain the differences between selecting a dairy goat and a market goat.		
Name at least four goat breeds that would make good market goats.		
Attend a goat show and record at least six breeds of goats you observed.		
Make a list of common faults found in market goats and tell how you could compensate for the weakness while showing the goat.		
Visit a goat auction. Observe which breeds and colors of goats bring the best price.		
Keep a diary of your goat's behavior and explain what you think each behavior means.		
Draw a diagram of a goat's carcass and label the different cuts you can get from a market goat.		
Discuss the differences between chevon and other red meats.		
Visit a large goat farm and observe and inquire about herd health practices. Compare their watering and feeding systems to yours.		
Attend a goat field day.		
Find 10 or more Web sites devoted to goats. Distribute the list of Web addresses to other club members. List the one you think is most useful.		
Make up a goat first aid kit. Explain why you included each item.		
Make a list of vaccinations your goat should have as a kid and explain the importance of each.		
Collect goat feed labels and categorize each ingredient as protein, energy, vitamin, mineral, or additive.		

<i>Things to Do</i>	<i>Date Done</i>	<i>Signature</i>
Visit a fair or show and listen to the judge give reasons for placing goats the way he or she did.		
Attend a fitting and showing clinic.		
Train and fit a market goat for show.		
Show a goat at a fair or roundup.		
List some structural defects or health problems to avoid when buying a goat.		
Write to a goat breed association for information about that breed. Write a report on the things you learned from the material.		
Ask your extension agent for a list of minerals that are deficient in your soils. Make a list of supplements you would need to add to your goat's diet to compensate for the deficiencies.		
Make a chart on when to vaccinate, disbud, worm, trim feet, etc. Give it to first-year members and teach them how to use the chart.		
Make a chevon cookbook by collecting recipes using chevon.		
Develop your own activities with your leader's permission.		

Additional Life Skills Activities, years 3 and beyond



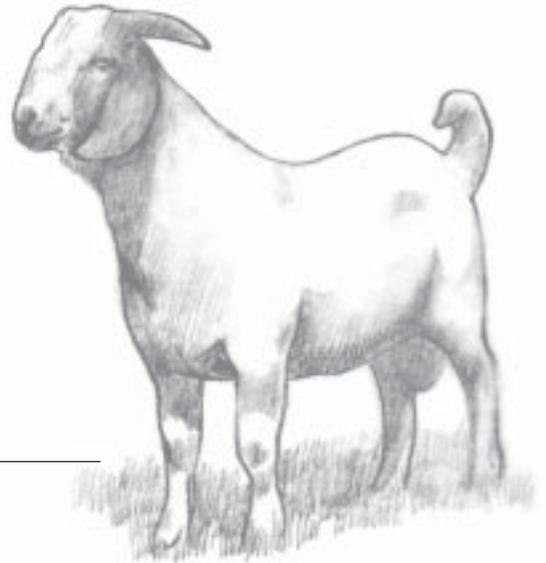
Choose three of these activities each year after the first two years.

<i>Things to Do</i>	<i>Date Done</i>	<i>Signature</i>
Lead the Pledge of Allegiance at a 4-H meeting.		
Lead the 4-H Pledge at a 4-H meeting.		
Lead a song or game at a 4-H meeting.		
Serve as a committee member.		
Serve as chairman of a committee.		
Serve as an officer of your club.		
Help plan or carry out a community service project.		
Help plan your club's yearly program.		
Help with a fund-raiser for 4-H.		
Help with a parents' night or club achievement program.		
Help with a 4-H event or activity.		
Give a committee or officer's report to your club.		

<i>Things to Do</i>	<i>Date Done</i>	<i>Signature</i>
Give a talk to your club about something you learned or did with your market goat project.		
Give a presentation or talk to a group other than your club.		
Act out a skit or pretend you are making a radio or television commercial about 4-H, goats, or chevon.		
Make a poster explaining market goats to display at the roundup.		
Help prepare a parade float to tell about goats or 4-H.		
Write a letter to someone you want to buy your market goat. Tell why he or she should buy your goat.		
Write a thank-you letter to a buyer of your goat or someone who helped you or your 4-H Club.		
Write a news story about your club or your project for a local paper or a 4-H newsletter.		
Bring a friend who is not a 4-H member to a 4-H meeting or activity to interest him or her in 4-H.		
Attend a 4-H camp or overnigher		
Participate in a skill-a-thon contest.		
Participate in a stock grower's contest.		
Help another 4-H'er with his or her project.		
Teach a goat skill to another 4-H member.		
Start a scrapbook of photos, newspaper clippings, ribbons, and other materials related to your 4-H experiences.		
Develop your own activity with your leader's approval.		



Background Information



There are some things you should know about goats before you get started.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Tell some of the history of goats.
2. List some factors to consider before purchasing a goat.
3. Explain the meaning of these terms: doe, buck, purebred, grade, crossbred, and wether.

Goats in General

There are several things that will be the same whether you are working with market, dairy, pleasure, fiber, or pack goats.

Goats have become a favorite species of livestock for economic reasons as well as emotional reasons. Watching a kid romp and play is relaxing and some people find a herd of goats very therapeutic. Goats tend to flock together in family groups. Goats will sort out a “pecking order,” and you will find those dominant goats ruling the feeder and pasture. Unlike sheep, goats will turn and face the threat when they feel threatened. They will make a characteristic sneezing noise to drive away an intruder. Goats are well known for “tasting” their environment.

Goat History

Goats have been around as part of daily life since written records were begun. Dogs were probably

the first wild animals to be domesticated, followed closely by the domestication of goats. Goats probably originated in India and parts of Asia. They are mentioned numerous times in the Bible and were an important element in the life of Biblical nations. Goats arrived in America when Columbus made his second voyage in 1493. He brought several milking goats. Goats were easy to keep on a ship and there are records of goats that traveled around the world on ships to provide the crew with fresh milk.

Goats can grow, give milk and meat, and reproduce under extreme conditions that would eliminate other species. They can live in hot, tropical climates as well as cool, temperate climates. They seem to be able to live and even flourish under desert conditions. These factors have made goats a very important domestic animal.

A variety of breeds are found today in the United States. The dairy breeds have come mostly from North Africa, Switzerland, and France. The meat breeds have come from North Africa, New Zealand, South Africa, and Spain. The American Dairy Goat Association (AGDA) was founded in 1964 to support people in raising dairy goats. AGDA keeps track of breed registries and provides critical information needed for producing dairy goats and keeping accurate records. The

American Meat Goat Association was formed in 1992 to promote and improve meat goats.

Goats will continue to be an important domestic animal as usable land acres decrease and natural resources become less abundant. Goats will quickly revert to being wild if left on their own and unattended. Cats may in fact be the only animal that will return to a feral state more quickly than goats. People use more milk and meat from goats today because goats have little effect on the environment, yet they can produce high-quality products on land that cannot support other livestock.

Factors to Consider When Raising Market Goats

Goats can be kept in a much smaller area than cattle or horses, and therefore they are popular among people who live in suburban areas with

1 or 2 acres of land. Before you purchase a goat of any kind, make sure your community's zoning does not have rules against housing farm animals. Make sure you check the definition of "livestock" in your area, because the definition may vary from one township to another. Consider your neighbors when planning to raise goats. Some goats have loud voices that carry for long distances. Like a barking dog, loud goats can be annoying to neighbors. If you do not live in an area where you can produce your own grain and have access to pasture, consider the cost of buying hay and grain. Will you have adequate space for your animals, and can you build shelter for them? Do you have an outlet for culls or animals you will need to sell? Good goat flock management begins before you get your first goat.

Typical goat pen with hay rack and mineral feeder



Words You Should Know

Buck or Billy: Intact male goat.

Doe: Female goat.

Doeling: Young female goat.

Wether: Male goat that has been surgically altered (castrated) so that he can no longer breed.

Kid: Young goat under six months of age.

Kidding: The act of giving birth in goats.

Lactation period: The time during which milk is produced.

Gestation period: The time a doe is pregnant, beginning with conception and ending when she kids.

Colostrum: The rich, first milk given by a doe at kidding. Rich in maternal antibodies, vitamins, minerals, and energy.

Purebred goat: A goat whose parents are both registered with the same breed association.

Crossbred goat: A goat resulting from mating a purebred doe of one breed to a purebred buck from another breed.

Grade goat: A goat resulting from mating of two crossbred goats.

Polled: An animal born without the potential to grow horns.

Yearling: An animal 12 to 24 months old and not in milk.

Suggested Activities

- Make a chart of the different names used for goats.
- Have members of your club answer roll call at a meeting with one name used for goats.
- Call your township or borough zoning office and see if they have a definition for “livestock” in your municipality
- Visit your local livestock auction and observe the goat sale. Record the prices and report back to your club.
- Explain the difference between market goat, dairy goat, fiber, and pack goat projects.

Extra Activities to Try

- Ask a local goat producer if the names they use for goats mean the same thing as the names you’ve learned.
- Explain why colostrum is important to a newborn kid

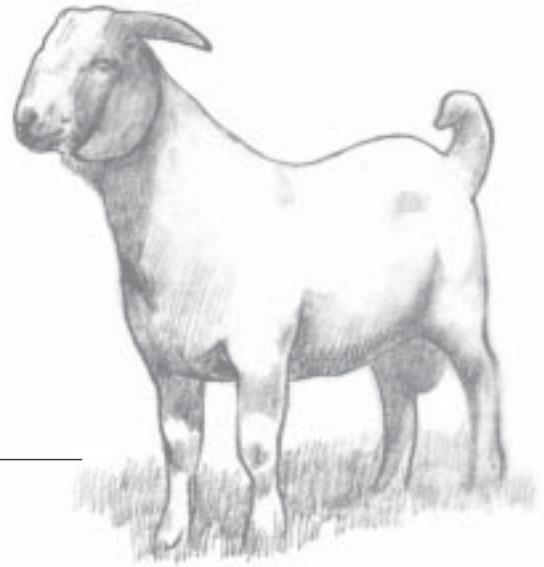
Ideas for Presentations and Talks

- The history of goat domestication
- Why raise goats
- The versatile goat

Things to Talk About

- How will you react when your project goat is sold for slaughter?
- How is the price set for market goats?

4

Breeds of Goats

Goats come in many types and colors. Goats that are alike in color patterns and body structure often belong to the same breed.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Name examples of some of the major goat breeds.
2. Identify at least six of the major breeds from looking at photos or from seeing live animals.
3. Identify and describe the important characteristics of your selected goat breed.
4. If your project animal is crossbred, name the breeds of the sire and dam and describe the traits that each of those breeds possess.
5. List some advantages crossbred goats have over purebred goats.

Goat Breeds

A breed is a group of genetically related animals that reliably passes on certain characteristics or traits to their offspring. Goat meat is produced from many goat breeds in the U.S. Some of these breeds have been genetically selected specifically for meat, while others were bred to produce milk. Some of the major breeds of goats and their characteristics are listed below.

MEAT BREEDS

South African Boer Goat: The Boer goat was developed in South Africa as a breed meant solely for meat production. Because of intense breeding over the past 50 years or more by South African goat breeders, the Boer goat is considered far superior to any other breed for meat production. These compact, muscular goats have a high growth rate, muscular carcass, good fertility, and functional conformation. Boer goats are white with red heads. They have pigmented skin and roman noses. Under good nutritional conditions, Boer goat crossbreds (especially with Nubians) produce outstanding weight gains and carcasses.

Nubian: This breed is used for both milk and meat production. They are a large, proud, graceful breed with roman noses and long, pendulous ears. They can be any color. Kids have a high growth rate and are generally fleshier than other dairy breeds. They are used to crossbreed in many operations because they can improve milk production and muscling.

Spanish Meat Goat: These smaller-bodied goats found mainly in Texas originally were used for clearing brush and pasture maintenance. Smaller, more agile goats are dominant in the wild. Body shape and size, ear shape, horns, hair, and color vary greatly due to climate, terrain, and available breeding stock. Because of the recent increased demand for goat meat

in the South, wild Spanish goats are being cross-bred with larger dairy and angora goats to produce a meatier animal.

Tennessee Meat Goat: These goats were developed from fainting goats (when startled their muscles lock up suddenly, and they fall over and lie stiff for a few seconds). A fainting goat averages between 17 and 25 inches in height, and weighs between 50 and 165 pounds. These goats come in a variety of colors and have very long ears that stand out to the side of the head. The constant stiffening and relaxing of the muscles may result in heavy rear leg muscling, tender meat, and a high meat-to-bone ratio. They are very calm animals and make excellent pets. They are herding animals, so they should be kept with at least two or three of their own kind.

Kiko: The Kiko is a meat breed that originated from large dairy males crossed with New Zealand based stock, which were then back-crossed to dairy males. They were selected for twinning, growth rate, and constitution.

DAIRY BREEDS

Alpine: This breed produces a large amount of milk and usually has big kids at birth. Alpines tend to get lean and leggy as they continue growing. They have short, erect ears and can show a number of color patterns.

LaMancha: This U.S. breed's most obvious trait are the tiny ear flaps that almost make them look like they don't have any ears at all. This medium-sized, good-tempered breed can be any color and has moderate muscling. The LaMancha is becoming a very popular breed to cross with a meat breed to produce a well-balanced, heavily muscled market goat.

Oberhasli: This small- to medium-sized breed is generally the lightest muscled of all dairy breeds. Oberhaslis have red bodies with black markings.

Saanen: This large-bodied white goat produces large amounts of milk and has moderate muscling.



Boer



Tennessee meat goat

Toggenburg: This heavy milking breed is medium-sized, sturdy, and vigorous. They have short, erect ears, a dished face, and a gray/white color pattern.

OTHER

Cashmere and angora goats were developed for fiber production. In the South, where there is a strong demand for goat meat, they are also being used for meat. However, these animals are lighter-muscled and have a lower dressing percentage than most other breeds.



Alpine



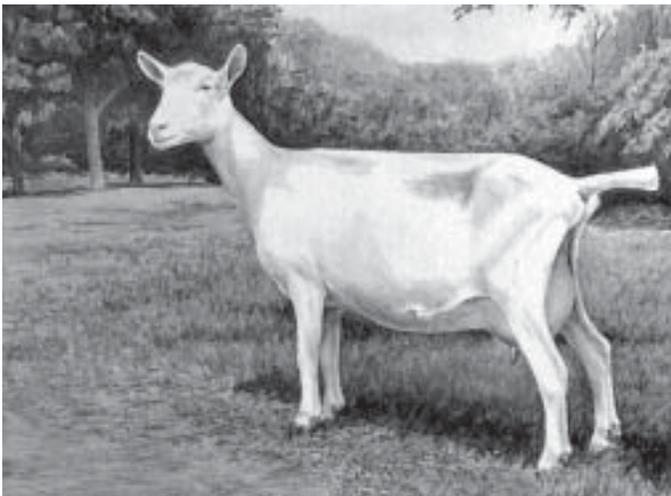
LaMancha



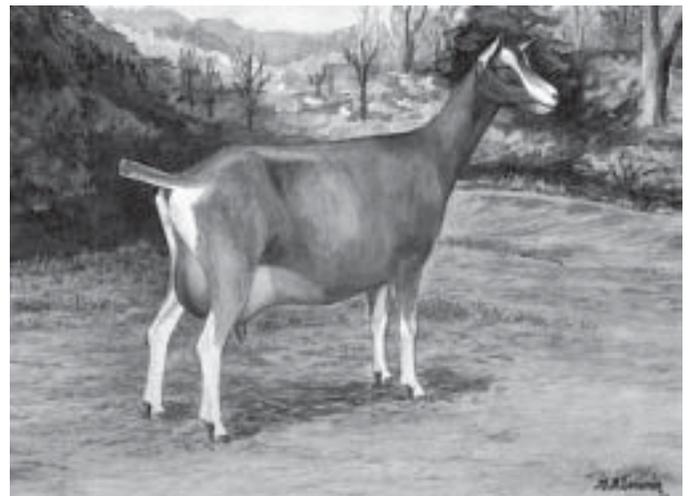
Nubian



Oberhasli



Saanen



Toggenburg

The breed pictures on this page appear courtesy of the American Dairy Goat Association, Spindale, NC.

Your Goat's Pedigree

A written record of the names of a kid's parents, grandparents, and other ancestors is called its pedigree. Some words you will see used on a pedigree, and their meanings, are listed below.

Sire: The kid's father.

Dam: The kid's mother.

Grandsire: The father of the sire or dam (the kid's grandfather).

Granddam: The mother of the sire or dam (the kid's grandmother).

Registration of Purebred Goats

Established breeds usually require both parents to be registered before their offspring can be registered. A registered animal has its name, herd and registration number, date of birth, pedigree, and name of owner and breeder recorded with

the breed registry association. A goat must meet all of the requirements of the breed registry association to be registered.

Breed registry associations issue registration certificates or papers to owners of registered goats. When a registered animal is bought or sold, the seller must send the registration certificate back to the breed association so ownership can be transferred to the new owner. If you buy a registered animal, make sure that the seller transfers the registration papers to you. If you plan to show the animal, make sure the ownership is transferred to you before the show's ownership deadline.

If you would like to find out more about a breed, you may write to the breed registry association for information. More information about breeds of goats can be found on the Internet at <http://www.ansi.okstate.edu/breeds/GOATS/>.

Crossbred market goat kids



Advantages of Crossbreeds

Crossbred goats have some advantages over purebred goats because of heterosis. Heterosis usually gives a crossbred an improvement over the average of its parent purebreds for a certain trait. For example, if the average daily gain of a purebred Boer goat was .4 pounds per day and the average of Nubian purebreds was .2 pound per day, we would expect the average daily gain of a Boer x Nubian crossbred to be .3 pounds per day. In reality, the average daily gain might be something closer to .35 pounds per day, which is higher than the average of the parent breeds. The improvement in the actual daily gain over the average of the parents is a result of heterosis.

Heterosis affects several important traits in goats. In addition to improvements in average daily gain, crossbred goats are usually more heavily muscled and resist disease better than purebreds.

Words You Should Know

Breed: A group of animals that often have the same color patterns and body structure because they share common ancestors that were selected for those characteristics.

Purebred: An animal with a high percentage (usually 7/8 or 15/16) of genes from a certain breed.

Crossbred: An animal with parents from different breeds.

Heterosis: The percentage improvement (usually) of a crossbred over the average of its purebred parents in certain traits.

Suggested Activities

- Answer the roll call at a meeting with the name of a goat breed.
- Look through magazines or on the Internet to find pictures of different breeds of goats.
- Make a poster or display with pictures of the major breeds. Describe the special uses and features of each breed pictured.
- Visit a fair or show and try to identify the different breeds that are there. For crossbred

goats, try to identify the breeds used in the cross.

- Write to the breed association to find out more about the breed of your project goat. Describe what is special about the breed you have chosen.
- Make a poster to promote or advertise your favorite goat breed.
- List some advantages (or disadvantages) of crossbreeds compared to purebreds.
- Explain why you think heterosis is important in the production of market animals.
- Contact a purebred breed association and collect information to share with your club members.

Extra Activities to Try

- Discuss with a goat producer which breed traits are important to a breeding program, and why they are important to a flock.
- Ask the manager or owner of a purebred goat flock why he or she raises a particular breed of goats.
- Examine the registration papers of a registered goat. Be able to name the sire and dam.
- Ask the owner of a commercial goat flock why certain breeds are used for crossbreeding.
- Make a chart on four or more purebred breeds of goats. Explain the differences between the breeds.
- Poll several local goat producers to find out what their favorite breed of goat is, and why.

Ideas for Presentations and Talks

- Make a poster with photos or drawings of the major breeds of goats, then use it to lead a discussion of the different characteristics of each breed.
- Describe the important characteristics of a certain breed of goat and tell why these characteristics are desirable.

Things to Talk About

- What are the major goat breeds raised for meat production?
- What are the characteristics associated with each goat breed?
- What is a crossbred goat?

5

Selecting Project Animals



The conformation and size of the goat kid you choose will affect the success of your project. Try to choose thrifty, high-quality, lean, muscular, and structurally correct goats. You don't need the most expensive animals to succeed.

Objectives

After studying these materials and completing the suggested activities, you should be able to:

1. Name the external parts of a goat and be able to point them out on a live goat or label them on a diagram.
2. Tell what to look for when choosing an animal for a market goat project.

Naming External Parts of the Goat

It's important to know the words used by goat producers. When you know and use the right words, other people who raise goats will be able to understand you.

The parts of a goat's body have special names. Learn the terms listed on the diagram on page 20. On a doe, you should also be able to identify the udder and vulva. On a buck, you should also be able to locate the scrotum and testes.

Things You Need to Know

Dairy goats are okay to use as a meat goat if they are crossbred with a meat breed. A purebred dairy goat usually can't compete with a meat breed animal. There are enormous differences within each of the dairy goat breeds for milk

yield, weight gain, and carcass quality. When selecting good meat goats, it is more important to evaluate the actual animal rather than to choose an animal based only on its breed. There are generally more differences within a breed than between breeds of goats.

Your task is to select an attractive, heavily muscled kid goat, then feed it so that it reaches an acceptable market weight and external fat thickness on the day of the show.

Selecting Your Meat Goat

When selecting a meat goat, the most important thing to consider is the health of the animal. When you begin your market project with a healthy animal, the potential for growth and profit are much greater. Some things to look for when selecting your market kid are:

- Is his hair coat smooth and shiny, or rough and dull?
- Does he seem alert and interested, or does he seem depressed and uninterested in what is going on around him?
- Are his gums and eyelids pink, or are they a pale white color?
- Is he breathing at a normal rate, or does he seem to be breathing rapidly before exercise?
- Are his toes together when he stands, or are they far apart when he walks?

- Are his eyes bright, or are they dull and watery?
- Is his nose warm and moist, or dry and hot?
- Is he moving freely, or does he seem to be stiff?
- Do his top and bottom teeth meet evenly, or does he have an overbite or underbite?
- Is he free of lumps and wounds, or does he have unexplained lumps?
- Are his droppings well formed, or does he have diarrhea?
- Is he standing with his back straight and his tail up, or is he hunchbacked with a droopy tail?

Look for an animal with the first set of qualities in each of the above questions.

When you have established the health status of your prospective project animal, you can begin looking for important physical characteristics. If your goat is still nursing, he should have a plump appearance, with a shiny coat. If the kid is about 10 weeks old, he should have a loin that is at least 6 inches long and should be filling out through the leg. He should have a muscular, rounded top line, not a sharp pointed top line like a dairy goat.

Deciding How Much to Pay

When you have answered all of the above questions, you need to think about the price you are willing to pay for a healthy animal. Some things to consider when negotiating price are:

- What breeding stock has he come from?
- Has he already been vaccinated for enterotoxemia (overeating disease)?
- Is it already disbudded (dehorned)?
- Is he castrated and healed?

These factors will add to your cost if they are not done before you buy your goat. If they are already done, you may be able to justify spending a little more money on your purchase.

Remember that goats are gregarious animals (they like to have other goats around), so you may want to buy two goats rather than just one. They will tend to eat better and grow faster when they are not lonely.

Most market goats are born with the potential to grow horns. Goats born without the potential to grow horns are called “polled” goats. Horns can be very dangerous to people as well as to other goats. If your club or county does not have a disbudding (dehorning) rule, you should consider disbudding your goat for safety reasons. If you choose to show your market goat with horns, cover the tip of the horn with a piece of rubber hose or similar material. This will protect you and other goats from the sharp point of the horn.

One last consideration is how adaptable your goat will be to moving from his birthplace to your home. A Spanish goat, for instance, may be more adaptable than a dairy-type Nubian meat goat.

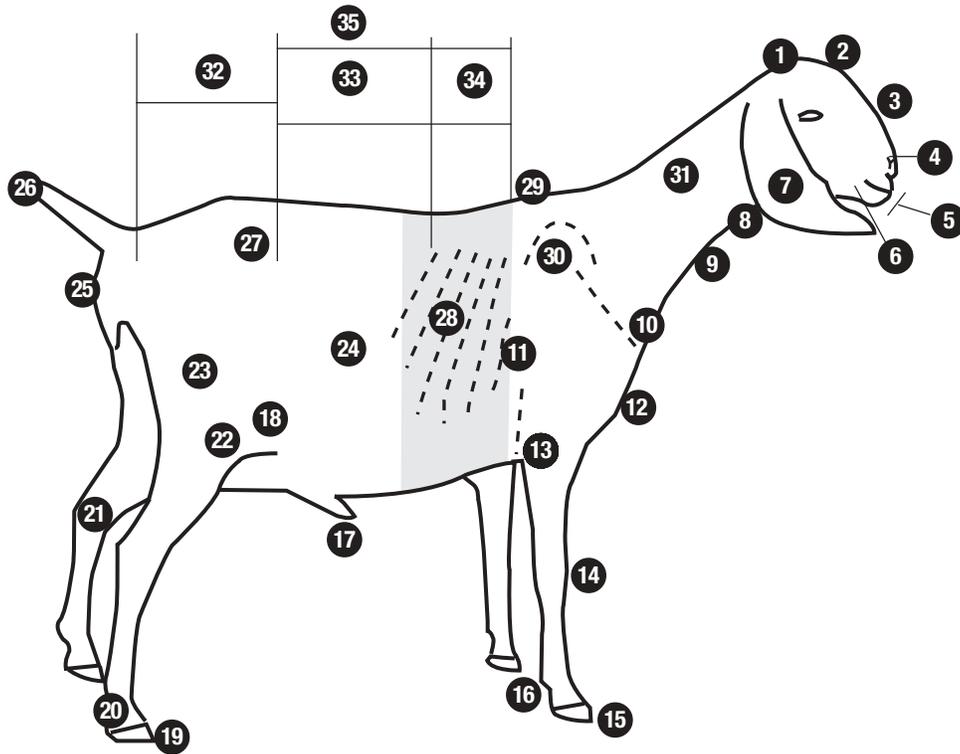
Check your goat kid's mouth—this goat has its baby teeth.



This goat has adult teeth.



PARTS OF A GOAT



- | | | | |
|----|-------------------|----|----------------|
| 1 | Poll | 19 | Hoof |
| 2 | Forehead | 20 | Pastern |
| 3 | Bridge of nose | 21 | Hock |
| 4 | Nostril | 22 | Thigh |
| 5 | Muzzle | 23 | Stifle |
| 6 | Jaw | 24 | Barrel |
| 7 | Ear | 25 | Pin bones |
| 8 | Throat | 26 | Tail |
| 9 | Dewlap | 27 | Hip |
| 10 | Point of shoulder | 28 | Ribs |
| 11 | Heart girth | 29 | Withers |
| 12 | Brisket | 30 | Shoulder blade |
| 13 | Point of elbow | 31 | Neck |
| 14 | Knee | 32 | Rump |
| 15 | Toe | 33 | Loin |
| 16 | Dewclaw | 34 | Chine |
| 17 | Sheath | 35 | Back |
| 18 | Flank | | |

Source: American Goat Society Judge's Training Manual

How Big Should My Kid Goat Be?

A healthy market goat, fed properly and properly cared for, should gain 2 to 3 pounds a week or 10 to 15 pounds a month. Weather can affect how fast goats gain weight. Goats may gain weight faster in cool weather and more slowly in hot, humid weather. When you purchase your goat, make sure you know when your show date is so you can calculate how much weight your goat should gain.

The beginning size of your goat will depend on the targeted market. Most market goats are sold to ethnic markets for specific holidays (see Table 1). Recommended weights for specific religious holidays are listed below. In general, finished market goats should weigh between 60 and 100 pounds.

Recommended live weights of goats:

Greek Market: 55–65 pounds

Roman Easter: 20–50 pounds

Christmas: 25–100 pounds

Muslim: 50–70 pounds for young animals, 110–115 pounds, lean for older goats

If, for example, you have 15 weeks between purchase date and show date, you can expect your goat to gain about 45 pounds (3 pounds per week x 15 weeks). If your targeted ending weight is 90 pounds, you should start with a goat kid weighing about 45 pounds (90 pounds – 45 pounds).

Halal Slaughter

The term Halal is a religious term that describes what food is “lawful” to eat according to the laws of Islam. Weights for Halal slaughter are typically higher than for other markets. Halal slaughter is very similar to the kosher slaughter used by people of the Jewish faith. Check local markets for desired weights for Halal slaughter.

Where Can I Buy a Goat?

Goats for 4-H projects can be bought from different places. Many 4-H members buy goats from farms of neighbors or other persons known to raise good-quality, healthy goats. Goat kids may

Table 1. Religious Holidays 2002–2005

Event	2002	2003	2004	2005
Christian				
Palm Sunday	March 24	April 13	April 4	March 20
Good Friday	March 29	April 18	April 9	March 25
Roman Easter	March 31	April 20	April 11	March 27
Orthodox Easter	May 5	April 27	April 11	March 29
Christmas	Dec. 25	Dec. 25	Dec. 25	Dec. 25
Orthodox Christmas	Jan. 7	Jan. 7	Jan. 7	Jan. 7
Judaism				
Passover (1 st Seder)	March 28	April 17	April 6	April 13
Passover (2 nd Seder)	March 29	April 18	April 7	April 14
Rosh Hashanah (Day 1)	Sept. 7	Sept. 27	Sept. 16	Oct. 4
Rosh Hashanah (Day 2)	Sept. 8	Sept. 28	Sept. 17	Oct. 5
Yom Kippur	Sept. 16	Oct. 6	Sept. 25	Oct. 13
Hanukkah	Nov. 30	Dec. 20	Dec. 9	Dec. 26
Islam				
Ramadan 30-day feast	Nov. 6	Oct. 27	Oct. 16	Oct. 4
Eid al Fitr	Dec. 6	Nov. 25	Nov. 14	Nov. 3
Eid al Adha	Feb. 23	Feb. 12	Feb. 1	Jan. 21

The Islamic dates are approximate and may change slightly with the sighting of the new moon. There are a variety of Web sites that will give you holiday dates well into 2020.

MARKET GOAT BUDGET

Receipts

Sell market goat	Weight () x cents per pound () = value	_____
Premiums		_____
<i>Total receipts</i>		_____

Expenses

Feed—grain	Pounds grain needed () x cost per pound () = grain cost	_____
Feed—hay	Pounds hay needed () x cost per pound () = hay cost	_____
<i>Total feed cost (hay plus grain cost)</i>		_____
Kid goat cost		_____
Bedding		_____
Veterinary cost (including vaccines and medications)		_____
Supplies		_____
Transportation		_____
Marketing costs		_____
Entry fees		_____
Interest on borrowed money		_____
Other		_____
<i>Total expenses</i>		_____
RECEIPTS MINUS EXPENSES = PROFIT (OR LOSS)		_____



also be bought at livestock sales. Look for kids from producers who have sold goats to other successful 4-H'ers. Try to buy kids from someone who can show you good records of the vaccinations, medications, and dewormers the goats have had before you buy them.

Farmers who feed and sell goats for a living need to get more money when they sell their goats than it costs to raise them to market weight, or they will lose money. If you pay too much for your goat kid or spend too much to feed and care for it, and do not get a high enough price when you sell it, you will lose money, too.

Before you purchase a goat kid, you need to fill out a budget for your entire project. A sample budget can be found on page 22. To decide how much you can afford to spend on a goat kid, first estimate what it will be worth when you will sell

it. Subtract what you think it will cost to pay for feed (see "How much will my goat eat?" to estimate how much feed will be required), veterinary care, supplies, transportation, bedding, marketing costs, entry fees, interest on borrowed money, and other costs. After subtracting these projected expenses, you'll know how much you can afford to pay for your goat kid.

Goats sold at 4-H auctions, especially champions, often sell for more money than goats sold at local sale barns. Most 4-H goats will not be champions, so don't expect a grand champion price when you make your plans for the year. Real-world prices for goats change from day to day, so it's a good idea to follow market reports in farm newspapers to find out what finished goats are worth. New Holland, Pennsylvania, goat market news can be found on the Internet at

Left: heavily muscled goat kid. Right: lightly muscled goat kid.



http://www.ams.usda.gov/mnreports/LN_LS142.txt. If you have access to previous years' average sale prices for market goats (not including champions) from your junior livestock sale, you could use that as a basis for estimating income.

Words You Should Know

Budget: An estimation of the expenses, receipts, and profitability of raising market goats.

Conformation: A general term describing the way the external parts of a goat are put together.

Feeding Period: The time from when you buy your goat until the show—generally 100 to 180 days

Finished: Market-weight goats with adequate back fat.

Suggested Activities

- Label the parts of a goat on a diagram or point them out on a live goat.
- Have members of your club answer roll call at a meeting with the name of a market goat part.
- Participate in a goat judging practice session, workshop, or contest.
- Select a goat kid using your knowledge of parts and desirable type.
- Visit a fair or show and listen to the goat judge give reasons for placing the market goats the way he or she did.
- Calculate how big your goat kid should be based on the dates of your show.

Extra Activities to Try

- Visit a goat auction.
- Look up the local market price of goats each week in a farm newspaper or other source of price information. Make a graph of market goat prices each week for several months before the fair or roundup.
- Check feed prices with a local feed supplier.

Ideas for Presentations and Talks

- Identifying the parts of goats
- What to look for when selecting goat kids
- What it costs to buy and raise a market goat

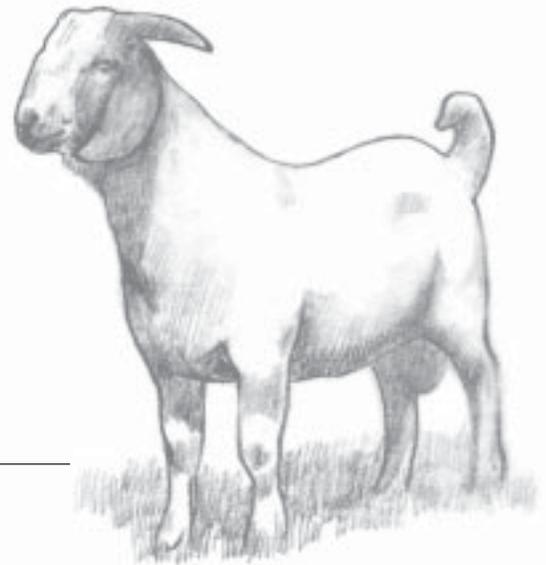
- When can you justify paying a little more for your market goat, why?

Things to Talk About

- What are the main parts of a goat's body?
- What factors should you look for when choosing kid goats for market projects?
- What is the normal weight of market goats when they are sold for slaughter?
- What factors influence how much weight your market goat will gain per day?

6

Caring for Your Goat



Taking proper care of your project goat will be a great learning experience for you. Your goat has many needs that must be met in order to live comfortably.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Outline the basics of goat care, including proper bedding and living conditions.
2. Give a parent or project leader a tour of the place where you keep your goats and point out what you are doing to take care of them.
3. Calculate the amount of feed required to finish a market goat.

Basic Needs of Market Goats

To grow and produce efficiently, goats need clean, comfortable housing, fresh air, clean water, and a good supply of feed.

Housing Your Market Goat

Market goats, like any market animal, need the basics of food, fresh air, shelter, and clean water in order to grow properly. The shelter for goats does not need to be costly, but it needs to provide shade and protection from drafts and inclement weather. Three-sided shelters work well in many areas. Greenhouses, shade structures, calf hutches, and large dog boxes can all provide adequate shelter for your market goat. You can

use shredded paper, straw, corn cobs, or shavings for bedding. Each market goat needs about 15 square feet of bedded area to be comfortable. Goats like to sleep “uphill,” so when you bed the shelter you can build a slight grade for the goats with your bedding. Cold, damp weather is the most harmful to your goat. Make sure the resting area is not damp and that it is kept clean. Young kids are more susceptible to drafts and dampness, so make sure their sleeping area is deeply bedded with no drafts and plenty of fresh air.

Shelter may be the easiest part of keeping a goat. The hardest part of keeping a goat may simply be keeping your goat inside the fence. It has been said that “if it won’t hold water, it won’t hold a goat.” This statement may be a little strong, but it has a certain truth to it. Goats often require a two-fence system consisting of an exterior fence (perimeter) and an interior fence (cross fence). The perimeter fence will keep your goat in and predators out. High-tensile fence is a good choice for a goat fence but may not be practical for a small market goat operation. Woven wire fences are popular, but they are expensive to construct. Board fences can be used for goats as long as the interior fence is electrified. Most goats must be taught to respect an electric fence. A panicked goat will run through a single-strand electric fence and never look back.

A permanent goat fence should have four strands of electric wire. The bottom strand should be no more than 6 inches off the ground. The next strand should be 12–14 inches off the ground, the third strand 18–22 inches off the ground, and the fourth strand 30–34 inches off the ground. Many goat owners will alternate the strands that are electrified in order to keep the goats from learning where they can escape.

If your market goat is a short-term project, you can probably use livestock fencing to build an exercise area for your goat. Panels should be 4–6 feet high. Stakes driven 1 1/2 feet into the ground are necessary to keep your goats from pushing over the fence. Remember, goats love to climb and will stand to the fence and lean to get what they want.

Keeping Your Goats Clean

Keep your goat's pen clean to reduce the chance of disease caused by filthy conditions and contaminated feed and water. You probably will need to remove the manure from your goat's pen daily to keep it clean.

If confined to a small pen that is not cleaned regularly, goats will accumulate manure in their hair coat—particularly on their rear legs. Bedding materials such as straw will help keep manure from accumulating. If your goat has manure attached to its hair, your pen isn't being cleaned often enough or you aren't using enough bedding.

Goat manure contains nitrogen, phosphorus, and potassium. All three of these nutrients are necessary to make plants grow. If you have a garden, you can use the manure your goat produces instead of buying commercial fertilizer. In fact, large-scale livestock feeders are required to have a certified plan that indicates where their manure will be spread so that the nutrients in the manure match the nutrient needs of plants.

Some places have laws controlling what you can do with manure, so find out if there are special rules you must follow where you keep your goats.



Good goat housing is a three-sided shelter to keep out drafts. Goat fencing can be reinforced to keep the goats from getting their heads stuck.

A Goat's Digestive System

Goats are “ruminants.” This means that they have a stomach with four compartments and they chew their cud to help digest their feed. This four-compartment stomach allows goats to be able to eat and digest roughage such as grass, hay, and silage. (They don't really eat tin cans and plastic!)

Here is a very simple explanation of how the four-part ruminant stomach works. The first compartment is called the rumen. The rumen is the largest of the four compartments, and it acts as a big fermentation vat. Bacteria begin the process of breaking down feed in the rumen, and as a result produce gas. Some of the gas is absorbed by the rumen lining in the form of volatile fatty acids. Other gasses, such as methane, are not absorbed as easily. If a goat cannot burp up some of the methane, he may bloat and his rumen will swell. You will need to treat your goat immediately if this happens (see Section 8).

The reticulum is the second compartment. In the reticulum, the small particles from the cud go through further digestion. If a goat eats a hard, indigestible object, like a nail or a piece of glass, it

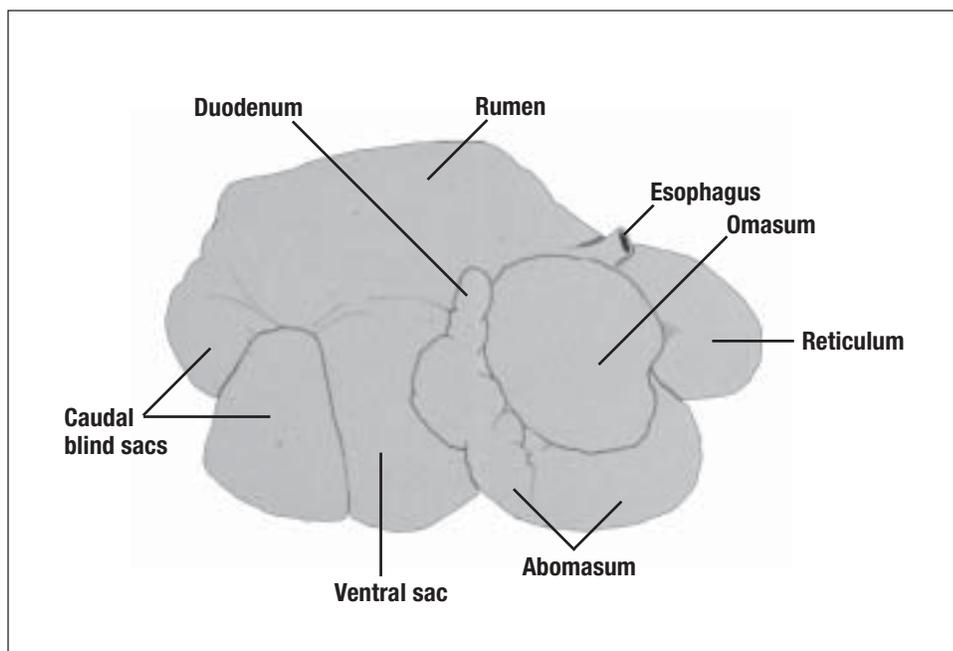
may become lodged in the reticulum. This may cause a condition called “hardware disease,” in which hardware lodged in the reticulum perforates the gut and causes an infection.

The third compartment of the ruminant stomach is the omasum. The omasum removes much of the water from feed particles, leaving drier particles for further digestion.

The fourth and final compartment is the abomasum. The abomasum is called the “true stomach” because it is the most like our own stomachs in the way it digests feed. In the abomasum, hydrochloric acid is added to the food in order to break down proteins.

When a kid is born, the first three stomach compartments are small and don't do very much. As the kid nurses, the milk flows through a groove called the esophageal groove directly into the abomasum. As the kid grows and starts to nibble on roughage, the rumen, reticulum, and omasum begin to enlarge. Rumen function should be in full swing by the time a kid is weaned at six to nine weeks of age.

THE RUMEN



Feeding Your Goat

The feeds you will feed your goat can be put into two major groups, roughage and concentrates.

Roughage is high in fiber and necessary to keep the goat's digestive system healthy. Some examples of roughage include grass, browse, silage, and dry forages. Forages come from the vegetative portions of a plant and tend to be low in energy.

Concentrates are the second group of feeds. Concentrates are low in fiber but high in energy and/or protein. Examples of concentrates include corn, oats, soybeans, wheat, and brewers' grain. Energy feeds are those concentrates that have less than 20 percent protein and less than 18 percent fiber. Some examples of energy concentrates include flour mill by-products, some grains, and certain root crops. Protein concentrates contain at least 20 percent crude protein and are often also high in energy. They can be of plant or animal origin. Some examples include dried whey, soybean meal, cottonseed meal, and buckwheat middling.

Vitamins and minerals are also important in a proper goat diet. Perhaps the most important nutrient is water. Goats find water in various places, some of which may include dew on the grass, some succulent plants, and lush, leafy grass. Even if your goats have access to these



Mineral feeders should have a cover to keep water out.

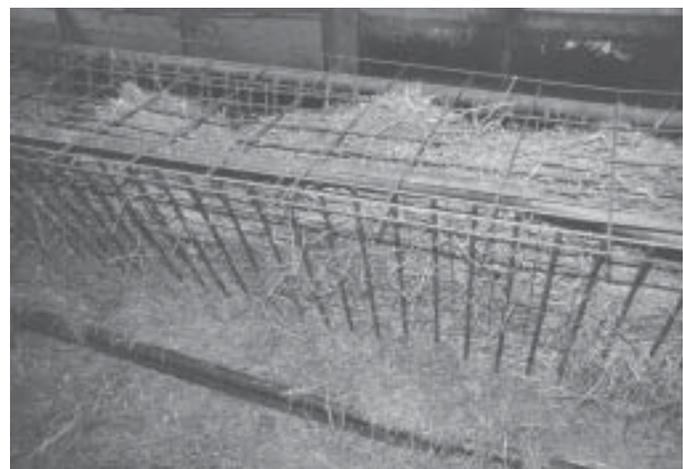
Table 2. Sample rations with three different protein levels.

Ingredients (lbs per ton of feed)	14% protein	16% protein	18% protein
Corn	1,035	949	865
Soybean meal	112	170	265
Alfalfa pellets	130	170	130
Cottonseed meal	110	110	160
Wheat Midds	190	170	160
Oats	160	170	160
Molasses	100	100	160
2 to 1 Mineral	50	50	50
Yeast culture	50	50	50
Trace Mineral Salt	35	34	35
Limestone	20	20	18
Vitamins A,D,E	8	7	7
Totals	2,000	2,000	2,000
% TDN	75	75	75
% Calcium	1.2	1.2	1.2
% Phosphorus	.7	.7	.7

To make a 500-pound mix, divide numbers by 4.

water sources, they should still have access to plenty of cool, clean, fresh water at all times.

Goats need a variety of vitamins and minerals in their diet. Some of the essential vitamins are A, B, C, D, E, and K. The minerals that goats need are calcium, phosphorous, sodium, potassium,



Hay racks should be covered to keep goats from soiling the hay.

iodine, sulfur, magnesium, selenium, zinc, and trace amounts of copper. Copper is the one mineral that must be closely watched when feeding goats. There is currently much disagreement over how much copper a goat needs. Be cautious when feeding supplements that contain copper. If your goats appear to have an adverse reaction to copper, discontinue its use. Many soils have enough copper present that no additional copper is needed.

Table 2 gives three sample rations with three different levels of protein available. Younger, smaller goats may require an 18 percent protein feed, while goats approaching market weight may need only a 16 percent crude protein ration. Commercial and breeding goat producers may use a 14 percent ration at times. The rations are calculated for a ton batch of feed. If you are only feeding one or two goats, you will probably find it more economical to buy your feed at a feed mill rather than mix your own. You still can use these rations as a guide when deciding what ration you want to feed. If you want, you may add Rumensin or Bovatec to the feed as a growth promotant. Both feed additives also help control coccidiosis. If Bovatec or Rumensin are not fed, Deccox or Decoquate may be added as a coccidiostat. Ammonium chloride can be added to help prevent urinary calculi (stones), a condition wethers may experience.



Feeders should allow the goat to eat but not climb in the feeder.



Typical goat ration of corn, oats, and soy.

Each goat needs to have about 1 linear foot of feed trough space, and some control must be used to keep the “boss” goats from eating the grain of the more timid goats. Always weigh the feed—don’t guess how much you are feeding, you may be surprised. Keep all feed and water dispensers and troughs clean.

How Much Feed Will My Goat Eat?

The eating habits of goats are like those of people. Some eat a lot, and some not so much. Also, the bigger they are, the more they should eat.

Over the entire feeding period, goats will eat an average of 2.0 pounds of grain per day, plus hay or other forage. However, they usually consume less feed early in the feeding period and more as they approach market weight. Changes in the amount and kind of concentrate you feed them should be made gradually over a period of several days.

It is important to bring goats up to maximum feed intake gradually. Most goat owners choose to feed their goats 1/2 of the total daily ration in the morning and the other half in the evening. The maximum intake for most goats is 2.0 to 3.0 pounds of concentrate each day. The remainder of their total daily intake will be made up of high-quality hay, silage, pasture, or perhaps your rose bushes and young trees. Remember, goats are browsers. Their instinct tells them to stand on their hind legs and eat tree limbs, tree bark, and a

large variety of other tree-like material. You should always feed the concentrate and any supplement first. Give the goats time to clean up the concentrate before feeding the hay or other roughage. If your goats do not clean up the concentrate at a feeding, slightly reduce the amount fed at the next feeding. This will prevent overeating and also will save you the cost involved with throwing away grain.

You need to be able to calculate the total amount of feed each goat will eat between the time you buy it until the time you sell it. This calculation is simple. First, you need to know the amount of weight you expect your goat to gain. This will depend on your goat's starting weight and how many days there are from purchase to show day. Let's say 300 pounds of feed (2.5 lb per

day x 129 days). Most meat goats will gain .2 to .5 pounds per day. How much weight your goat gains per day and how well it converts feed to meat is affected by genetics, environment, the type of concentrate you use, and your goat's personality.

You can also use feed intake to control your goat's weight gain. For instance, if you bought a goat that was heavier than it should have been, you could reduce the amount of grain so that your goat gains less per day. When your goat gets back on track, you could resume normal feeding.

Monitoring Your Goat's Progress

You should also monitor your goat's weight with a set of scales at two-week intervals throughout the entire feeding period to make sure your goat



is growing at the correct rate. Increase the amount of grain fed and/or the energy level of the ration if your goat is growing too slowly. Decrease the amount of grain fed or the energy level of the ration if your goat is growing too fast.

To make sure you arrive at the show with a properly finished goat, have your leader or another qualified adult check your goat about 30 days before the show. That person can help you alter the ration or amount of grain fed to make sure your goat is finished correctly.

Exercise

Daily exercise helps keep people healthy and builds muscle. The same is true for goats. You should exercise your goat frequently to help it develop muscle volume and tone. Some 4-H'ers walk their goats a mile or two each day. Others may set up a "jungle gym" type playground for their goats to exercise on.

Suggested Activities

- Visit a commercial goat producer and learn about the feeding and watering system. Also observe how the owner keeps the goats comfortable.
- Plot on a graph how much feed your goat eats each day.
- Lead your parent or project leader on a tour of the place where you keep your goat. Point out the things you are doing to make your goat comfortable. Show that each of the following are taken care of:

- _____ Is there plenty of feed?
- _____ Is the goat being fed properly?
- _____ Is the water plentiful and clean?
- _____ Is the goat comfortable?
- _____ Is the pen clean?
- _____ Is there enough fresh air?
- _____ Is it too cold or too hot?
- _____ Are records being kept?

- Weigh your goat every 2 weeks and make a graph of his/her weight gain.
- Visit someone who raises another species of

market animal. Ask them how they measure "finish" on their animals. How does that compare to the way you will measure "finish" on your market goat?

- Visit a local feed mill and ask what the difference is between whole, crimped, steam flaked, cracked, and ground corn. Which do you think your goat would like the most? Why?
- Find a book on livestock or goat nutrition, or visit your extension office to find the protein content for at least five feed ingredients.

Extra Activities to Try

- Collect samples of ingredients typically used in goat rations so you can learn to identify them. Discuss with your leader or parent what each ingredient contributes to the ration.
- Look at a tag from a commercial sheep or goat feed. Name the main ingredients and tell how much protein is in the feed.
- Visit a feed supply store and examine at least 10 feed tags on different species' feed. List the ingredients added to the feed as either a medication or growth stimulant.

Ideas for Presentations and Speeches

- How I take care of my goat
- My goat's basic needs
- Goat facilities and equipment

Things to Talk About

- What do you need to do to take care of your goat?
- How do you know if your goat is too cold or too warm?
- Why should you keep records of the feed your goat eats?

7 Observing Goat Behavior



Goats can show you whether they are sick or healthy by the way they act, the sounds they make, and by the consistency of their manure. Learn to watch and listen to your goats because they can show you when they are okay and when they need you to do something for them.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Describe the normal behavior of a goat.
2. Recognize whether your goat is behaving normally when you watch and listen to it.
3. Compare normal behavior of goats with behavior of other animals.

Goat Behavior

Before we talk about what kind of things can make a goat sick you will need to know what a normal goat looks and acts like. Goats are gregarious animals. That means they like to be in a group. When you observe a herd of goats, you may notice one or two that have wandered off, but when the group starts to move, those stragglers will soon join the group. Grazing goats will often be seen standing on their hind legs in order to eat tree leaves. Goats can easily kill young trees if allowed access to them. They eat the leaves and then, out of boredom rather than for nutritional value, they will strip the bark from a tree.

The notion that goats will eat anything is not true; however goats will *taste* just about anything.

Goats seem to have a high tolerance for bitter materials and as a result will eat things that other animals would show no interest in. Many bitter plants are toxic to goats, so caution should be taken when turning goats out to pasture. Ask your extension agent or leader for a list of toxic plants. Remember, goats may have a very long reach when standing on the fence.

Goats are very affectionate and will stand for hours if you are willing to rub their ears, back, or belly. If your goat is large, be careful when you stop petting him—he may not be done with the session just because you are. Some goats will simply follow you out of the pasture, while others will butt you with their heads in an effort to get you to continue to pet them.

Goats are excellent climbers. They will jump up onto and walk on very narrow pipes, ledges, board fences, and any other material that allows them to be up high. You may often see goats standing on top of their shelter instead of in it. Most goats are very curious and will climb in an effort to see what is going on. Remember this fact when you are feeding or caring for your goat. Your back and the board fence can both be great places to stand.

You may notice your goat “ruminating” or “chewing its cud.” When goats eat forages, they simply swallow large pieces. Later they will



regurgitate a bolus for chewing, then re-swallow the chewed plant material.

Also learn to recognize general signs that your goat isn't feeling well by observing its behavior. Goats that are sluggish, lack energy, or don't eat may have health problems. See Section 8 for more information on signs of sick goats.

Words You Should Know

Ethology: The study of animal behavior.

Bolus: Name for the forage that is regurgitated for rumination. Also called "cud."

Regurgitation: Process of bringing a bolus of previously consumed forage back to the mouth for chewing.

Ruminating: Process of chewing previously eaten forages.



Typical goat behavior includes climbing and jumping.

Suggested Activities

- Spend time observing goats as they eat and sleep. Point out the different behaviors you see to your parent or leader.
- Attend a goat show and observe the behavior of the animals.
- Observe other farm animals or house pets and compare their actions to those of a goat.
- Watch your goat for 30 minutes. How many times does your goat bring up a bolus to re-chew? How long does it chew each bolus before it swallows it?

Ideas for Presentations and Speeches

- Why goats climb.
- How to tell if your goat is acting normally.
- Explain how caring for your goat is similar to caring for a dog or cat. Explain how it is different.

Things to Talk About

- How does a goat usually act during a typical day?
- What should you do if your goats act as if something is wrong?
- If your goat does not act like your friend's goat, does it mean your goat is sick? Why or why not?





Keeping Goats Healthy



The success of any livestock operation depends upon the health of the animals. Healthy, well-managed goats will grow and produce efficiently. Disease in a goat herd can be costly, and can quickly destroy a herd.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Identify signs of a healthy goat.
2. List four or more signs of a sick goat.
3. List ways to keep a goat healthy.
4. Name the three main things that make goats sick.
5. Show and tell how to use a veterinary thermometer.

What Makes Goats Sick

When you observe your goat each day, you will learn how he acts and reacts to the world around him. Knowing his normal behavior can help you detect abnormal behavior and perhaps sickness. There are four things that you should check when you think your goat may be ill. If you need to call a veterinarian, these simple facts can help him diagnose your goat's problem. The four vital signs you should be familiar with are temperature, heart rate, respiration rate, and rumen movement.

If your goat appears sick, you should take your goat's rectal temperature. The normal

temperature for a goat is 102–103 degrees F. Kids may have a slightly higher temperature and still be normal. There are several factors other than sickness that may affect your goat's temperature. If he has been running, if the outside temperature is hot and humid, or if he has a thick coat of long hair, his temperature may be elevated. To take a goat's temperature you will need a rectal thermometer or a livestock thermometer. Shake the thermometer down with a few sharp but gentle shakes. Place a little Vaseline or obstetrical lubricant on the end of the thermometer so that it does not irritate the goat's skin. Grasp the tail and lift gently to expose the anal opening. Gently insert the thermometer into the opening and hold it there for 3 minutes. **DO NOT** place the thermometer into the goat and walk away without clipping it to the goat in some fashion. You may return to find your thermometer inside your goat.

Heart rate or pulse can be measured in a goat by placing your fingers on either side of his rib cage, close to the elbow, and feeling for his pulse. You can also measure his pulse by placing your hand on the inside, upper part of his thigh and finding the femoral artery. Once you have located his pulse, count how many pulses you feel in 1 minute. The normal heart rate for a goat should be 70–80 beats per minutes.

Respiration rate is the number of breaths a goat takes in a minute. You can watch your goat breathe in and out and count how many times he breathes in a minute. The normal respiration rate for a mature goat is 12–15 breaths per minute.

Rumen movement can be felt by gently placing your fist onto the left flank of your goat. If your goat seems to be hurt by this gentle pressure, or if his rumen feels very tight or very slushy, he has a health problem and you should consult a veterinarian or a leader. In a normal goat, you should be able to feel movement in the rumen 1–2 times a minute. Remember, when doing this, you must be gentle.

The following chart should be helpful when you are taking the vital signs for your goat.

Vital Sign	Range	Normal
Temperature	101.3–103.3°F	102.3°F
Respiration	12–15 breaths/min at rest	14 breaths/min at rest
Heart rate	70–80 beats/minute	75 beats/minute
Rumen function	1–2 times per minute	1–2 times/minute

Common Health Problems and Diseases of Goats

Some people have said that a sick goat is a dead goat. That statement was made by someone who did not observe his goats each day for signs of abnormal behavior. Many goat health problems are treatable with good results if detected early enough. This section does not attempt to cover all of the health problems your goat may have. We will cover briefly some of the more common problems that affect goats. If you have more questions, refer to the Internet sites listed in the resource section, call your extension office or your local veterinarian. Any treatment this section refers to should not be construed as an endorsement of that product; it is merely the drug or treatment that has been effective in the past. Always read the label on drugs or other treatments before using them on your goat, and follow the directions.

DIARRHEA

Diarrhea in goats can be caused by a variety of things, but one of the most common causes is **Coccidia**. The signs of coccidial infection are loose, watery diarrhea smeared with blood, loss of body condition, failure to grow, and general frailness. In some cases, coccidiosis may cause a kid to die for no apparent reasons without showing any of these signs. You can control coccidia infection by keeping your pens clean and dry. Adult goats shed the coccidia and infect the kids that share the area. If you are raising your own kids, do not try to keep them all in one or two big pens. The infection rate is much higher when goats are grouped together. You can order feed containing a coccidiostat. Some commonly used coccidiostats are Monensin (Rumensin), Lasalocid (Bovatec), Deccox (Decoquinat), and Amprolium (Corid). You can not eliminate coccidiosis, but you can control it with good management. *E. coli* is another bacterium that will cause your goat to have diarrhea. *E. coli* scours will often be more pale and watery in appearance and need to be treated with antibiotics as soon as possible. Dehydration due to severe diarrhea may kill a goat in less than 24 hours.



Proper technique for taking a goat's rectal temperature.

INTERNAL PARASITES (WORMS)

Worming your goat should be a regular part of your management plan. Goats, by nature, will tend to pick up parasites while they graze and go about their daily routines. The best way to know if your goat has worms is to look at the feces. Sometimes you can see the worms without the help of a microscope. If you suspect your goat has a severe worm problem, collect a sample of fresh goat manure and take it to your veterinarian. The vet will be able to identify the worms you are dealing with and give you a list of dewormers to use. You get the best results from your dewormer if you rotate brands after using one brand for two or three doses. How often you deworm your goat will depend on your management as well as how much pen space your goat has. Goats in tight confinement systems will need to be dewormed more often than goats that can rotate through different pastures. Some commonly used commercial goat deworming products are Thiabendazole (TBZ), Levamisole (Tramisol), Fenbendazole (Safeguard, Panacur), Ivermectin (Ivomec—use the cattle or sheep product; avoid the Ivomec Plus), and Albendazole (Valbazen). Goats have a different metabolism than other livestock species, so you should administer 50 percent more dewormer per 100 pounds of body weight than would be recommended for other species.

FOOT ROT

This is one health problem you may be able to smell before you see. Foot rot is caused by a bacterial infection of the soft hoof tissue. It causes lameness, followed by swelling of the foot and flesh above the foot. There will be a smelly, gray, cheesy discharge coming from the foot and it will be very tender. Foot rot can be prevented by keeping pens clean and dry. Keep your goats' feet trimmed so that bacteria can not collect in folded hoof material. You can treat foot rot by cutting away the dead hoof tissue and then soaking the foot in a solution using copper sulfate (1/2 pound per gallon of water) for 1 to 2 minutes per foot.

CASEOUS LYMPHADENITIS

This disease is caused by bacteria that can live in the soil for a very long time. Until recently it was believed that the disease could only be contracted by an open wound coming in contact with the open pustule of the infected animal. It has now been found that the bacteria can enter the animal through an open wound exposed to the bacteria on wood, in soil, or in a variety of other barnyard situations. The disease produces small abscesses just under the skin around the jaw, shoulder, or sometimes in the flank area. The abscesses grow and eventually open, exposing other animals to the bacteria. The abscesses appear to be painless, but are filled with a thick, foul-smelling pus. Caseous lymphadenitis is a lymphatic disease. That means it travels along the system of lymph glands located throughout the body. This makes it very hard to treat. It has responded to penicillin in many cases, but because it can be controlled in one lymph gland and then move on to another gland and reoccur, it is usually thought to be untreatable. Most slaughter plants will condemn a carcass that shows abscesses; therefore, this disease can be very costly to a market goat producer.

PNEUMONIA

Pneumonia can be caused by either a virus or bacteria. The goat will usually develop a cough and have a discharge from the eyes and nose, fever, lack of appetite, and increased respiration rate (rapid breathing or "pumping"). Most pneumonia occurs when animals are exposed to drafts and damp stalls. There is a difference between good ventilation and a cold draft. Your barn does not need to be closed up tight in the winter, but you need to make sure the air can move into the barn, and be heated by warmer air before it reaches your goat. Most pneumonia will not kill your animal if treated quickly with antibiotics. However, pneumonia can be a deadly disease if it is not treated, or if the conditions that caused it are allowed to continue.

BLOAT

Bloat occurs when excess gas forms in the rumen. If your goat is bloated, its left (rumen) side will look like a balloon. Your goat will be in pain and may grunt, slobber, cry, and kick at its stomach. If you have never treated bloat, it is best to call a veterinarian. The vet will relieve the gas pressure by using anti-ferments and perhaps a stomach tube. The best way to prevent bloat is to make sure you limit your goat's consumption of new grass or legumes (alfalfa, peas).

PINKEYE

Pinkeye usually occurs when it is hot and windy or during times of high face fly infestation. Dusty hay fed from an overhead bag or a high manger will cause dust to fall into your goat's eyes and may contribute to the disease. Your goat's eye will water and may cloud over. The conjunctiva (white part) of the eye will turn pink or even bright red. Pinkeye is very contagious, and goats with pinkeye can infect people. Pinkeye is usually treated with an eye ointment or spray that contains a broad-spectrum antibiotic. Antibiotics can be obtained from your veterinarian. Always wear gloves and be sure to wash your hands after you have treated a goat that has pinkeye.

ENTEROTOXEMIA

This disease is often referred to as the "overeating disease." In most cases it occurs when a young goat begins to eat concentrate well and takes in more energy and protein than its system can handle. It is caused by a bacteria called *Clostridium perfringens* (types C and D). Enterotoxemia should be suspected any time an animal dies suddenly for no obvious reason. Common symptoms of "overeating" are depression, lack of coordination, and sudden, unexplained death. The best prevention for this disease is to vaccinate the kids. Another important management technique that can prevent "overeating" is to make any changes in the goat's diet over a period of time. This gradual change allows the goat's digestive system to adapt, rather than react violently. It is a good practice to make any feed or



To check rumen function, gently place your hand or fist behind the last rib and check for movement or a clenching motion.

management changes over a 10-day period to reduce stress for the goat.

POISONING

We know now that goats will not eat everything they come in contact with; however, they may taste it. In some cases, a taste of a poisonous plant or chemical may be all it takes to kill your goat. In years of drought, when your goats have eaten all of the plants they normally eat, they may begin to eat plants that they normally would not touch. Some of these plants, like water hemlock, will kill a goat almost immediately. Some poisons will only cause your goat to act strange or froth at the mouth. Some may cause diarrhea. There are antitoxins available on the market but you will need to ask your veterinarian for a recommendation. The best prevention for poisoning is to keep poisonous plants away from the pasture. Remember, goats have a great reach, so keep poisonous plants out of the area. Some of the most deadly plants to goats are used as ornamentals in landscape plantings. Make sure you know what your goat is able to reach at all times.

SORE MOUTH

This is a common viral disease in sheep and goats and can be transmitted to humans. Sore mouth

virus particles can survive conditions normally fatal to most viruses. For example, this virus has been known to live in wood (such as the wood in a wooden feed trough) for 12 years. Symptoms of the disease are small blisters on the lips and gums. These blisters break open and become scabby lesions on top of an inflamed area. This painful disease can be fatal to small kids. Kids may refuse to nurse, and if they do nurse they may infect the doe's udder. If sore mouth occurs in a fairly healthy adult goat flock with no kids, it is usually a mild disease. When kids are present, the disease can be severe. The best prevention is vaccination. When vaccinating for sore mouth, take great care not to scratch your skin with the vaccine. The vaccine does not completely eliminate the occurrence of sore mouth, but it can shorten the duration of the outbreak. Animals

with sore mouth cannot participate in shows. Be very careful and wear gloves when handling goats with sore mouth!

Routine Vaccinations for Young Market Goats

1. *Clostridium perfringens* C and D
2. Covexin 8
3. Tetanus (can be included in the *Clostridium perfringens* C and D—*read* the label)
4. Caseous D-T Lymphadenitis

You may not use all of these vaccinations because some, like Covexin, contain the CDT vaccine. Visit with your veterinarian to decide what vaccination program is appropriate for your area.

Biosecurity

In addition to the health problems listed above, it is important to know that goats can get many

Toggenburg doe



other diseases. Such diseases may be contagious and passed from goat to goat and from flock to flock. Therefore, to maintain “biosecurity” (a disease-free environment), you should do the following:

- Isolate new animals for at least 14 days after bringing them home.
- Place a foot bath with disinfectant at the entrance to your barn, or wear disposable boots.
- Avoid wearing the same clothes from farm to farm.

The most important thing to do to keep your goat healthy is to keep the goat and the pen clean. Also, make sure the goat is well fed, comfortable, and eating and drinking normally. Get help from an adult if you think your goat is sick.

Words You Should Know

Ruminant: An animal such as a goat that has a stomach with multiple compartments allowing it to digest forages.

Parasite: A living being that lives and gets its food in or on another living being, called a host.

External parasites: Those parasites causing problems on the outside of the goat, such as lice and mange.

Internal parasites: Those parasites causing problems on the inside of the goat, such as worms.

Biosecurity: Practices to keep your goats from catching diseases from other goats, people, or the environment.

Suggested Activities

- Name the three main things that cause goats to get sick.
- Describe at least four signs to look for to recognize a sick goat.
- Show or tell the proper way to use a livestock thermometer to measure a goat’s temperature.
- Keep a journal or barn chart about your goat’s health.

- Find out what veterinary examinations and documents are needed to show a goat at a state show, such as The Pennsylvania Farm Show.
- Visit a large animal veterinarian in your area and ask them what goat health problems they treat most often.

Extra Activities to Try

- Observe your goat’s behavior to see if it is eating and drinking and breathing properly.
- Observe your goat’s urine and feces to see if it looks normal.
- Have your parent or project leader check to see if the ventilation in your goat’s pen is okay.
- Check your goat’s hooves and mouth for signs of disease.
- Visit a local veterinarian. Ask to see internal parasites under a microscope.
- Deworm your goat shortly after you buy it (if it was not wormed previously), and on a regular basis.
- Set up a health plan for your goats.

Ideas for Presentations and Speeches

- The normal goat
- Health problems that goats can have
- How to keep a goat healthy and happy
- Parasites and how to control them
- Biosecurity practices

Things to Talk About

- What steps should you take to keep your goat healthy?
- What should you do if your goat gets sick?
- What are the three main health problems goats can have?
- How does a healthy goat act?



Chevon and Quality Assurance



Because you have a 4-H market goat project, you are a food producer. All goat producers are linked to the human food chain because they produce meat for people to eat. Therefore, it is your responsibility to make sure the chevon you produce is a wholesome and safe food.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Define chevon
2. Name two ways antibiotics can be given to goats.
3. Tell why it is important to handle goats carefully.

Chevon

The meat from a market goat is called “chevon.” In some Spanish-speaking cultures, goat meat is called “cabrito,” which generally refers to meat from small kids (15–20 pounds). The goat carcass is evaluated using the same standards (meat yield and quality) used to evaluate beef or lamb. Quality in goat carcasses is measured by the palatability or “taste appeal.” The yield grade of a goat carcass is measured by the percentage of lean, closely trimmed retail cuts. In other words, yield is the amount of meat you will have to eat after the bones, offal, and hide are removed.

Carcass characteristics of importance are the dressing percentage, distribution of muscle, and

the ratios of lean:fat:bone. The average dressing percentage for goats is 50 percent. The more mature an animal gets, the higher the percentage of fat in the carcass. At the same time, the percentage of bone tends to decrease and the percentage of lean muscle remains about the same. The portions of the carcass with the highest muscle mass are the leg and the loin. About 80 percent of the volume of a live goat should be from the last rib back.

The dressing percent in goats is in the range of 45–52 percent. The most important factor when producing a goat carcass is muscle. Overly fat goats are not desirable. Unlike pork or beef, chevon shows very little “marbling,” or specks of fat in the lean. Marbling is what gives meat its flavor and makes the cut of meat juicy.

Genetics are the most important factor in producing a well muscled, high-yielding market goat carcass. Genetics can affect the amount of fat a goat will accumulate as well as the length and depth of key cuts in the carcass. The most important or primal cuts in a market goat carcass are the leg, the loin, and the shoulder. The leg is the largest cut and normally the most expensive. The loin is the most tender cut because the loin muscle plays a very small role in moving the animal; therefore, the muscle stays tender.

CHEVON QUALITY

Consumers who buy chevon want the highest quality product they can buy. They want a product that is uniform and tastes good. They do not want to buy a product with bruises or abscesses from poor injections. Every effort should be made to see the consumer gets a product that is uniform, high-quality, safe, and wholesome. Injections for vaccines or for sickness should be made in the skin of the flank or in the neck, depending on the type of injection. Goats should always be handled gently, not beaten with sticks or canes or any hard material. Pay strict attention to labels on drugs and vaccines and always follow drug withdrawal times. If you provide a quality product on a continual basis for the consumer, the consumer will continue to buy your product.

CHEVON QUALITY ASSURANCE

The way you treat your goat can alter the quality, safety, and wholesomeness of the chevon your goat produces.

Live Animal Treatment

The way you physically treat live goats can also affect chevon quality. If you handle goats roughly, they could have bruises that will show up on the carcass after slaughter. Bruised meat must be cut off and thrown away, lowering the value of the carcass. To avoid bruised carcasses, be especially careful when loading and unloading goats. Never hit a goat with a solid object. Also check pens, trucks, and alleyways for sharp or protruding objects which could puncture or bruise a goat.

Market goats should never be physically altered or infused with any substance that will alter the shape of their body. No animal should be



subjected to rough handling or abuse. Goats are very easy to lead and respond well to a gentle, easy manner. You should not use electric prods or hard materials to train your goat. If you use rough handling, there is a good chance your goat will have bruises on the meat when it is slaughtered. Your reputation, as well as your ability to sell your market goats in the future, depends on how you handle your goats now.

Antibiotic Use

Both injectable and feed-grade antibiotics can help goats get over being sick. However, if the goat is slaughtered before the antibiotics have had time to clear the goat's system, the chevon produced from the treated goat could contain antibiotic residues. Antibiotic residues are illegal, and can be a public health hazard. Antibiotics in goat feed can also make goats grow faster and more efficiently. However, because of consumer concerns about antibiotic residues, antibiotics should not be fed for this purpose.

Antibiotics are species-specific. Any antibiotics used on your goats must be labeled for use in goats. Since few antibiotics are labeled for goats, most antibiotics must be prescribed by a licensed veterinarian.

Some antibiotics require a withdrawal time. Withdrawal time is the minimum time you must allow to pass between when the antibiotic is given to the goat and slaughter. This time period allows the antibiotic to clear the goat's system. Some antibiotics can be used safely until the goat is marketed. Others must be discontinued for a period of days or weeks before marketing. It is your responsibility as a goat producer to make sure you observe the proper withdrawal times for any antibiotics given to your goats. If an antibiotic has a withdrawal time, it will be listed on the label. A veterinarian should provide you with withdrawal times for prescribed antibiotics.

If you use medicated feed, the withdrawal times for medicated feeds (feeds containing antibiotics) are printed on the feed tag. For safety's sake, the feed you give to your goat for

the last month or so of the feeding period should be completely free of medications. Check tags of medicated feeds fed earlier in the goat's life, because some feed-grade medications have very long withdrawal periods. If you use medicated feed, write down what medication was fed, the level of medication in the feed, and the dates when you started and stopped feeding it. Antibiotics should not be included in goat feed for growth-promotion purposes.

Injectable antibiotics should only be used when a goat is sick, and then only under the supervision of a veterinarian. If you must treat a sick goat, ask your veterinarian what withdrawal times must be observed or strictly follow the directions listed on the label. Record any injections given, which goat they were given to, the dates, and where you injected the goat. All intramuscular (in the muscle) injections should be given in the neck muscle, in the area in front of the shoulder. Subcutaneous (under the skin) injections can be given in the same place, and are preferred if you have a choice between intramuscular and subcutaneous. *Never* give a goat an intramuscular injection anywhere other than the neck muscle.

There are several things you should do each time you treat an unhealthy goat or when you are giving a routine vaccination. If you get in the habit of checking all of these things before giving a shot, you are well on your way to producing chevon that will appeal to consumers.

Check the label for the expiration date. Do not use any medicine or vaccine if it is outdated.

Check the label for storage requirements, age requirements, and quantity amounts to be administered. Do not use products that were not stored properly. Do not assume that if 2 cc's of a product is recommended, and your goat is really sick, that you should use 4 cc's. Such instructions can only be legally given to you by a veterinarian. If there is an age requirement, stick to it. Some vaccines can cause severe damage to a very young animal.

Do not combine drugs. Some drugs will mix well, but others will change color and consistency and become ineffective. Don't take the chance.

Use a transfer needle. Put a clean "filler" needle into the bottle and use that only to draw medicine into the syringe. Never give a shot and use the same needle to draw up the next dose.

Choose the best injection site. Remember, market goats are just that. Never give an injection in the high-priced cuts of meat like the leg or loin. The preferred site for intramuscular (in the muscle) shots is in the neck. Subcutaneous (under the skin) shots should be given in the neck, behind the shoulder, over the ribs, or in the tailhead. If you have a question about these injection locations, ask your extension agent or goat leader.

Make sure you keep accurate records. Keep a record of what goat was treated, when, what medicine or vaccine was used, how much, and for how long. The animal that was treated must be identified somehow, either by ear tag, tattoo, or a mark on the body that is semi-permanent (livestock grease marker). If a slaughter animal is found to have drug residue, you must provide records for one year on treatment of animals.

Keep a barn treatment record sheet close to your animals. You may need to refer to this sheet when treating animals.

Words You Should Know

Antibiotic: Substance fed or injected to improve growth rate or treat disease.

Quality assurance: Assurance to the consumer that chevon is a safe and wholesome food.

Withdrawal time: The minimum time that must pass between when an antibiotic or vaccination is given to a goat and the goat's slaughter.

Suggested Activities

- Discuss the most important aspects of chevon quality.
- Ask local goat producers what steps they take to ensure chevon quality.
- Try making a dish for your family using chevon. Compare the taste and texture with beef.

Ideas for Presentations and Talks

- Factors affecting chevon quality
- Ensuring safe, wholesome chevon
- How to properly give shots and record them to assure high-quality chevon
- Subcutaneous and intramuscular injection methods

Things to Talk About

- How do you assure the chevon from your goats will be high quality?
- What are some different definitions of meat quality?
- How is the quality of chevon different from the quality of beef or pork?
- Does the lack of marbling in chevon cause cooking methods to differ? Why or why not?

10 *The Roundup*



At the start of your market goat project, decide if you are going to show your goat in a livestock show or roundup at some point. If so, you need to plan and prepare for the show.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Plan for a goat show from start to finish.
2. Prepare a goat for show.
3. Acquire basic equipment needed to show a goat.
4. Understand the basics of being a good show person.
5. Understand basic concepts of good sportsmanship.

Why Show Your Goat?

Showing your goat has several benefits. You will learn a lot about yourself and your goat. You are sure to learn how to be patient with your animal! Most 4-H'ers enjoy the fun and excitement of friendly competition in a show ring. Showing your goat also will give you a chance to compare your project animal with those of other 4-H'ers.

If you plan to show your goat, the first thing you need to do is obtain a copy of the rules and regulations for the show you want to enter. This will give you the proper dates to go by and the information about the show, including prize money you could win. Where you want to show

your goat will affect where and when you should buy your 4-H project kid. The show rules also will tell you the following information:

- Entry forms needed
- Animal health regulations and papers needed
- Required identification (some counties require a weigh-in at the beginning of the project)

Besides continuing to feed, water, and keep your goat clean, there are several items you need to prepare for before the roundup.

Ethics

Ethics are “doing the right thing.” It is your responsibility to behave ethically before and during the roundup. Many counties require roundup participants to sign the “code of ethics” at the end of this section before the roundup. Things you do or say, and the way you behave toward your animals and other participants, reflect directly on the public’s perception of agriculture. This code outlines ethically responsible behavior and practices, and has been used at The Pennsylvania Farm Show. It may be changed or updated, so make sure you have the most up-to-date copy available. Read the code and ask your leader to explain anything you don’t understand. Ask yourself if you have followed the code of ethics while raising your goat.

What Do You Need to Do and Have?

You should start preparing for the roundup several months in advance. Be sure your entries are submitted well before the entry deadline. Schedule a veterinarian to do any required health tests and vaccinations. Arrange trucking to get your goat to the roundup.

You will have to buy some equipment in order to fit and show your goat. Maybe you could borrow some of it from your parent or leader, or share it with another 4-H'er. You will need:

- Health papers
- Proof of entry
- Project record book completed to date
- Water and a hose
- Feed pan
- Bucket
- Bedding (if not provided at the roundup)
- Feed (hay and grain)
- Pitchfork and broom
- Clean rags
- Livestock soap
- Electric clippers
- Extension cord
- Clean rags
- Show clothes (check show rules for what to wear)
- Show and everyday collars

Training your Goat

You should get your goat used to having a collar around his neck when he is young. A good everyday cotton/nylon collar can be purchased at any local pet store. If you prefer to use and leave a chain collar on your animal, make sure that it can not get caught on anything or act like a "choke" collar. A goat can hang himself or break his neck very quickly.

You should have daily contact with your goat to get him used to you. When you go out to feed him, you can scratch behind his ears, brush him, or feed him directly out of your hands. Brushing your goat several times a week will help keep his coat shiny and healthy.



Hoof trimming: Trim down to the white "quick."

You should practice walking or "leading" your goat every day if possible. When teaching a goat to lead, keep the collar up next to the jaw and lead him with your hand near the top of his head. This gives you more leverage and control. Never pull the collar from underneath.

You should also practice making your goat stand still next to your side with his head held high. While he is standing still, practice setting up his legs. Always use your hands to move your goat's legs to the desired position. His front legs should be set directly underneath his body, even with each other, and set as wide apart as his brisket. His rear legs also should be set directly underneath of him and wide apart. If you set him up correctly, you would be able to drop a straight line from his pin bones to his hocks and straight down his cannon bone to the ground. See the photo on page 49. If your goat is not level over the top line, put a little pressure on his back directly in front of his hip bones with your right hand. This should encourage him to stand level for a short while. Don't overwork your goat; work in short sessions and always give him a treat or praise when you put him back in the pen.

Fitting Your Goat

First, find out if there are any special rules regarding clipping or grooming of your goat for the show. Usually you will want to clip your goat's

hair two weeks before the show. This way it will be easy for the judge to observe his conformation and muscling. If you wait until right before the show, the clipper marks will show and he will look less smooth. He might also catch a cold and then not present himself well in the show ring.

Your goat should be clean before you clip him. You can bathe your goat with a mild soap if he is really dirty. Otherwise, brushing should be enough. You can use the same type of animal clippers that are used on dairy animals (sheep shears will not work for goats). Clip the hair to about 1/2 inch in length. Usually the hair below his knees or hocks is not clipped. This gives your goat a more solid appearance. If you don't clip these areas, make sure you blend the hair a little at these junctions. You will also want to "bob" the

end of the tail. Find the end of the bones in the tail and leave about an inch of hair after that.

Trim your goat's hooves 7-10 days before the show. Just in case you trim too close, this allows enough time for the goat to heal so he doesn't limp.

On the morning of the show, either brush or wash your goat depending on how dirty he is. If you wash him, make sure he is completely dry before you bring him into the show ring. Make sure to scrub all the manure off of his hooves. Clean out his ears, nose, and tail web with baby wipes or wet paper towels. If you rub a baby wipe over his body before he goes into the ring, he will have a slightly shinier appearance.

Putting your goat on a stand and in a head lock will help when you trim your goat.



Showing Your Goat

You should show your animals with a chain or clean cotton/nylon collar, but make sure you have gotten him accustomed to this collar beforehand. Walk your goat around the show ring in a clockwise manner. Always keep your goat between you and the judge. Never block the judge's view of your animal with your body. *When turning or moving your goat, always move in front of the goat, not behind him.* When the judge asks you to stop walking, immediately set up your goat's legs. If the judge is in front of you, set up his front legs first. If the judge is standing behind you, set up the rear legs first. Keep good eye contact with the judge, but don't forget your goat—keep him set up square. Always keep your goat's head held high.

The judge may ask you some questions about your goat. Make sure you know his weight, age, breed, the parts of the goat, the strengths and weaknesses of your goat, and how much you are feeding him.

Being a Good Sport

Although everyone may deserve a blue ribbon, only one first place award can be given in each class. If you win a blue ribbon, be proud but don't show off. Accept congratulations with thanks and congratulate your fellow show persons. Even if you don't win a blue ribbon, be proud of what you accomplished. Most importantly, have fun and think about all the things you learned about yourself and about goats while completing this project. Try again for a blue ribbon next year!

Questions from the Public

You may be asked questions about your project by interested visitors to the show. If you are, be courteous, honest, and direct with your answers. Sometimes animal rights advocates attend livestock shows with the intent of creating a controversy worthy of news coverage. If you are approached by someone who accuses you of being cruel to your goat, be polite, remain calm,

answer what questions you can, and end the conversation as quickly as possible. Report the person to your parent or leader.

The Sale

After the roundup, many counties hold a junior livestock sale where project goats are sold. Often, goats sold at junior livestock sales bring more than the current market price. Buyers may purchase goats for many reasons—as advertisement for a business, as a “thank you” for doing business with them, as a source of freezer meat, or as simply a way to help young people. If you elect to participate in the sale, you (not your parents, leaders, or county agents) need to do some work ahead of time to ensure your goat will receive the best possible price. Remember that marketing is an extremely important part of your market goat project!

First, find out the rules for your sale. How many goats can you sell? What, if any, commission is charged? Is trucking available for buyers to send goats to local custom butchers? Do buyers have to keep the goat, or can they re-sell it? Many sales offer a buy-back program where, if a buyer does not want to keep the goat, he or she pays only the difference between the actual bid and the current market value. Generally, a local packer or livestock market has agreed to pay the current market value for goats bought, but not kept.

Judges will handle your market goat. Brace the goat with your knee against its chest.





Regardless of who takes your goat home, you receive the final bid price. Therefore it pays to contact as many potential buyers as possible about attending the sale and bidding on your goat. The more bidders that are at the sale specifically to bid on your goat, the more your goat may sell for.

Begin by making a list of businesses in your area that may be potential buyers. Don't limit yourself to agricultural businesses. Restaurants, grocery stores, insurance companies, banks, lumber companies, trucking companies, and others support junior livestock sales in many areas. Next, compile a list of contact people for each of the businesses. Ask your parents, leaders or neighbors if they know of anyone who is employed by each of the businesses—preferably in a management position.



Next, make plans to contact each of the people on your list. Many 4-H'ers write letters asking for support at a junior livestock sale. Personal visits are better. Call the business and ask for a meeting with your contact person. At the meeting, be prepared to explain why you are asking for their support, how buying at a junior livestock sale may benefit their business, and, if your county has a buy-back program, how it works. If your county has a buy-back program, make sure buyers realize they do not have to take the goat home with them. Be sure to note that any money they spend over and above the current market price is tax deductible. You may even have to explain how an auction works, so make sure you know!

Initial buyer contact should be made a month or so before the roundup. You should follow up with a phone call within a week of the sale to remind the buyers of the date, place, and time. Expect some people to decline to participate. That's okay—at least you asked! Also, tell prospective buyers that most of all you want them to come and support the junior livestock sale. Second, you would like them to bid on your goat.

On sale day, try to look up your buyers before the sale starts and thank them for coming. Immediately after the auctioneer pronounces your goat "sold," listen carefully to who the buyer was. Pen your goat, then ask your leader or a sale clerk to point out the buyer in the crowd. Go find the buyer and personally thank him or her.

Within a week after the sale, send a thank-you note to the buyer and ask that they consider supporting the sale next year.

Suggested Activities

- Visit a market goat show to see how others show goats.
- Attend a goat fitting and showing clinic.
- Train and fit a market goat for show.
- Show your market goat at a show.
- Give a presentation or talk on how to fit and show a goat.

- Discuss fitting and showing with an experienced show person.
- Make a poster to advertise your 4-H show or auction.
- Invite a person who is interested in 4-H to attend your 4-H show or auction.
- Write a thank you note to the person who buys your goat at a 4-H auction.

Ideas for Presentations and Talks

- How to prepare a goat for show day
- Equipment needed to show a goat
- How to fit a goat
- Your experiences showing a goat
- Contacting buyers for a sale

Things to Talk About

- What steps must you take if you want to show your goat?
- How do you show a goat in a ring?
- What equipment do you need to fit and show goats?
- How does a good show person act?



CODE OF ETHICS

Exhibitors of animals shall at all times deport themselves with honesty and good sportsmanship. Their conduct in the competitive environment shall always reflect the highest standards of honor and dignity to promote the advancement of agricultural education. This code applies to junior as well as open class exhibitors who compete in structured classes of competition. This code applies to all livestock offered in any event at the livestock show.

All youth leaders working with junior exhibitors are under an affirmative responsibility to do more than avoid improper conduct or questionable acts. Their moral values must be so certain and positive that those younger and more pliable will be influenced by their fine example. Owners, fitters, trainers, and absolutely responsible persons who violate the code of ethics will forfeit premiums, awards and auction proceeds and may be prohibited from future exhibition. Exhibitors who violate this code of ethics demean the integrity of all livestock exhibitors and should be prohibited from competition at all livestock shows in the United States and Canada.

The following is a list of guidelines for all exhibitors and all livestock in competitive events:

1. All exhibitors must present upon request of show officials, proof of ownership, length of ownership, and age of all animals entered. Misrepresentation of ownership, age, or any fact relating thereto is prohibited.

2. Owners, fitters, trainers, or absolutely responsible persons shall provide animal health certificates from licensed veterinarians upon request by show officials.

3. Junior exhibitors are expected to care for and groom their animals while at the show.

4. Animals shall be presented to show events where they will enter the food chain free of violative drug residues. The act of entering an animal in a livestock show is the giving of consent by the owners, fitters, trainers, and/or absolutely responsible persons for show management to obtain any specimens of urine, saliva, blood, or other substances from the animal to be used in testing. Animals not entered in an event which culminates with the animal entering the food chain shall not be administered drugs other than in accordance with applicable federal and state statutes, regulations, and rules. Livestock shall not be exhibited if the drugs administered in accordance with federal and state statutes, regulations, and

rules affect the animal's performance or appearance in the event.

If the laboratory report of the analysis of saliva, urine, blood, or other sample taken from livestock indicates the presence of forbidden drugs or medication, this shall be prima facie evidence such substance has been administered to the animal either internally or externally. It is presumed that the sample of urine, saliva, blood, or other substance tested by the approved laboratory to which it is sent is the one taken from the animal in question, its integrity is preserved and all procedures of said collection and preservation, transfer to the laboratory, and analysis of the sample are correct and accurate and the report received from the laboratory pertains to the sample taken from the animal in question and correctly reflects the condition of the animal at the time the sample was taken, with the burden on the owner, exhibitor, fitter, trainer, or absolutely responsible person to prove otherwise.

At any time after the animal arrives on the show grounds, all treatments involving the use of drugs and/or medications for the sole purpose of protecting the health of the animal shall be administered by a licensed veterinarian.

5. Any surgical procedure or injection of any foreign substance or drug or the external application of any substance (irritant, counterirritant, or similar substance) which could affect the animal's performance or alter its natural contour, conformation, or appearance, except external applications of substances to the hooves or horns of animals which affect appearance only, and except for surgical procedures performed by a duly licensed veterinarian for the sole purpose of protecting the health of the animal, is prohibited.

6. The use of showing and/or handling practices or devices such as striking animals to cause swelling, using electrical contrivance, or other similar practices are not acceptable and are prohibited.

7. Direct interference with the judge, show management, other exhibitors, breed representatives, or show officials before, during or after the competitive event is prohibited. In furtherance with their official duty, all judges, show management, or other show officials shall be treated with courtesy, cooperation, and respect and no person shall direct abuse or threatening conduct toward them.

8. No owner, exhibitor, fitter, trainer, or absolutely responsible person shall conspire with another person or persons to intentionally violate this code of ethics or knowingly

contribute or cooperate with another person or persons either by affirmative action or inaction to violate this code of ethics.

9. The application of this code of ethics provides for absolute responsibility for the animal's condition by an owner exhibitor, fitter, trainer, or participant whether or not he or she was actually instrumental in or had actual knowledge of the treatment of the animal in contravention of this code of ethics.

10. The act of entering an animal is giving consent by the owner, exhibitor, fitter, trainer, or absolutely responsible person to have disciplinary action taken by the show management for violation of this code of ethics. The act of entering an animal is giving consent that any proceedings or disciplinary action taken by the show management may be published with the name of the violator or violators in any publication of the International Association of Fairs and Expositions, including Fairs and Expositions and any special notices to members.

11. The act of entering of an animal in the show is the giving of verification by the owner, exhibitor, fitter, trainer, or absolutely responsible person that he or she has read this code of ethics and understands the consequences and penalties provided for actions prohibited by the code. It is further a consent that any action which

contravenes these rules and is in violation of federal and state statutes, regulations, or rules may be released to appropriate law enforcement authorities with jurisdiction over such infractions.

11

Keeping 4-H Records



When you write down something that you did or that happened, you are keeping a record. Records help you remember important information.

Records can prove what was done, who did it, and how much money it cost to do it. When you grow up, you will need records so you can pay taxes, borrow money, buy a house, or apply for a job. Keeping good 4-H records may help you to win an award or college scholarship.

Objectives

After studying the materials and completing the suggested activities for this section of your project, you should be able to:

1. Explain why people keep records.
2. List the kinds of records 4-H members with goat projects should keep.
3. Set up a record-keeping system for your goat project.
4. Complete your 4-H project record book.

Why Keep Records?

Records are used to prove what was done and to help make decisions. Good records can tell you if your goats are costing or earning you money. They can be used to tell you if your goats are growing as fast as they are supposed to. They can be used to identify health or nutritional problems. Records are an important part of all 4-H goat projects.

Kinds of Records

Several kinds of records should be kept by 4-H members who raise market goats. These are:

- financial records
- animal performance records
- animal production records
- records of management practices used
- records of participation in training, activities, and events

FINANCIAL RECORDS

Financial records tell you about the value of what you own and how much money you spent and received. Your records should include these kinds of financial records:

1. Inventories of animals and equipment. These are lists of how many animals or pieces of equipment you owned and what they were worth when your project started and ended.

If you are required to turn in your 4-H record before you have sold some of your animals, you will need to estimate what they are worth on the day your record ends. You may get a high price when you sell animals at a 4-H auction, but it's a good idea to use real-world prices to estimate what your animals are worth. Look in farm newspapers and magazines to find out prices of animals at nearby markets.

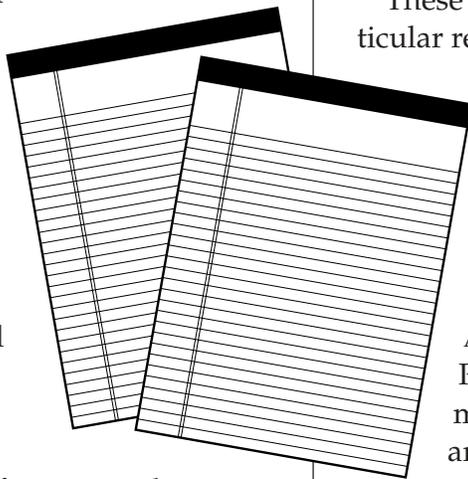
2. Expenses. These are amounts of money spent to buy animals, and the things used to care for them. Include costs of feed, supplies, equipment, animals, and veterinary care. Feed costs should include costs of all feed eaten, not just the feed you buy. Home-grown pastures and feeds cost money to grow and could have been sold to someone else. They are not “free” when your animals eat them. Your parents and leaders can help you estimate what they are worth.

3. Income. This is money received from selling animals, animal products, and other things related to your project. It should also include premiums won at shows. If your income is more than your expenses, you have made a profit. If your expenses are more than your income, you have a loss.

ANIMAL PERFORMANCE RECORDS

Animal performance records are records of how individual animals grow and use their feed. In order to keep performance records, animals need to be identified with tattoos or ear tags. Write down the identification number, date of birth, and sire and dam of each goat, if these are known. Some examples of performance records are weights, average daily gain, amounts of feed eaten, and efficiency of feed conversion.

Weights can be measured using a scale, or can be estimated using a weigh tape. Some counties have a day when they weigh and identify goats at the start of a 4-H project. Good times to weigh goats are when you buy them and sell them. Other good times to weigh goats are times when you will be doing other management practices, such as weaning, deworming, or vaccinating them. You should know how much your goats weigh to calculate the dosage for some dewormers or medicines. Record the weight of your goats at each weighing.



Average daily gain can be calculated if you weigh your animals more than once. Subtract the first weight from the second to calculate pounds gained. Calculate average daily gain by dividing pounds gained by the number of days between the first and second weighing. You should do this every month or so to see if your goats are gaining as fast as they should.

Feed intake can be calculated if you keep track of what kind of feed and how much feed you give to each animal or group of animals. When you buy or mix feed, write down the date, cost, weight, and kind of feed bought. If you mix feed at home, write down the amount of each ingredient mixed.

Efficiency of feed conversion can be calculated if you know how many pounds of feed your animals ate between weighings. Calculate efficiency of feed conversion by dividing pounds of feed eaten by pounds of weight gained.

On the next page are some average market goat performance traits. Compare the performance of your goats with the averages.

These guidelines are not based on any particular resource. They are simply a summary of the performance of “average” goats. Your goats’ performance will vary depending on genetics, your management ability, and your facilities. Most goats should fall within the ranges shown.

ANIMAL PRODUCTION RECORDS

Production records aren’t kept for market goat projects. Production records are records of how many kids or other products are produced by an animal. They include dates when a doe kids and her kids are weaned. They may also include the performance of her progeny. Other kinds of production records kept for animals other than goats are amounts of milk, wool, or eggs produced. Since market goats don’t usually produce any products other than their carcasses at slaughter, you won’t need to keep any production records for market goats.

MARKET GOAT PERFORMANCE TRAITS

<i>Feed consumed per day (pounds)</i>	<i>Average</i>	<i>Range</i>
40-pound goat	2.0	1.5–2.25
60-pound goat	2.5	2–3
100-pound goat	3.0	2.5–4.0
Feed eaten per pound of weight gain	6	6–7
Total feed required from 40–100 pounds	360	300–380
Average daily gain 40–100 pounds	.3 lbs/day	.2–.45 lbs/day

<i>Carcass traits—100 pound goat</i>	<i>Average</i>	<i>Range</i>
Slaughter weight	90	60–110
Yield (dressing percent)	50%	45%–55%

Some performance traits of breeding goats are listed below. While they don't apply specifically to your project, you need to know some of these numbers.

<i>Breeding Goat Performance Traits</i>	<i>Average</i>	<i>Range</i>
Gestation length	150 days	147–153 days
Length of estrous cycle	21 days	18–24 days
Age at first estrus	7 months	6–9 months
Weight at first estrus	75 lbs	65–85 lbs
Length of estrous (standing heat)	36 hours	12–48 hours
Weaning age	60 days	45–90 days
Time from kidding until first estrus	Goats are seasonal breeders and will not cycle again, after kidding, until autumn. Some breeds of goats will cycle more often.	
Does served per buck	There is no solid research on this subject, but most breeders figure on one buck servicing 4–6 does a week.	

Below is an example of an animal production record associated with dairy goats.

	<i>Average</i>	<i>Range</i>
Milk production per doe	8 lbs/day 2000 lbs/305 day	1000–4500 lbs/305 day

MANAGEMENT PRACTICE RECORDS

Write down the things that you do to care for your animals. Also write down when, how, and why you do them, and which animals were involved.

Keep records of dates when you buy and sell goats, or when a goat dies. Other dates to write down are dates when goats are sick, dewormed, vaccinated, or blood tested. If you treat an animal with a medicine or vaccine, write down the name of the product, how much was given, which goat(s) you treated, and why you treated the animal. These records are important for chevon quality assurance.

Your 4-H Accomplishment Records

In addition to the records you will keep about what you do with your goats, there are some other kinds of records you should keep when you are in 4-H. These include:

- Activities in which you participated, such as camps, contests, and achievement programs.
- Special skills and knowledge you learned.
- 4-H accomplishments, such as projects completed and things you made.
- Offices and other leadership roles you held.
- Awards you or your goats received.

Words You Should Know

Financial: Related to money.

Income: Money someone else pays to you.

Expenses: Money you spend for products or services.

Profit: Money you keep when your income is more than your expenses.

Loss: Money you lose when your expenses are more than your income.

Estrus: The period of time when a doe can be successfully mated.

Gestation: The time of pregnancy between mating and kidding.

Suggested Activities

- Discuss records you should keep and how to keep them with your parent or club leader.
- Keep a diary or barn chart that lists dates and what happened when you do something with your animals. Be sure to include who was involved, what happened, and when, where, why, and how it happened.
- Complete a 4-H Animal Project Record for Beginners or 4-H Livestock Record for Intermediate and Advanced Projects.

Extra Activities to Try

- Weigh a project animal more than once. Calculate how much it gained and its average daily gain. Compare with the listed averages.
- Discuss how to use your records to make decisions about management of your project. Do this with your leaders and members of your club.
- Calculate the efficiency of feed conversion of your goats. Compare with the listed averages.

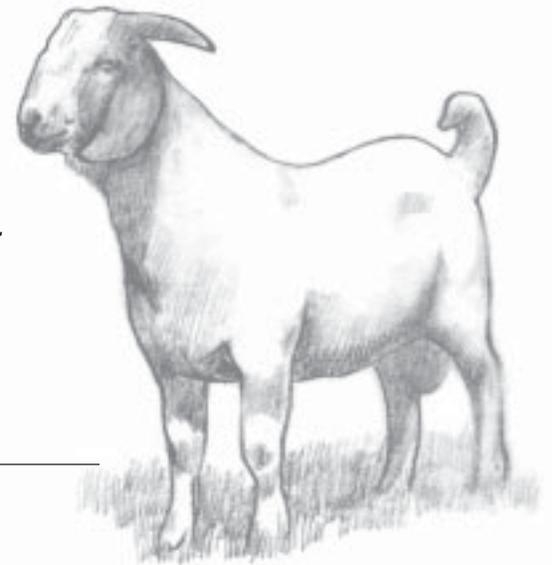
Ideas for Presentations or Talks

- Kinds of records to keep on your goats
- How to fill out a project record for your market goat
- How to calculate profit and loss
- Why records are important

Things to Talk About

- Why do people keep records?
- What kinds of records should 4-H members keep?
- What kind of information belongs in your 4-H market goat record?
- How can you use your 4-H goat records to make decisions about how to manage your animals?

12 *Market Goat Management Schedule*



Plan

Buy six- to nine-week-old kid goats weighing 40–50 pounds. Market them when they are seven to nine months old and weigh 90–110 pounds. Dates will change depending on the dates of your show.

Assumptions

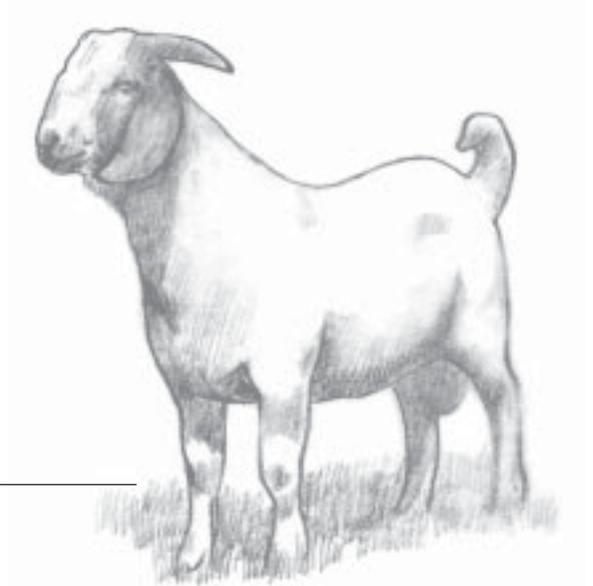
Goats will eat an average about 2.5 pounds of feed (less initially, more later) each day and gain an average of .3 pounds each day.



<i>Goat weight</i>	<i>Things to do</i>	<i>Sample dates (will show Aug. 15)</i>	<i>Dates for your project</i>
Less than 40 pounds	Plan project.	Dec–Jan	
	Arrange project financing.		
	Get barn and pens ready for goats.		
	Make sure feeders and waterers are ready to use.		
	Arrange to buy feed and bedding.		
40–50 pounds	Buy goat kid.	March–April	
	Keep new goats away from other goats for at least three weeks.		
	Vaccinate and deworm goats, if not done before purchase.		
	Ear tag, or tattoo if appropriate.		
	Start goat on grain slowly.		
	Write goat weights and prices in record book. Weigh goats every two weeks.		
	Begin handling, brushing, and leading goat.		
Under 80 pounds	Deworm goat monthly.	April–July	
	Trim hooves.		
	Handle and brush goat daily.		
	Weigh monthly and record.		
	Contact vet to arrange for a date to issue health papers.		
80–100 pounds	Reduce crude protein to 12 percent.	July–Sept	
	Weigh goats and calculate average daily gain.		
	Evaluate and compare to target.		
	Deworm goats only after checking withdrawal times.		
	Clip goats two weeks before the show. Clip the body completely.		
	Trim hooves two weeks before the show.		

13

Appendix



Web Sites with Useful Goat Information

<http://www.sheepandgoat.com/>

This site provides links to wide variety of educational sites.

<http://www.ces.ncsu.edu/lenoir/staff/jnix/Ag/Goat/>

This site hosted by North Carolina State University has a wide variety of information and research on market goats.

<http://www.jackmauldin.com/medication.htm>

This site is very helpful when selecting treatments for your meat goat.

<http://www.ansci.cornell.edu/4H/meatgoats/meatgoat4H.htm>

This site allows you to select topics of study about market goats.

<http://www.goatmarket.com/index2.htm>

This is an excellent site on market goat marketing.

<http://www.ansci.cornell.edu/extension/esmga.html>

This site hosted by Cornell Cooperative Extension connects you to current goat information.

<http://www.npga-pygmy.com/>

This site gives excellent information on the pygmy goat. It provides a record book for youth and a pygmy goat reference manual.

<http://www.ansci.cornell.edu/extension/meatgoat3.html#cal>

This site offers excellent marketing information, including dates, weights, and special considerations needed to market goats.

Many of these sites have links to other good goat sites. Enjoy surfing!

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4-H Club Motto

“To make the best better”

4-H Club Pledge

I pledge
my head to clearer thinking,
my heart to greater loyalty,
my hands to larger service, and
my health to better living, for
my club,
my community,
my country, and
my world.

4-H Club Colors

Green and White

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