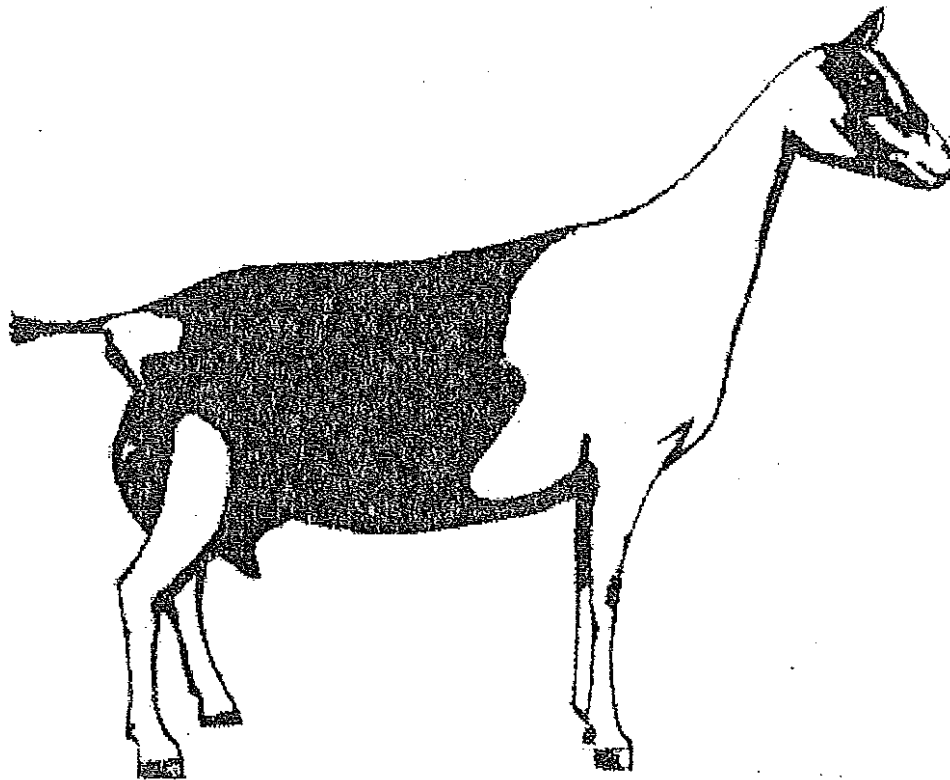




4-H Publication #745

Version 04/02

# B.C. 4-H Goat Leaders Manual



## **Acknowledgements:**

This manual is produced for 4-H members and leaders enrolled in the 4-H programs administered by:

The British Columbia 4-H Provincial Council  
in partnership with the  
B.C. Ministry of Agriculture, Food & Fisheries:

Information for this manual has been drawn from several sources, including Canadian and American goat reference materials. Thank you to the Ontario 4-H Council and Nova Scotia Department of Agriculture and Marketing for the use of their goat materials in the revision of the B.C. 4-H goat project materials. A special thanks to Allison Watt of the Okanagan North Goat 4-H Club for her excellent work on the pack goat unit materials and to the BC 4-H goat leaders and members for your input and patience during the revisions of the BC 4-H Goat Project.

Front Cover Clipart by Sue Estrada.

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## LEADER'S GUIDE - INTRODUCTION

It has often been said that, "Volunteer 4-H leaders are a blend of friend, teacher and parent." What a big order to fill! But you will discover that you have many talents as a 4-H leader. Having an interest in young people and their development and being willing to take up the challenge of 4-H leadership is the first step to success.

The purpose of this Leader's Guide is to aid and guide the leader in teaching the material in the Goat Project. It is essential that the leaders study and understand the information to be presented before attempting to teach it to members. Use the member manuals (Publications # 750) as a reference, as well as other goat resources.

The suggestions contained in this guide should be used only as guidelines in teaching the material. The project leader should feel free to make any adjustments that he/she feels will make the presentation clearer or more interesting.

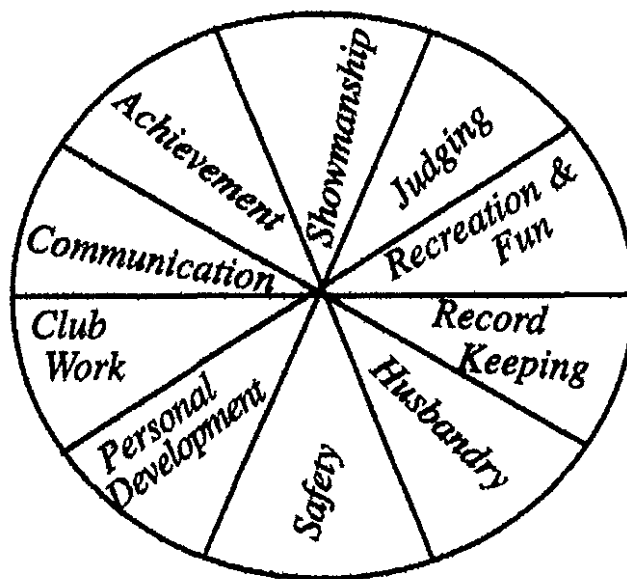
The focus of the project might appear to be goats, however, the development of members as individuals is your real goal. It is important for the member to take a full part in the 4-H program for their own benefit and for the good of the club.

It is valuable to have your group come together to work with their goats as frequently as possible. Even if two members can have an opportunity to work and train together, it will improve club spirit and stimulate the members to work harder.

You will get to know the club members very well and where their interests lie. Use this knowledge, your own expertise and imagination to plan a fun, interesting and challenging club program for your members. And enjoy being a 4-H leader!

### 4-H GOAT WHEEL

There are many aspects to the 4-H Goat Project. Keep in mind that all are important as you guide your members throughout the year.





### General Objectives of the 4-H Goat Project

1. To provide an opportunity for young people to develop mentally, emotionally, and socially through association with others.
2. To develop in young people responsibility, initiative, cooperation, and other characteristics which promote better citizenship.
3. To provide an opportunity for young people and adults to associate with one another in a meaningful way.
4. To foster and promote the ability to express one's thoughts and feelings.
5. To develop in young people qualities of leadership, initiative, self reliance, and sportsmanship.
6. To gain a deeper appreciation and increased knowledge of the goat.
7. To promote a greater love of animals and a humane attitude towards them through working with and caring for goats.
8. To learn the skill of training and working with goats.
9. To increase knowledge of safety precautions to prevent injury to self, others, and goats.



## TEACHING SUGGESTIONS

To be a good 4-H leader you must first understand young people and have the ability to arouse their interest and enthusiasm. It is important that you yourself be interested and enthusiastic about the subject you are teaching.

**Important!** It is not required that you, as the club leader, know or teach all the aspects of goat ownership covered in this project. Try to identify as many people as possible in your club or community who have knowledge of skills in certain areas and invite them to lead each section with some direction from you.

You should read the sections on "Working With Young People" and "Managing A 4-H Project" in the 4-H Club Leader's Handbook. In addition to these, the suggested teaching plan in this guide will give some assistance in setting up a program.

Evaluation is an important part of your teaching program. It allows you to see how well the material you are presenting is being absorbed, and whether you are getting your point across to the members.

### Some Principles Of Good Instruction

1. Know what you are trying to accomplish in each lesson. Be prepared.
2. Be as simple, clear and definite as you can. Avoid too much talk.
3. Use correct terms of goats.
4. Be firm but sympathetic. Be patient and quiet, especially with nervous members. Be natural. Never be sarcastic.
5. Keep up interest by keeping members active . . . Keep order.
6. Encourage them with praise when it is deserved, especially with younger members. Play no favourites.
7. Set an example. If you have a goat, then you and your goat must be well turned out.
8. A good lesson should be:

<b>Hearing (explanation)</b>	<b>5 minutes</b>
<b>Seeing (demonstration)</b>	<b>10 minutes</b>
<b>Feeling (practice)</b>	<b>15 minutes</b>

Especially in clubs with young members, holding their attention during teaching sessions is often a problem. This can be solved to a large extent by using a variety of presentation methods. Several methods are suggested below. More are suggested in the 4-H Leader's Handbook.

## Methods Of Instruction

1. Demonstration - should be part of every lesson. "The eye is the window to the brain".
2. Lecture - should be kept short (30 minutes followed by questions and discussion to be sure the information is understood).
3. Reading - have members read manuals or reference materials ahead of time.
4. Quizzes can be useful, but remember to use them as indicators of amount learned rather than for competition between members.
5. Prepared talks - have the members prepare talks on various subjects from the manual. Several members may work together on a presentation. As an alternative, members may choose to read reference books on topics of interest and prepare talks to be given at club meetings. These talks should be time limited and kept fairly short.

**Remember. . . "Learn to Do by Doing"!**

## Age Characteristics of Young People

### **9 to 12 Year Olds (Juniors)**

- This is a generally healthy age and is a slower growth period.
- Many have excess energy.
- Very sociable and as the age increases there is rising interest in people rather than activities.
- Coordination is getting well developed and the ability to use equipment increases.
- Seldom want to be alone.
- May be prone to take risks.
- Like the leadership of groups; clubs and camps offering exciting adventure.
- Popularity is very important and group acceptance is also important.
- Tend to avoid opposite sex.
- Beginning to develop personal value system and fair play is an important factor to them.
- Wide range of individual differences as maturity levels differ dramatically.
- Sense of humour is well developed by the end of age group.

### **Age 12 (Junior)**

- May be extremely touchy.
- May be prone to mood swings (enthusiasm-apathy; love-hate; selfish-thoughtful).
- Interest in opposite sex begins to show.
- Fear independence yet want it.

### **Implications for leadership and programming**

- Keep the above information in mind when planning programs.
- Guard against favouritism.
- Group work is essential.
- Demonstrate strong democratic and group consensus leadership.
- Incorporate team activities to encourage a sense of belonging.
- Include very active games.
- Since skills are developing, they should be given full range to accommodate maturity level.
- Give greater personal responsibilities than before.
- Well-planned programs are essential or they will lose interest.
- Include some planned activities to mix the sexes.
- Allow for questions.
- Fair play is vital and they respect a consistent, reliable and trustworthy leader.
- Guided competition can lead to development of sportsmanship.

### **13 - 15 Year Olds (Young Seniors)**

- This group is nearing physical maturity.
- Greatly concerned about their changing self; appearance is very important.
- They may be self-conscious due to many factors including growth spurts, changing voice in males, and changing body appearance.
- The opinion of others is very important particularly with a peer group.
- Individual personality is becoming more obvious.
- Interest in the opposite sex.
- Heightened emotionality.
- Development of philosophy of life and other personal values.
- Cliques may develop, as they become selective with friendships.
- May daydream more.
- Beginning independence from family.
- Fluctuate between childish and adult behaviour
- Sense of identity - begin to doubt and question everything that they have learned.

### **Implications for leadership and programming**

- They like to plan their own program with skilled guidance.
- Personality and character of the leader is most important.
- They place importance in an individual's importance. They will question authoritative leadership and may rebel against it.
- Encourage team work and group activities.
- Offer a variety - broad program is essential - not just time filler.
- Require activities that are mentally stimulating and challenging.
- Opportunity for mixing of sexes.
- Should be given opportunity for leadership within the program.
- Informality is key to programming.
- Giving adolescents an opportunity to plan their affairs without adult interference can reduce emotional tensions.

## Age Characteristics of Young People

### **16 Year Olds (Seniors)**

- This age is reaching physical maturity.
- May be prone to idealism and expression of rash thought.
- Interested in all aspects of living.
- Will become very dedicated to a cause they feel worthy.
- Establishing a moral code.
- Growing independence from family.
- Individualism marked.
- Choice for vocation may take place and interest in activities that complement this.
- Periods of intense emotionality.
- Cooperation in interpersonal relationships.
- Prize one or two dependable friends.

### Implications for leadership and programming

- Importance of competent leadership counselling.
- Democratic leadership essential.
- High ideals expected of a leader for this group.
- Program must provide challenge.
- Opportunity for mixing of sexes.
- Allowance for individual differences.
- Goals must be seen as worthy and agreed upon together.
- Opportunities for independence.
- Must allow for and encourage the acceptance of oneself as an individual.

## WORKSHEETS

Many worksheets are included in this Leaders' Guide. The intention is to use them as a reference; in other words, this is your permanent collection. Photocopy what you intend to use and return it to the binder to be used again. It is up to you to choose the worksheets you want to use, if any.

YOU DO NOT HAVE TO USE THE WORKSHEETS AS THEY ARE PRESENTED.  
MAKE ANY CHANGES YOU LIKE TO YOUR COPY TO SUIT  
YOU AND YOUR CLUB MEMBERS.



## ACHIEVEMENT PROGRAM

The Achievement Program is an opportunity for members to share the knowledge and skills they have gained during their 4-H project year. Each member should be involved in some way. It should also inform the public about the purpose and goals of the 4-H program. Achievement Program ideas specific to this project are suggested below. Involve club members in selecting a suitable idea and making the necessary preparations.

Instead of or in addition to showing their goats, members could plan an alternate activity as their Achievement Program. Some clubs will have their Achievement Program during the local fair, while others will want to put on a separate event, such as a display in a mall, an activity during an Agricultural Awareness activity in their area, or a report to the local breed associations.

Some suggestions:

1. Members display their animals at a 4-H Achievement Program. They should be encouraged to prepare a sign giving as much information on the breeds and health of the animal as possible. Such a sign could include sex, age, feeding requirements, history of the breed, etc. These displays could be done individually or as a group, depending on the number of animals, display space available and the suitability of the event.
2. Members could put on a showing demonstration, with judging and a ringside commentary on the fine points of showing and an explanation of the judge's choices.
3. Designate some members as Information Officers and prepare some material for them to hand out to the crowd as it views the 4-H displays or show. Another way to draw people to the display is to have a running commentary, delivered by a 4-H members with a microphone, on the local club, its projects and the display.
4. Participate in an agricultural event or a mall display. The club could set up a display and have members available to answer questions about some aspect of goat care and 4-H. This display could include basic information on the multiple uses of goats.

### **CAUTION**

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. These may include the use of a sanitary foot bath or wearing plastic, disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember, some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are reasons to prevent spread of diseases in addition to the cost associated with a disease outbreak.

## Special Notes For This Project

1. Any page number in this guide refers to the Members' Manual unless otherwise noted.
2. The Members' Manual has been designed as a reference source. Encourage members to leave their manuals closed for most of the meeting, allowing them to observe, learn and take part in the discussion and other activities. It is **not necessary to read** all the information given in the Members' Manual during the meeting.
3. You are free to change the order of material presented in the manual and the information if you like.
4. Remember to refer to your 4-H Leaders' Handbook - You will find many useful tips and ideas covering topics such as program planning, successful meetings, parliamentary procedure, effective communication and presentation methods. Refer to you Leaders' Handbook as you plan meetings.
5. Judging tips could be an optional activity at your club meetings. The more your members learn how to judge, the better judges they will become. Each 4-H family should have a copy of the Livestock Judging Guide, (4-H Pub. # 427). A goat judging section is also included in the members' manual.
6. Fitting and showing skills should start as soon as the member can work with their animal. Keep tabs on members' progress. Some members may not have anyone at home to ask for help. It is a good idea to pair an experienced senior member with a junior member who could use some help or encouragement.
7. There are meeting activities, meeting mixers and extra topics for discussion that have been listed in this guide. They provide greater detail and information and should be used as a resource for meeting presentations.

## **WELCOME TO THE 4-H GOAT CLUB**

### **WELCOME TO 4-H!**

Greet old and new members with a game! As each member arrives, pin on his/her back a piece of paper with the name of a breed of goat on it. Each person must guess the name by asking others questions that can only be answered with YES or NO ... such as:

AM I WHITE?

ARE MY EARS LONG?

DO I PRODUCE MOHAIR?

When a member has correctly guessed the breed of goat, move the tag to the front.

### **GETTING STARTED**

1. Begin with the 4-H pledge. (Make sure new members have a copy to look at.)
2. Welcome the members. Introduce leaders. Have members introduce themselves. Ensure that everyone has a name tag (optional).
3. Complete enrolment form information.
4. Outline the opportunities members have such as taking part in the local fairs, district 4-H judging rally, public speaking, regional 4-H events and provincial 4-H programs.
5. Distribute the Members' Manual.
6. Give a brief summary of what club is about and topics covered.
7. Discuss the members' unit requirements. Outline any expectations you have of the members.
8. Briefly discuss the Achievement requirements of your club.
9. Have some group games and social recreation for members to get acquainted.

### **ROLL CALL**

At the beginning of each meeting have an easy question that all members can answer. Show an interest in the members and their responses. This encourages them to participate throughout the meeting.

### **ROAD MAP TO GOOD MEETINGS**

It is important for everyone to become familiar with the basics of running a good meeting. Review with members the purpose of an agenda and the executive's responsibilities. Have the club members elect an executive. You should have a copy of 4-H Publication 1815 Parliamentary Procedure for your club.

The club president will chair the short business section at the beginning of each meeting. Helping members to understand and use the basics of running a meeting will help them to become familiar with the process.

### **THANKING THE MEETING HOST**

If a meeting is to be held in a member's home or barn, that members and his or her parents should be appropriately thanked for their hospitality. A letter can be forwarded after the meeting or a simple verbal thank you from the group can be given. The president should designate a different member to take responsibility for this task each time.

### **BEFORE THE NEXT MEETING**

To prevent dropping out, take time with each new member to make sure that he/she knows what is expected of him/her. Make them feel a part of the group and offer to help in any way.

## WHO AM I?

*Worksheet 1: WHO AM I?* tests younger members on the many reasons to raise goats.

*Angora goat ... High fashion knitwear*

*Nubian goat ... Cream products*

*Market kid ... Chevron burger*

*Swiss dairy breed ... Milk and cheese dairy products*

## CHOOSING THE RIGHT GOAT

Have as many examples of official and owner-kept records as possible. Ask members questions such as:

*Why is it important to know how much milk or mohair your goat produces?*

*Why is a show record not a good tool to base your selection of a goat on?*

*What other records, combined with the show record, would help you make a wise choice?*

Questions such as these will assist members in understanding how these tools are used.

If possible have the records for several individual goats available and direct your questions to the information on these records.

Members should be aware that by keeping good and consistent records, the inefficient animals will be culled while the quality animals will stand out. Records that members may want to keep include -

- number of kids born - bucks and does
- feed consumption
- longevity
- breeding and inherited qualities (to determine the bucks' quality).

## BREEDS OF GOATS

Below are a few suggestions to help you discuss with your club members the breeds of goats. You do not need to cover all of these and may opt to save some of the worksheets for another year or give the worksheets to younger 4-H members.

*Worksheet 2: Breeds of Goats* is a goat breed descriptive worksheet to help members learn about types of goats. After the members have completed ask the group questions such as:

*What did members do to complete the Breeds of Goats table?*

*What did they learn by comparing breeds of the different goat projects?*

*What were your member's personal favourite goat breed?*

Organize a goat farm tour for your club and have members prepare in advance at least five questions that they want to ask the owner or herdsman; question sheet on page 11. If your club already knows a lot about dairy goats, arrange for a tour of Pygmy or Boer goats to increase the members' goat breed knowledge. At your next meeting, ask your members to describe the tour, what they learnt and how did making questions ahead of time help them?

*Worksheet 3: Goat Breed Crossword Puzzle.* Answers are: Across:

Down:

1. Angora
4. Pygmy
6. Saanen
7. Boer
8. Alpine
9. Nubian

2. Oberhasli
3. Toggenburg
5. La Mancha



**Questions I plan to ask the goat breeder:**

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## WHAT TO LOOK FOR IN A GOAT

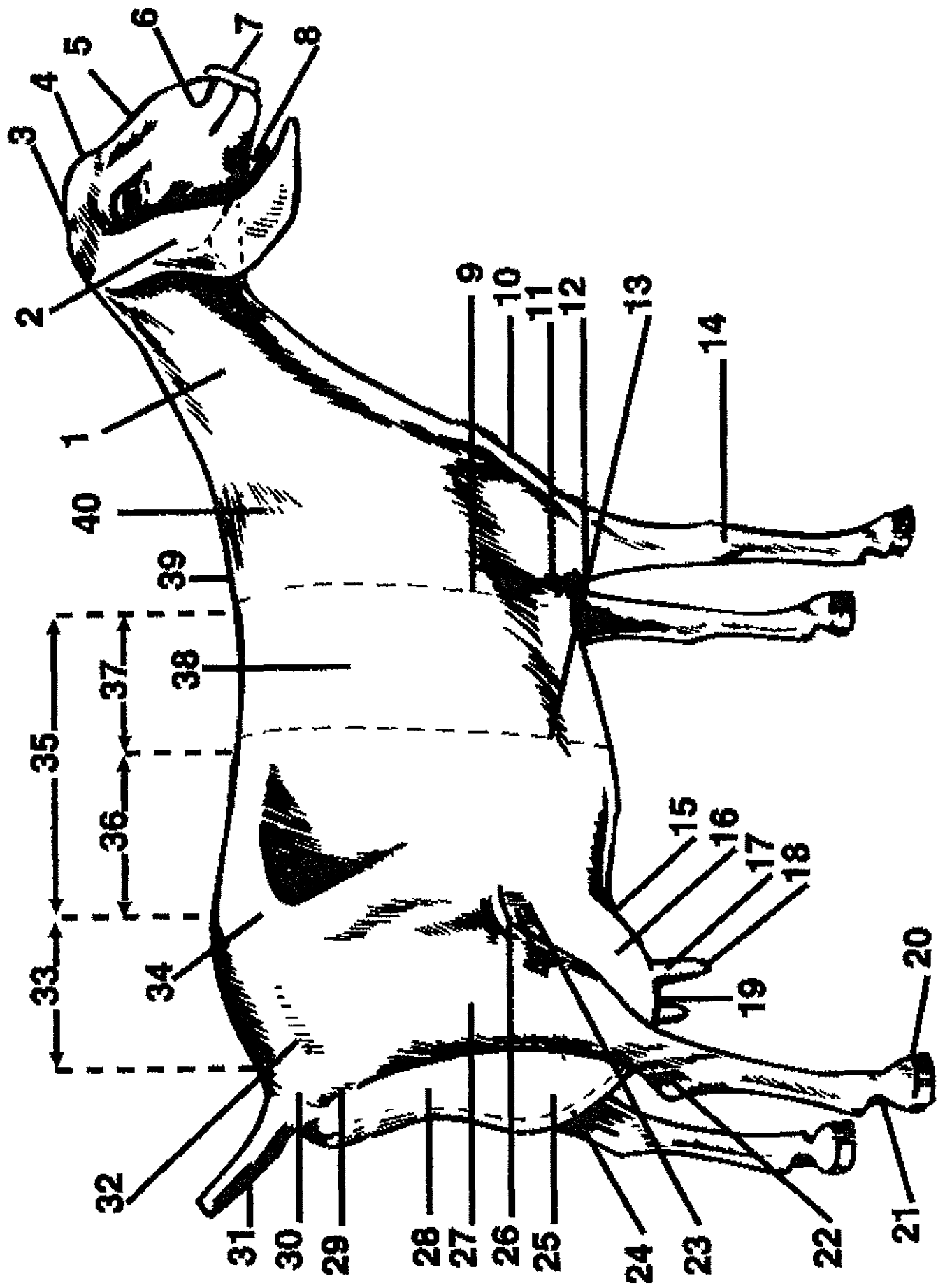
Begin learning the parts of the goat. Use a live animal or a drawing of a goat to help members learn the parts. The diagram of the Parts of the Goat on the next page corresponds to page 68 of the members manual.

### Parts of the Goat

1. neck	14. knee	27. thigh
2. ear	15. fore udder attachment	28. rear udder attachment
3. poll	16. fore udder	29. pin bone
4. forehead	17. teat	30. tail head
5. bridge of nose	18. orifice	31. tail
6. nostril	19. floor of udder	32. thurl
7. muzzle	20. hoof	33. rump
8. jaw	21. pastern	34. hip
9. heart girth	22. hock	35. back
10. brisket	23. flank	36. loin
11. point of elbow	24. medial suspensory ligament	37. chine
12. chest floor	25. rear udder	38. rib
13. barrel	26. stifle	39. withers
		40. shoulder blade

Suggestions for learning the parts.

1. Review the parts on a live animal with members referencing their manual. Point out random parts and have members answer. Encourage members to touch and feel the parts of the goat, especially the less obvious parts such as the bone structure of the pin bones, hip bones, thurls, ribs, shoulder blades. Be sure to ask the simpler parts from the younger or less experienced members, or match a senior and junior member together for this activity.
2. Have the blank goat parts diagram expanded and put the picture up on the wall. Greet members at the start of the project meeting with slips of paper, such as self-sticking notes, with each sticky note having a goat part listed. Have the members place the name of the part on the correct location on the picture.
3. *Worksheet 4: Goat Parts Crossword.*
4. Using a real goat, have senior 4-H members teach twenty parts to your junior 4-H members.
5. If your group has many experienced members, you might divide the group into two teams and have them name each part in turn. Make it like a spelling bee - an incorrect answer results in elimination from the match. When each person on the two teams has had a turn, start over with the remaining team members. Continue with rounds until there is only one team member left (or until one team is eliminated). You might choose to make this "name the parts" match into a regular part of your project meeting to help your members become comfortable with correct terms for judging goats. Members should realize



the importance of knowing the names of the parts of the goat. In most showmanship competitions, this is one of the areas of knowledge that competitors are questioned on by the judge. The judge will often point to three or four spots on the goat and ask the competitor to accurately name the part.

At the end of the project meeting, ask your members the following questions to summarize what they have learnt.

*How does learning the parts of a goat make it easier to talk about them?*

*How will knowing the body parts of a goat help you pick out a good one?*

## **SELECTING YOUR GOAT**

For members who are in the midst of choosing their 4-H goat project, once they have decided on the breed, the member should research breed characteristics. Encourage researching on the Internet, asking local breeders and visiting a goat show to learn more about a specific breed.

To prepare members to select their project animal, continue with judging goats, learning the body parts and putting the goat parts together to make the ideal goat. The member's manual has scorecards for dairy does, dairy bucks, dairy kids, pygmy goat, boer goat, market kid and angora goats, plus a pack goat type scorecard.

Project meeting suggestions are as follows:

1. Review the parts of the goat and by using pictures or a real animal, have the members describe or draw the ideal shape of each part of a goat.
2. *Worksheet 5: Which Goat is Closer to the Ideal?*, has two drawing of different Dairy goats. A checklist of the Dairy Goat Scorecard is summarized that has the members comparing between the two animals to determine the best overall goat.
3. Have a similar activity to Worksheet 5 but use two live animals and have members refer to the goat scorecards in their 4-H manual. You could do the activity with market goats, pygmy goats, pack goats or other goat projects.
4. Use the list of questions in Worksheet 5 and have the members compare two to four live goats.

At the completion of the selection scoresheet ask your members the following questions.

*How did you decide which goat to place first?*

*What was easy and hard about judging?*

*Why does it help to have an ideal in mind when choosing goats?*

## **BUILDING YOUR GOAT HERD**

This chapter in the member's manual is a start of assessing breeding animal quality. As the 4-H project units advance, many 4-H members will start to build their own goat herd. Being able to use their goat judging skills and compare their animal to the "ideal" by using the Goat Scorecards, the member will start building a goat herd that matches their ideal goat.

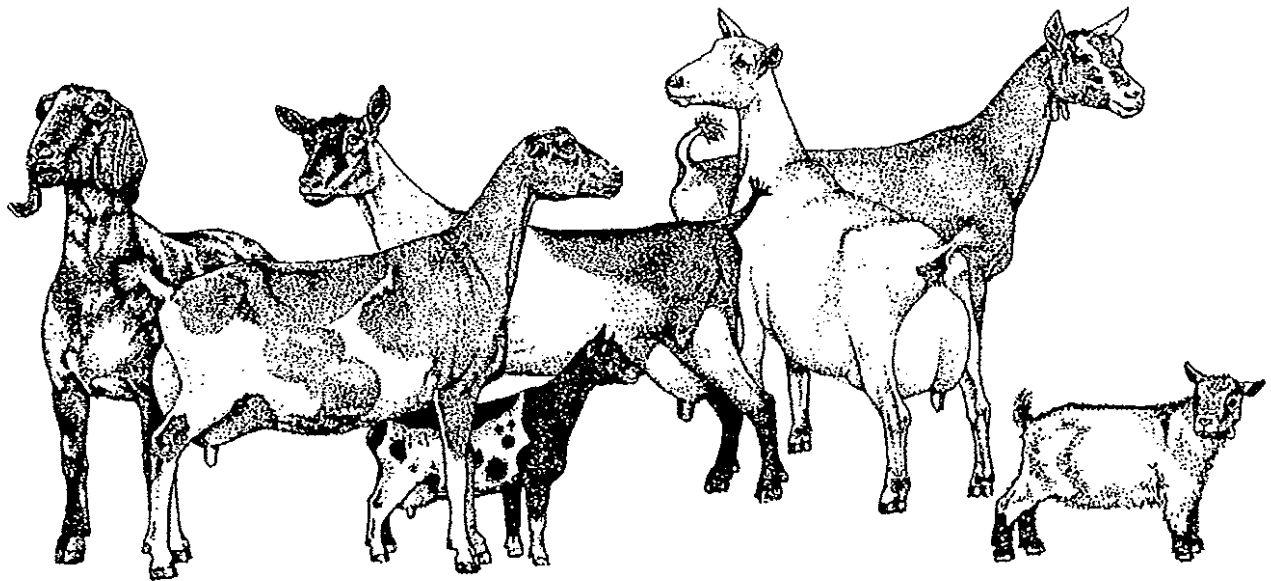
## CLASSIFICATION

Type classification is an impartial appraisal of the conformation of an animal by an experienced classifier. Thousands of animals are classified each year. Those classifying **GOOD PLUS**, **VERY GOOD** or **EXCELLENT** are above the average for the breed and should be the seed stock of the future. Those classified **GOOD** are useful animals that can be bred to top sires to raise improved daughters. Those classified **FAIR** may be good milkers but are not recommended as herd builders. Animals are classified as a comparison to the ideal of its breed. The animal is evaluated on conformation in several different areas, given a score in each area, and then given an overall score.

For more information about Classification, contact:

The Canadian Goat Society  
2417 Holly Lane  
Ottawa, ON, K1V 0M7  
Phone: 613-731-9894  
Fax: 613-731-0704

[www.goats.ca](http://www.goats.ca)



*Clipart by Angela K. Beltane*

Review the breeding systems: *Inbreeding*, *Line Breeding*, *Out Crossing*, *Cross Breeding* and *Grading Up*. Discuss the traits that are dominant and what traits are recessive in goats. Some traits will be more influenced by genes that other. For those traits, such as type or conformation, the breeding system is very important. Each breeding system has advantages and disadvantages.

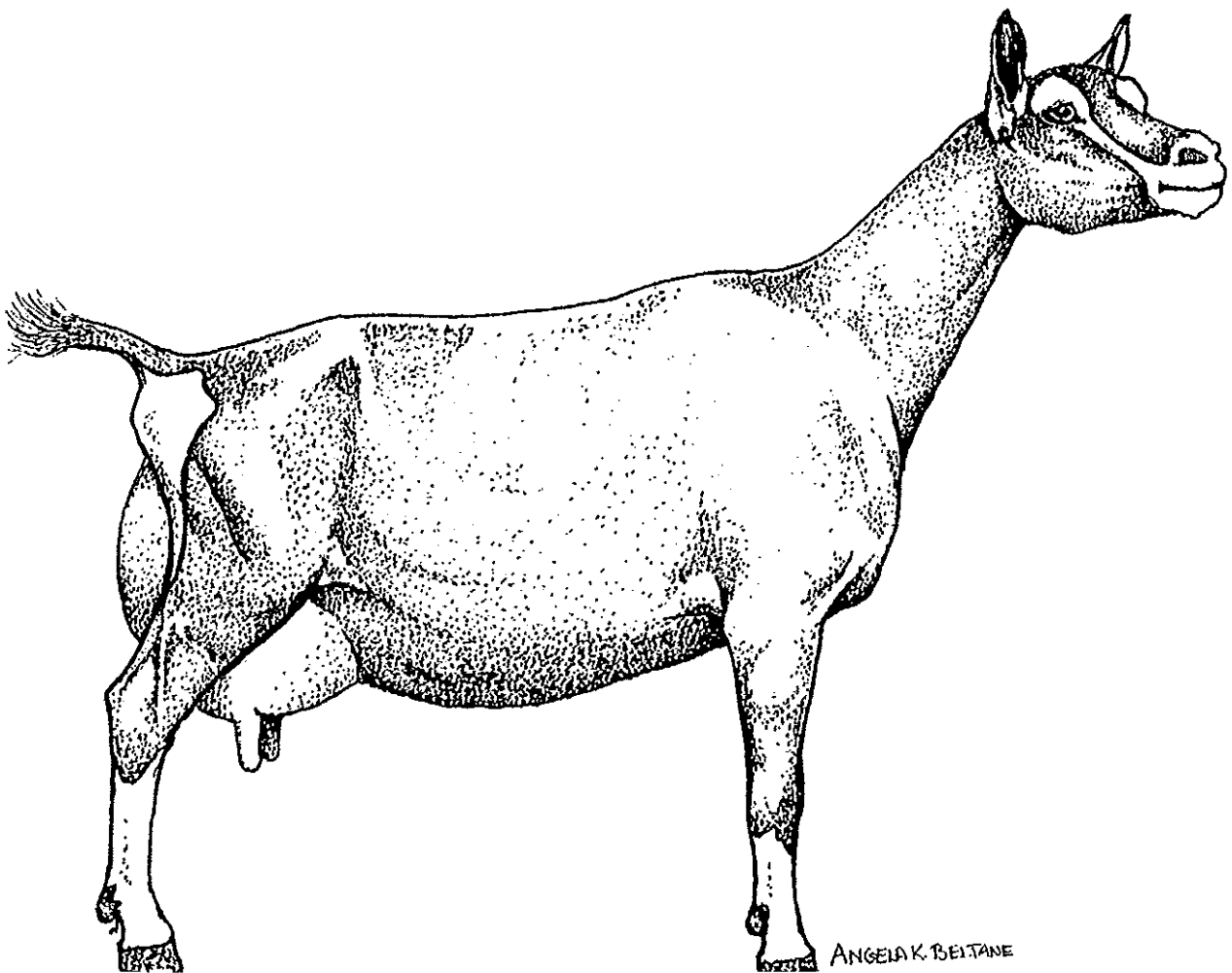
Worksheet 6, *Breeding Systems* has members looking at the breeding system used on two recent matings and the strengths and weaknesses observed in the offspring.

At the completion of the worksheet as summarize the activity with the following questions.

*Why did the breeder select one breeding system over another?*

*What did you find out about the five major breeding systems: inbreeding, linebreeding, outcrossing, crossbreeding and grading up?*

*If you were to use your 4-H project as a breeding animal, what breeding system would you use?*



## **BREEDING**

The objectives of this chapter in the member's manual is to teach the basics of reproduction, with a little about Artificial Insemination. The chapter also covers breeding problems, specifically mating polled goats. This chapter is useful for older 4-H members who are interested in breeding their project animals.

In preparation for the project meeting, have a tape used to measure goat's weight. If available, also have young kids for demonstration of naturally polled versus horned.

When explaining reproduction, the similarities can be made with humans. Most of your older 4-H members will have studied reproduction in school, so it is not new to them.

Demonstrate how to measure the heart girth of a doe to show members the proper weight for breeding.

For the section on breeding problems, you might wish to attempt to have two goat kids - one polled, the other horned (if disbudded or very young) so that members can see what a naturally polled goat looks like.

Ask your members if they intend to breed their project goats this year. Have they thought about where they will take the goat for breeding? Do they know how to tell when a goat is in heat?

Remember: For beginners, getting a goat bred is often a major ordeal. Most people have a great deal of difficulty telling when a goat is in heat. Be sure that members have a fairly good understanding of the signs of a doe in heat, and that they understand about the breeding season.

## **KIDDING**

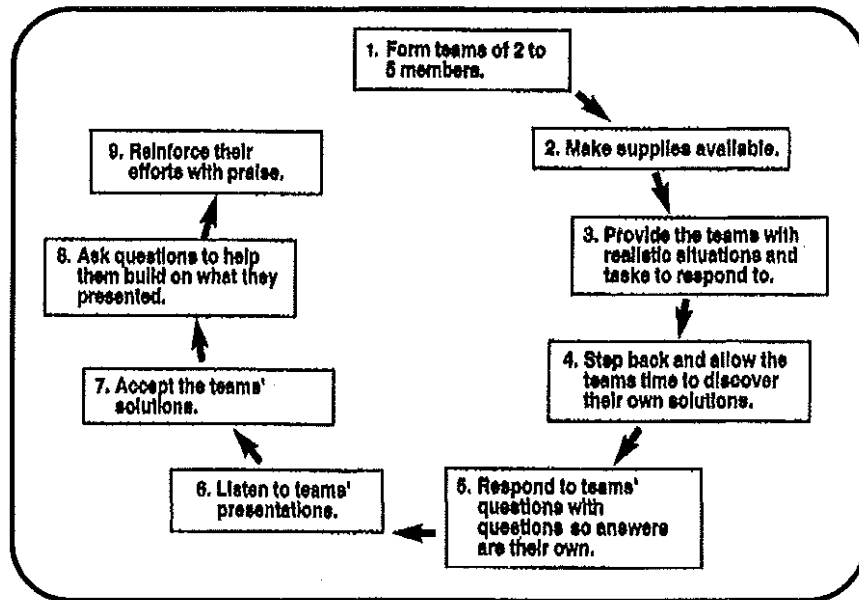
Kidding time is fun, but being prepared for the arrival of kids on a farm is very important. This chapter has activities to help 4-H members be prepared for the birth of their 4-H kids or to learn more about future goat projects.

Project meeting suggestions:

1. Prepare a cloth model of a kid to demonstrate the birthing process. You will need the cloth kid, a towel and a coffee can with both ends cut out. Put the cloth kid into several birthing positions and have members take turns guessing what position the kid is in. Determine how you might help deliver the kid in each case.
2. Prepare a Kidding Supply Kit. *Worksheet 7 Kidding Time* has the suggested supplies to put in the kidding kit. The worksheet also has normal birthing pictures for members to write captions for each picture of the birthing process.
3. Invite a goat breeder to the meeting or visit the farm to discuss the birthing process. How long should a normal birth take? How do you identify a possible abnormal birth?
4. Discuss colostrum and its importance to the kid. If you have samples or regular goat's milk and colostrum, you can ask members to compare them for colour and consistency.
5. Prepare a Goat Kidding quiz stations. Use the quiz station diagram on the next page to help you with activity.

## Quiz Stations

For each station, you need to prepare questions to ask and assemble any materials that will be needed to answer the questions or test the members skills.



### Quiz Station ideas are:

- Saving a weak, newborn kid.
- Delivering a kid goat.
- Giving injections into an orange.
- Caring for the newborn kid.
- Treating the navel.
- Giving colostrum.

## TATTOOING

A permanent tattoo is a means of identifying goats. For those members with a registered animal, that animal will have an identification tattoo. If the member breeds their project animal, the kids need to be tattooed.

### Project meeting suggestions:

1. You will need soft leather, alcohol and swabs, ink, an old toothbrush and a tattoo kit. Show how to use the tattoo kit to set up with the birth year letters and then herd number. Use the leather as a sample ear, demonstrating cleaning the tattoo site and then apply ink with the old toothbrush. Line up the tattoo pliers, explaining to members that when tattoo an actual animal, that the symbols are lined up parallel to the veins or cartilage. Apply more ink with the toothbrush and firmly hold for at least 15 seconds. Also demonstrate how to clean the tattooing equipment after use. Have the members practise on their own piece of leather.
2. The club could build a restraining box for tattooing and dehorning. Assemble the materials before the project meeting.
3. Using a live animal, show how to properly restrain the animal and demonstrate the tattooing.



## DEHORNING OR DISBUDDING

Demonstrate dehorning to inexperienced members who have a doe and kid project. Horns will need to be removed.

Project meeting suggestions:

1. Organize the project meeting at a farm with young goat kids. Demonstrate where the horn bud is located and have each member feel the skin on the horn bud. If the horn bud can be felt, it is time for dehorning.
2. Restrain the kid as humanely as possible, ideally in a tattooing & dehorning box. Have ice ready to ease the dehorning pain. Demonstrate clipping the hair around the horn bud and discuss the dehorning iron. Show members how to test the dehorning iron to ensure that the iron is ready for dehorning on a piece of wood. Dehorn the kid, explaining the procedure. Upon finishing the dehorning procedure apply ice to make the kid more comfortable. Give the kid a bottle of milk to help it calm. The horn bud should be treated with a powder antibiotic after the disbudding.
3. Possibility of having a dehorning demonstration by an experienced goat owner or veterinarian.

## MILKING

After kidding the doe will begin her lactation. Discuss the lactation of a doe with her first few days of lactation emphasizing the importance of colostrum and then the production of regular milk.

Project meeting(s) suggestions:

1. Review the hand milking and machine milking pictures in the members manual on pages 15 & 16. Note the areas of normal pressure and reduced/increased pressure.  
Fill a baby bottle or a balloon with water to indicate the way the pressure will change.  
Give members a glass of juice or water with a straw. Change pressure in the mouth by sucking in then feel the juice flow into the mouth to replace the air.
2. Demonstrate the milking procedure with a milking doe. Stress the importance of preventing mastitis. Demonstrate the California Mastitis Test.
3. Prepare *Worksheet 8: Milking Procedure*. Cut the procedures into strips and use them in one of the two following activities.
  - a) Distribute one strip to each member. The members then arrange themselves in the correct order - using the paper they are holding. Each member then reads his/her step, thus reinforcing the procedure to all members.
  - b) Divide club members into five teams. Distribute a step in the milking procedure to each team. The club then goes to the barn to milk the goat(s) and the teams carry out the step given to them, e.g. the team that has the instruction to wash the udder will do that job.
4. Discuss with the members the cleaning and sanitizing of milking equipment. As you demonstrate the milking procedure, make members aware of the chemicals that are being used for sanitation purposes. Stress how it is important to follow the instructions on the labels of all chemical solutions. Have the members fill out *Worksheet 9: Cleaning & Sanitizing Checklist*.
5. Discuss the lactation curve of a Dairy Goat's 305 day lactation cycle. Have the members complete *Worksheet 10: Plotting the Lactation Curve*.

## MILK MAGIC

The objectives of this chapter are:

1. To introduce the different types of milk that are available on the market.
2. To compare the different milk we get from goats, cows, and humans.
3. To reinforce the fact that good tasting healthy milk comes from well cared for, healthy does.
4. To stress the importance of pasteurizing the milk we drink.
5. To introduce simple recipes that can be made at a meeting.

Project Meeting(s) suggestions:

1. Plan a Taste Test. You will need enough of the milks suggested for all to sample a small portion. Put a sample of each into small drink cups and place each on a separate tray. Each tray to be numbered 1-7. Members will taste the milk from each tray and try to match it correctly on *Worksheet 11: TASTE IT!* You will need:

evaporated milk, buttermilk, skimmed milk, whole cow's milk, powdered milk, sweetened condensed milk and whole goat's milk.

**Be sure to use pasteurized milk for your samples!**

Discuss any differences noticed between the cow and goat milk. You may want to offer larger samples.

2. Compare the taste, appearance and texture of pasteurized cow and pasteurized goat milk. Supply a taste sample of each. Have each member report which sample they liked better and why. Have the group make a list of the similarities and difference that they notice between the two kinds of milk.
3. Discuss the pasteurization of milk. Investigate different ways to pasteurize milk - home pasteurizer, pot, double boiler, microwave, etc. Have available as many examples of this equipment as you can. The procedure of pasteurization in a double boiler is in the members manual.

Reinforce the importance of pasteurizing the milk that is used.

4. Plan to make one or two of the recipes on the next page. You could start your meeting by cooking or making one of these recipes, then while it's cooling or freezing, the business and other meeting information and activities could take place.

Milk review questions to summarize the material covered.

1. What is milk commonly called?  
**Milk is commonly called the nearly perfect food.**
2. What important mineral do we get from goat's milk?  
**Calcium is the most important mineral in any milk.**
3. Explain why pasteurization of dairy products is necessary for the protection of our health.  
**Raw milk may contain disease-producing bacteria which are destroyed during pasteurization.**
4. What dairy products can be made from goat's milk?  
**All dairy products can be made from goat's milk.**

## GOAT MILK RECIPES:

### ***NIPPY CHEESE***

Cut up some vegetables and make this dip.

Heat 8 L of goat milk to 100°C.

Stir in 125 mL white vinegar to separate the curds from the whey.

Strain the curds through a sieve or colander.

Add salt to taste.

Eat as is or try flavouring with one of the following: dill seed, chives, garlic, onions, your favourite herb blend, pepper.

Nippy cheese is also tasty when added to vegetable soup. Since the milk is heated to such a high temperature, the cheese keeps for a long time and does not develop off flavours.

### ***GOAT CHEESE SPREAD***

Set out your favourite crackers and make this spread.

Heat 4 L of sweet goat milk to almost boiling.

Add 65 ml apple cider vinegar and 5 mL baking soda.

Cool then strain through cheesecloth.

Place curd in bowl and add 125 mL butter.

Knead until a smooth paste.

Add 2 mL onion powder and 2 mL garlic salt.

Refrigerate and serve.

### ***MAKE YOUR OWN ICE CREAM!***

Have fun using your own individual ice cream maker. Serves 10.

1 L half and half (goat cream if available)

750 mL goat milk

1 can sweetened condensed milk

2 small packages instant pudding (your favourite flavour)

crushed ice and salt

Mix liquids and pudding together.

Pour into regular ice cream freezer, or 10 small metal cans.

Put cans in 10 cottage cheese cartons.

Put crushed ice and about 5 mL salt around the can.

Stir ice cream with spoon until slushy.

HINT: To make crushed ice, freeze water in empty milk cartons. Pound carton with hammer, open carton, and remove crushed ice.

### **BUTTER**

Whip up a batch of your favourite muffins and then add some home-made goat's butter.

Butter is produced by churning thick cream. The movement causes the fat globules to pack together. The butter is then washed and salted to extend its storage life. The liquid left in the churn is buttermilk.

250 mL cold cream, separated from goat milk

1.5 L ice water

0.5 ml salt

Pour cream into a clean jar with tight-fitting lid.

Shake jar until butter forms (about 50 minutes).

Pour off buttermilk.

Wash butter with cold water.

Press butter against side of jar or bowl with spatula to work out excess liquid.

Pour off water and repeat until water remains clear (be sure all excess water is worked out).

Add salt. Mix well.

Makes about 125 mL.

### **SOUR CREAM**

People used to make sour cream by letting the natural fermenting bacteria in cream sour it naturally. Since pasteurization destroys most of these organisms, naturally soured cream today often has an unpleasant flavour. The dairy industry produces commercial sour cream by adding a bacterial culture. The result is a delicious product with just the right degree of acidity.

You can make sour cream the same way at home, using cultured buttermilk as a starter.

500 mL table cream (10% butterfat)

25 mL buttermilk

Combine cream and buttermilk in stainless steel or glass bowl.

Cover and let stand undisturbed at room temperature until set (20 to 24 hours).

Refrigerate. Store in refrigerator for up to 3 days.

### **CREME FRAICHE**

This product, peculiar to French cuisine, was traditionally made by allowing heavy cream (cream with a high butterfat content) to ferment naturally until it thickened and became fairly firm. Because it required unpasteurized cream, however, we have to alter the recipe to use modern pasteurized products.

Creme fraiche has a slightly acid taste which goes well with fresh, cooked or processed fruit. It can also be used as a dessert topping. Try your home-made Creme Fraiche on the dessert suggestion below.

250 mL whipping cream

250 mL sour cream

Gradually add whipping cream to sour cream, beating only until smooth.

Cover and let stand at room temperature until very thick (8 to 12 hours).

Stir cream with a fork, cover and refrigerate at least 24 hours before using.

May be stored up to 7 days.

#### **MAPLE PEACH DESSERT**

2 - 540 mL cans of peach halves, well-drained

150 mL maple syrup

175 mL Creme fraiche

25 mL chopped nuts

For each serving, place two peach halves in dessert dish. Drizzle with 25 mL maple syrup. Top each half with about 15 mL creme fraiche. Garnish with nuts. Makes 6 servings.

## OTHER GOAT PRODUCTS

The objectives of this chapter are:

1. To make members aware of goat products on the market other than food products.
2. To let members experience some of these products.
3. To provide varied interests, and reasons for choosing a specific breed of goat for a project.

Project Meeting(s) suggestions:

1. Have the club make Goat Milk Soap. The directions are on the following page as a handout for your members. The recipe could be made in one meeting, then divided at the next meeting, when curing has taken place.

Bars of this soap make a good “thank you gift” for guest speakers at your meetings or could be used as a fund-raiser.

2. Explore Mohair. Plan to visit an Angora goat breeder. Find out if your club can share the shearing experience. Visit a hand spinner so your members will have a chance to try their hand at spinning, either with a drop spindle or with the spinning wheel.

A spinning supplemental page is on page 25 of your leader’s guide. Copy this sheet for your members.

*Worksheet 12: Spinning Tools* has spinning tools for the members to find the use of the tool in spinning. A good worksheet to visit Spinners and Weavers presentations at your local fairs.

*Comb:* The comb is used with the carders and is especially useful when working with long-haired fibres such as mohair.

*Threading Hooks:* The threading hooks are used to thread the lead from the bobbin through the spindle shaft in preparation to spin.

*Umbrella Swift, Niddy Noddy, Wrapping Reel:* These pieces of equipment are all useful when unwinding the spun yarn and forming it into skeins in preparation to sell, weave, or knit.

*Lazy Kate:* The lazy kate stores the bobbins, either empty or full, when not in use on the spinning wheel. The lazy kate can also be used when plying into 2, 3, or 4 ply yarns.

3. Kid leather is the most softest and delicate leather. Some members may want to try process kid leather themselves. Curing techniques are on page 26 and once again, photocopy this page as a supplement for your members.

Obtain some leather samples to note the differences in thickness, texture, etc.

4. Invite a goat owner who has a goat only for a pet to explain why they chose the goat as a pet. Invite a pygmy goat breeder to the meeting to provide club members with more information about this breed of goat.
5. Another by-product of every goat is manure. Your club might want to investigate the possibilities of using goat manure as fertilizer.
6. Introduce the goat as a meat-producing animal. Have members notice the areas of the world where goats provide the main source of food ... basically the Mediterranean area, the Middle East countries, and the West Indies. Invite a Boer Goat breeder to the meeting to provide club members with more information about this breed of goat.

Give members a chance to plan and organize a social activity related to the project. Have your members chose the recipes for the barbecue, the ingredients for the recipes will need to be readied.

# Goat Milk Soap

## Utensils needed:

electric mixer  
glass bowl - to hold 3 - 4 litres  
23 cm x 33 cm glass baking dish  
sharp, strong knife  
wooden spoon



## Ingredients:

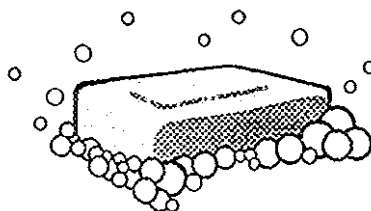
1 1/2 L goat milk  
200g lye (have an adult help you with measuring and adding this ingredient)  
60 mL borax  
500 mL oatmeal - refined in a blender  
120g glycerin  
2 kg clarified pork lard (can be purchased)

## Method:

Add lye to goat's milk in a glass bowl - this causes the milk to heat.  
Mix with a wooden spoon - then let sit until temperature cools to 33°C.  
Add borax, oatmeal and glycerine.  
Mix on low speed with mixer.  
Melt lard - cool to approximately 33°C.  
Add to mixture in bowl.  
Run mixer for 15 minutes. Let mixture sit 5 minutes.  
Run mixer for 5 minutes. Let mixture sit 5 minutes.  
Repeat once more but watch closely as soap will suddenly take shape.  
Pour into rectangular baking dish.  
Cover with a damp cloth and let sit for 24 hours.  
Cut soap into bars, set on rack, and let cure for 3-4 weeks.

This batch of soap makes about 24 bars.

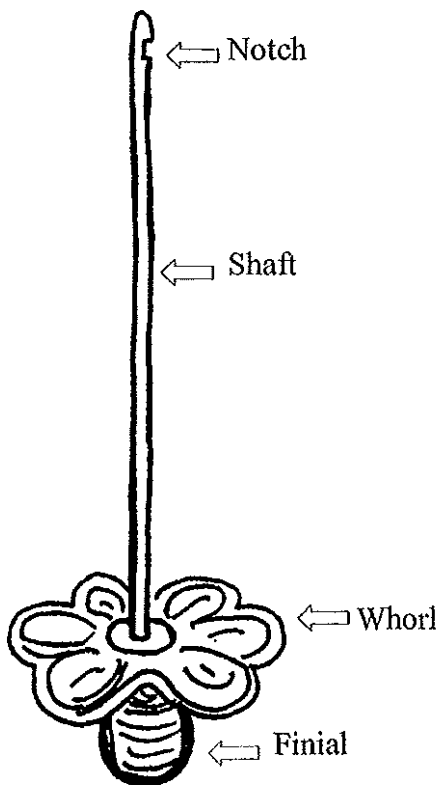
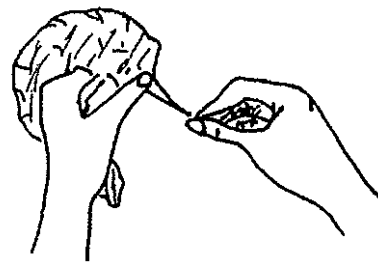
The oatmeal, although it forms a mild abrasive in the soap, can be left out.



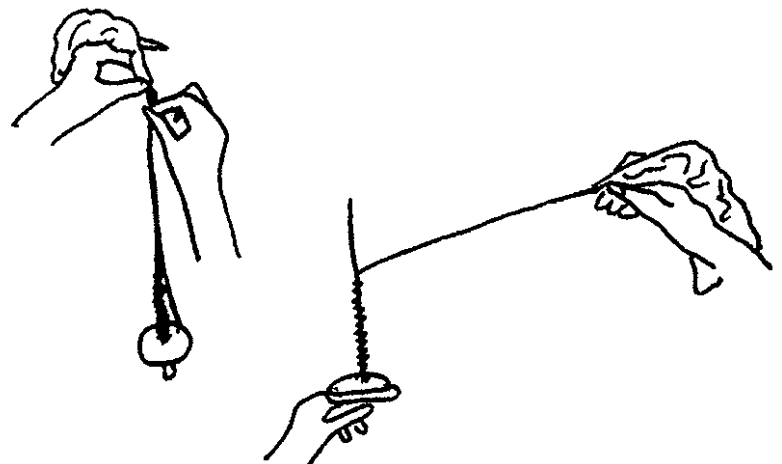
# Spinning

Spinning is a skill that is easily learned. Practice improves the skill. Spinning twists together fibres of different lengths to form a continuous thread or yarn.

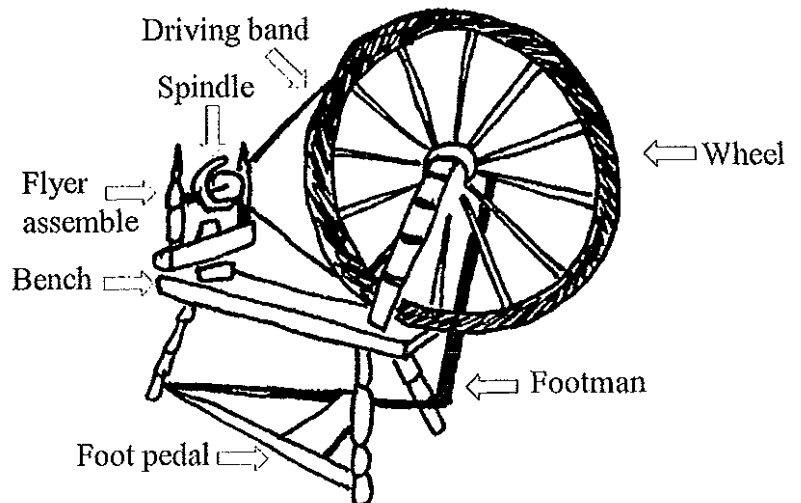
If fibres are held in one hand, while the other hand draws out a few fibres and twists them in one direction a yarn or thread is formed. The twist makes this fibre strong. The yarn is further strengthened by plying or twisting 2 or 3 threads together.



A **drop spindle** is a simple tool that allows you spin yarn more quickly and at the same time it provides a spool on which to wind the yarn.



The **spinning wheel** is another tool that can be used to speed up the process of turning wool/hair into yarn. Your foot is used to keep the fibre twisting and this frees the hands to draw the fibres and control the size of the yarn being spun. It takes practice to co-ordinate all the motions required to produce a lovely, soft, handspun yarn.



## Curing Kid Skins

Many worthwhile goods can be made from homecured kid skins.

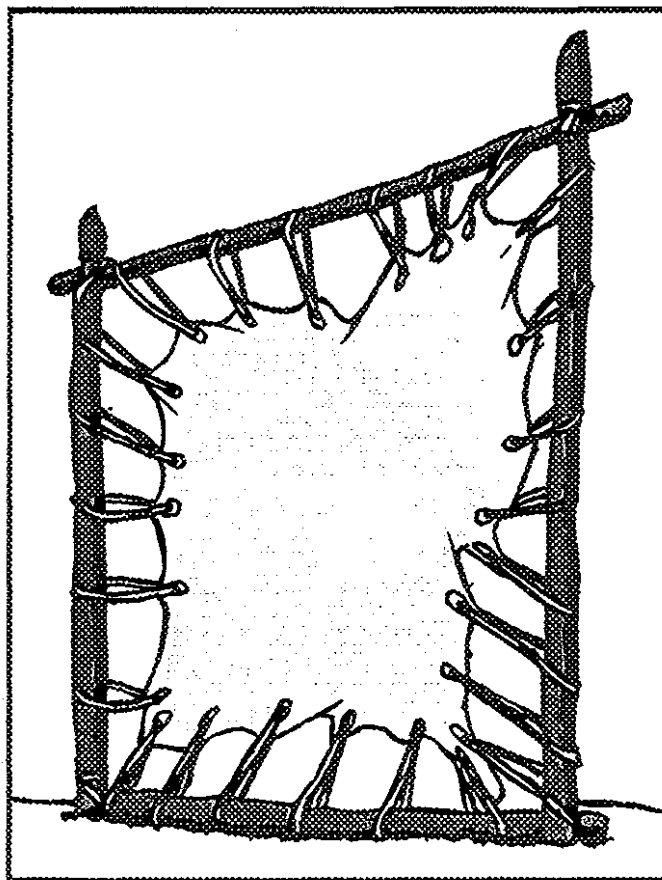
### Method 1:

Mix 1 lb. pulverized alum, 1/2 lb. of salt peter and twice its weight of bran. Wash the skin in hot water with strong soap suds. When the skin is damp, spread the bran mixture all over, 1 1/4 inch deep; fold the skin, fur side out, and leave in a cool place for a week. Scrape the mixture off and work the skin until it is soft.

### Method 2:

The skin should be removed as soon as possible and cleaned. Place the skin in a 25% formalin solution for one week. Remove the solution and wash in clean water until free of formalin. At this stage scrape away any surplus tissue from the skin. Carefully stretch the skin on a suitable sized board, flesh side out, use drawing pins to keep it in shape and taut. When dry, rub in lanacrolin oil to soften, and scrape the skin gently. This step should be repeated daily until the skin is clean, soft and pliable. The skin is then washed with household detergent to remove surplus lanacrolin, and restretched, to dry, fur side out.

Slippers, handbags and hats made from skins that have been mounted on felt or some thick, firm material, are very easy to sell or make splendid gifts.





# CHEVON

Goat meat is called chevon. It is a lean, high protein meat with a delicious taste all its own. Here is a collection of chevon recipes.

## *CHEVON PATTIES*

750g ground chevon	1 egg
6 small carrots, chopped finely	salt/pepper to taste
1 clove garlic	

Thoroughly blend meat and carrots. Mince garlic and blend with well-beaten egg. Add egg mixture to the meat mix. Add seasoning and blend thoroughly. Form mixture into compact patties of desired size.

## *QUICK CHOP DINNER - Serves 4*

4 shoulder chevon chops, trimmed	5 mL dried oregano
6 medium carrots, 3 cm pieces	pepper to taste
4 onions, cut in half	2 beef bouillon cubes
1 bay leaf	250 mL boiling water
5 mL dried thyme	

1. Brown chops well and arrange in single layer in shallow 2 L casserole. Add carrots, onions and bay leaf. Sprinkle with thyme, oregano and pepper. Dissolve bouillon cubes in boiling water and pour over chops. Bake 50 minutes, drain, bake 20 minutes longer, uncovered.

**OR**

2. Brown chops well and arrange chops in centre of appropriate sized square of double foil wrap. Add carrots, onions then sprinkle with herbs. Fold edges of foil carefully to seal any opening, so juices will be contained. Cook meal packets on the barbecue for 50 minutes, or until done. Open individual packets and serve with salad. These are also delicious served on a bed of rice.

## *CHEVON STEAKS*

4 shoulder steaks, 5 cm thick	5 mL paprika
25 mL salad oil	5 mL oregano or basil
salt and pepper	

Place steaks on wax paper.

Combine other ingredients and rub generously on both sides of steak.

Let stand for 1 hour at room temperature.

Broil or barbecue.

Serve with broiled tomatoes and backed potatoes.

## **NUTRITION**

What is nutrition? Review the material in this section, ask the members what things they need to live and grow and enjoy life. Relate these needs to the similar needs of a goat.

The section on types of energy, animals and objects might provide an opportunity to have members think of some other sources of energy and the animals or objects that would be matched with them.

*Worksheet 13: WHAT'S IN FEED* is an activity for members to match the nutrients to a feed description.

Answers: a-2, b-5, c-4, d-5, e-1, f-3, g-1, h-2, i-1, j-2, k-1, l-4

## **WHAT IS A RUMINANT?**

The objectives of this chapter are:

1. To explain how the ruminant animal digests its food.
2. To explain why water is vital to ruminant digestion and good health.

This section of the member's manual describes the goat digestive system. Review with your members the different types of digestive systems for different animals.

Discuss cud chewing and why goats do it. Encourage members to think of some reasons why goats chew cud. Ruminant animals chew cud because they must consume a large volume of plant material to get enough nutrients. This material is usually tough and fibrous and needs a great deal of chewing.

Project meeting(s) suggestions:

1. "The Rumen is like a Factory". The following is an experiment to show how we are able to see the results of microscopic activity that is similar to rumination in some ways.

You need:

- a bowl full of cold water
- a bowl full of warm water
- 15 mL sugar
- 1 pkg. yeast

Have the members prepare two small bowls of water. Have them fill one bowl about half full with cold water and fill the second bowl half full with water that feels warm to the wrist. Into the bowl of warm water dissolve a tablespoonful of sugar by stirring it in. Do not put sugar in the bowl of cold water. After this is done, sprinkle half of the packet of yeast on top of the bowl of cold water and the other half packet on the bowl of warm water. Set these aside for a few minutes.

Have members examine the yeast experiment to see what is happening. There should be a noticeable difference between the yeast action in the cold water without sugar and the warm water with sugar. Explain that the yeast in the bowl of cold water with no sugar is in an unfavourable environment. There is no food (sugar) and it is too cold, so that nothing much will happen.

On the other hand, in the bowl of warm water and sugar, the yeast have found a good home. The warm water is the temperature which yeast like best. The sugar supplies a carbohydrate food which the yeast will then transform into carbonic-acid gas (which helps bread to rise). In a similar manner, the microbes in the goat's rumen are living in a comfortable, warm environment. The goat eats cellulose foods (hay, grain, etc.) which become mixed with water in the rumen where the microbes are. They begin to break down this food and they, in turn, supply the goat with usable nutrients.

## 2. Is Water Important?

Try to help members to envision how much water is in a rumen. Have a 10 litre pail or a large barrel on hand if possible. Examples such as a cow having about 105 L of rumen capacity and a goat having a capacity about of about 46 L, etc. can help members understand just how much water and food materials are being processed in a goat or cow at any one time.

As reinforcement of the idea of milk being mostly water by weight, mix up a glass of powdered milk to show how the solid part of milk can be dehydrated down to such a small amount. This is why it is so important for milking animals to have a really good supply of water in order to produce milk.

Ask your members the following questions to stress the importance of water.

Q: How often should you water goats?

A: Goats must have water at all times, particularly in hot weather. It is best to replace water two or three times a day so that it is as fresh as possible, but once a day would be adequate as long as the water remains clean and there is enough so that the goats will always have something to drink.

Q: What temperature should the water be?

A: The water can be as cold as it comes from the tap. During the winter, water that has frozen on top should be emptied out and refilled with fresh water. Warm water is better than cold water. Goats will drink more water if it is warm and they will waste less body energy warming the water up once they have swallowed it. Warm water is not very convenient for most people so cold water is quite acceptable.

## 3. Photocopy two copies of the large drawing of the goat's digestive system on pages 30 & 31. Prepare two sets of cards in *Worksheet 14, Digestive Parts & their Functions*. Have the members cut the cards. Divide the club into two teams to complete this activity.

The diagram of the goat's digestive system should be placed on a table top. The members should lay the cards out on the correct spot on the diagram. Go through the parts beginning with the mouth and show the path which food takes in the digestive system. See which team can correctly put the cards on the parts in the least time (without using their manual diagrams).

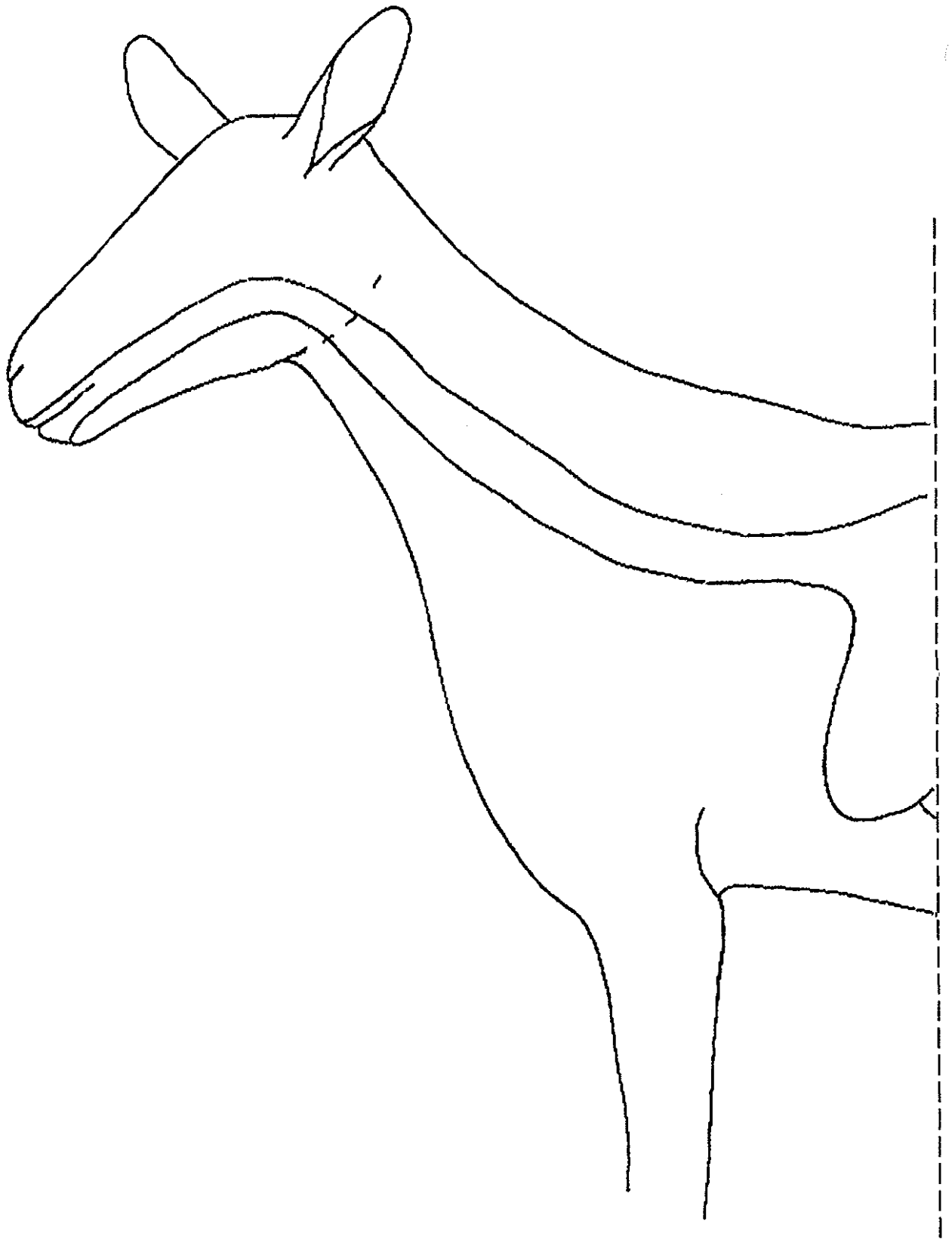
## 4. Arrange a digestive investigation workshop with your local veterinarian. Contact a meat goat breeder to arrange the meeting on slaughter day and have a digestive tract for the meeting. It is interesting to see the different textures and formation of each stomach.

At the completion of this section, have your members do *Worksheet 15, My Goat's Rumination!* Give the worksheet as a take home activity and have them observe their goat and report back for the next meeting.

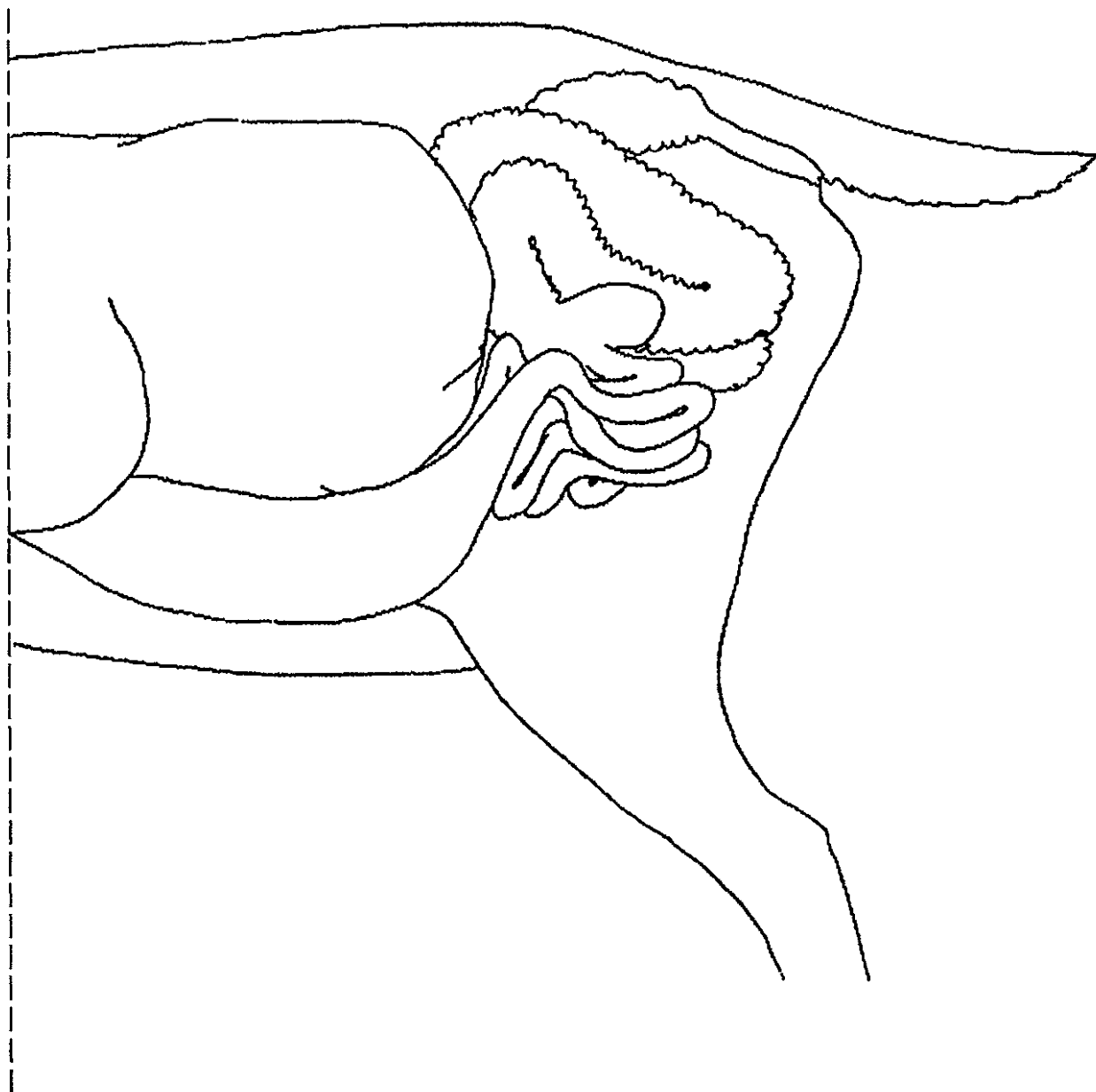
## **CLASSES OF FEED**

The objectives of this chapter of feed are:

1. To discuss the three groups of feed.
2. To explain the importance of forage in the diet of the ruminant.
3. To help the members develop skills in the evaluation of hay quality and the identification of grasses and legumes.



# The Goat's Digestive System



Project meeting(s) suggestions:

1. Prepare samples of the three groups of feed. Use the samples when discussing each group of feed supplies in the member's manual on page 26.
2. To discuss how hay is a more compact way of storing nutrients, use samples of fresh vs. dried grass. Pull three handfuls of grass and allow them to dry for a day or two before the meeting. Pull another three handfuls of grass just before the meeting. Bring this to show how much moisture is lost through drying of grasses. Most of the nutritional value of the forage is retained in the hay, but the bulk of the moisture is gone which makes the hay more compact and easier to store.

Have members come up with some reasons that might explain why farmers like to feed hay to animals.  
Possible answers:

- Hay crops are easy to grow in most parts of Canada.
  - Hay is quite easy to store.
  - Most farmers have the type of equipment required for hay.
  - Good quality hay is a very economical way of supplying nutrients.
  - Very good quality hay can replace much of the need for expensive grains.
  - Some people do not have pasture and rely on hay that they purchase.
  - Hay can replace pasture when the weather is too bad for grazing.
  - Pasture is not available in the winter.
3. Arrange before the meeting for members to bring in hay samples and have other samples of hay if available. Photocopy the hay description tags on page 33 of this manual and have the tags cut apart before the meeting.

The meeting can be quite messy, so it is best held outside or in a barn. To ease the clean-up, put a plastic sheet on the table or ground to place the samples on.

Give each of the members one of the hay description tags. Ask them to find a hay sample which best matches the description on the tag. Mention that one hay sample could be matched to several tags in some cases. Ask each member to explain why they picked the sample they chose as a match.

The hay samples also offer your members an opportunity to judge a hay class. Pretend they are judges at a fair and they have been asked to judge the hay class. They must choose the first three placings in the class. Have them give reasons for placing the first three samples.

Handout copies of hay varieties, pages 34 & 35, (cut apart). Divide the varieties between your members and have them match the hay variety with the hay samples.

4. Visit your closest B.C. Ministry of Agriculture, Food & Fisheries office or a feed supplier and ask to borrow the forage testing auger. Have a bale of hay to sample. Demonstrate how a sample is taken.

Invite a local feed sales representative to discuss forage analysis and how to read the results.

TO BE CUT OUT FOR TYPES OF HAY ACTIVITY

<p>High legume content second cut hay.</p>	<p>Hay which probably was rained on before it was baled.</p>
<p>Dusty hay. Hay with mould in it.</p>	<p>Hay which was cut when most of the grasses and legumes were young (an early cut hay).</p>
<p>Hay which was cut when the grasses and legumes were quite advanced in maturity.</p>	<p>Hay which was cut when it was past its prime. Older and longer.</p>
<p>Legume hay which has lost most of its leaves.</p>	<p>Legume hay that has a high leaf content.</p>
<p>Hay that was probably rained on while it was stoked, or left out on the field for a long time before it was stored.</p>	<p>Old hay which is probably more than a year old.</p>

## Forage Varieties



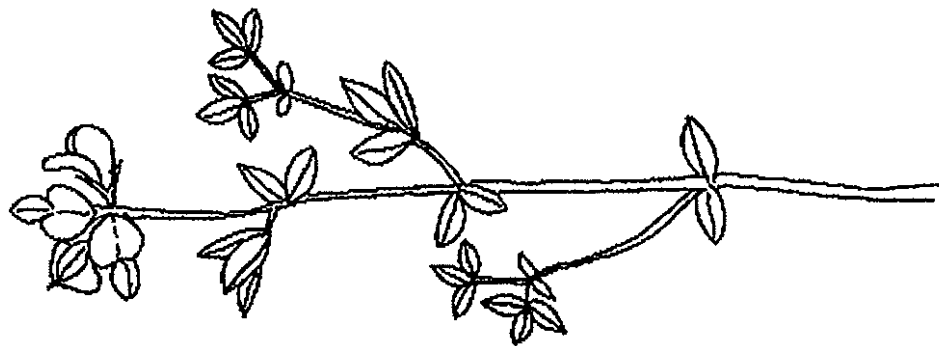
### ALFALFA

Long oval-shaped leaves with toothed edges. Small clusters of bluish-violet coloured flowers.



### RED CLOVER

A sturdy-looking legume with large oval-shaped leaves. Flowers are reddish-purple.

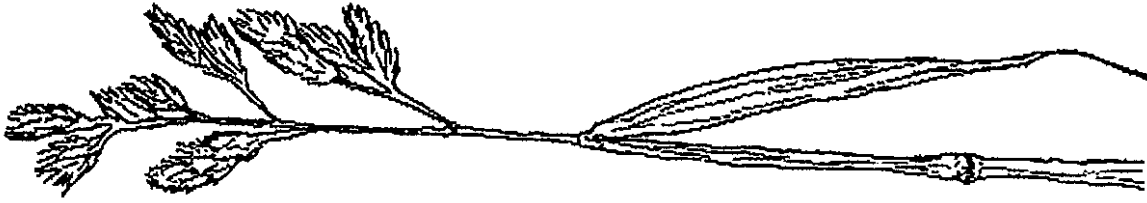


### TREFOIL

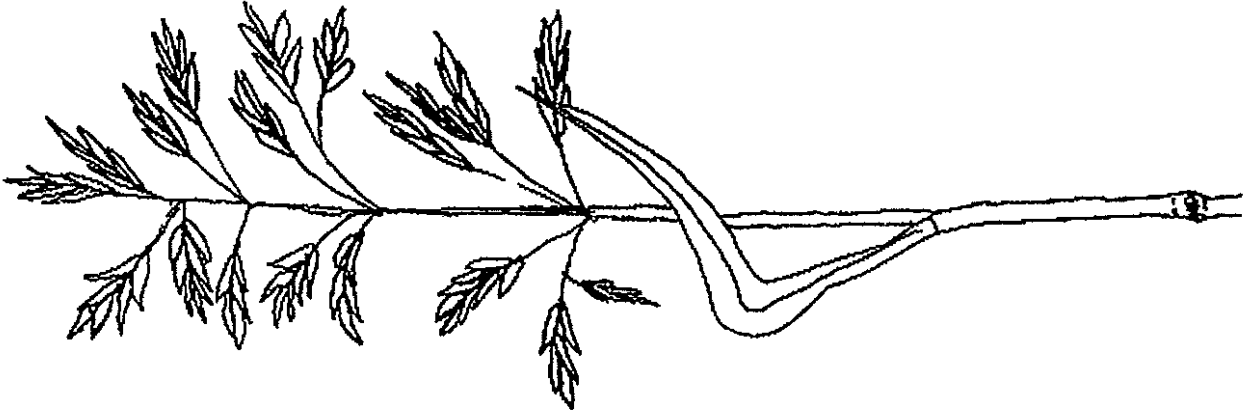
Legume with small pointed leaves. Flowers are brilliant yellow -- like small snapdragons.



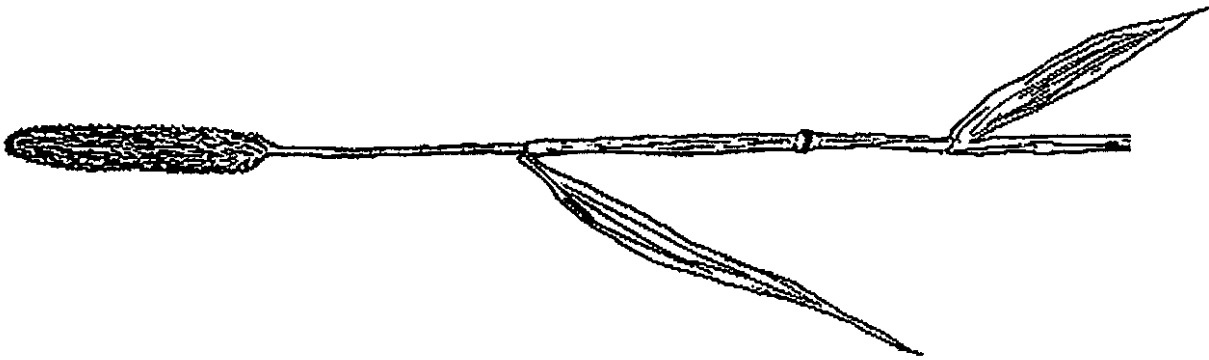
Forage Varieties



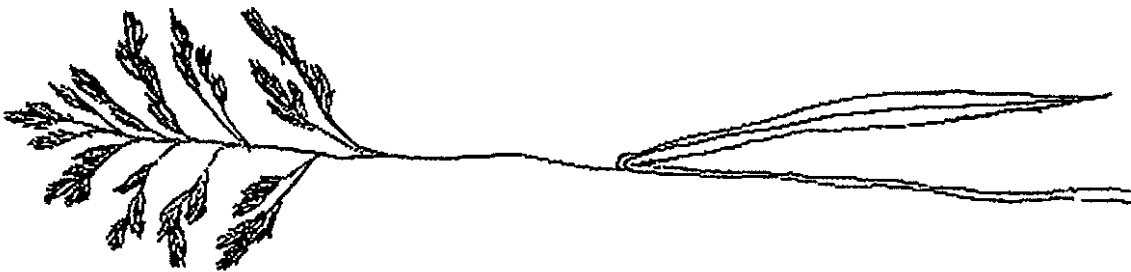
**ORCHARD GRASS**  
Tall, sturdy grass.



**BROME GRASS**  
Tall, sturdy grass.



**TIMOTHY**  
Characteristic seed head.



**FESCUE**  
Light, feathery grass.

## THE GREAT OUTDOORS

The objectives of this chapter are:

1. To explain how to make the best use of pastures (i.e. use of marginal land, pasture management).
2. To identify good and bad commonly found plants.

Project meeting(s) suggestions:

1. Have an outdoor meeting with a walk through a pasture or brush area to encourage plant identification. Plan on having one or two field guides on plants, weeds, wildflowers and trees (available in most libraries). If you are unfamiliar with field identification, you might wish to spend a little time before the meeting learning to recognise a few of the most common plants that members would see on the walk.
2. Invite a guest speaker to explain the best use of pastures. A person from a local feed and seed company or a local farmer who has experience in growing hay crops, grains and pasture could be invited as a speaker.
3. Prepare the following pasture management activity. You will need 3 pieces of bread ( or more if you have a large number of members). One piece of bread should be very fresh (still in its wrapper), one piece should have been out of the wrapper for a few hours, and one piece should be stale (out of the wrapper for a day or more).

Using the bread samples, ask each member to taste each of the three types of bread and decide which type they like most. Then, explain that pasture is a lot like bread. Goats like fresh pasture which is full of tender grasses. They will eat large quantities of good pasture. The slightly stale bread is like pasture that is still edible but not particularly enjoyed by the goats. They may not eat as much and it doesn't take long before the whole pasture becomes over-ripe (like the stale bread) and goats don't bother eating very much at all. As a result, the goats may lose weight and will not produce much milk when kept on old overgrown pasture.

4. Hand out the supplemental pages on Electric Fencing page 37 & 38 when reviewing pasture management.
5. Have weed and plant identification books (available from local libraries) for the meeting. Give members copies of *Worksheet 16 : Poisonous Wild Plants*. How would the members recognize these plants and keep them out of their fields? Are there any other poisonous plants we should be aware of?
6. Split the members into two groups and ask one group to think of some advantages and the other group disadvantages of turning goats out on pasture or browse. Some possible answers to these questions are:

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> <li>• Less work for the farmer. He/she doesn't have to gather food for the goats so this cuts down on labour.</li> <li>• Good pasture or browse is very nutritious - lots of vitamins.</li> <li>• The barn stays cleaner when goats are outside all day.</li> <li>• Goats can do a good job of clearing out unwanted trees and brush in fields.</li> <li>• Goats will get a lot of exercise while out grazing or browsing.</li> </ul>	<ul style="list-style-type: none"> <li>• Fencing on the farm must be good or goats will go where they aren't supposed to.</li> <li>• Some shelter must be provided for shade and protection from rain.</li> <li>• Fields can be over-grazed if they are not managed properly.</li> <li>• Goats will destroy trees in field where they are pastured.</li> <li>• Poisonous plants sometimes grow in pasture or brush and can kill goats or make them very ill.</li> <li>• While pasture is nutritious, it takes a large volume of grass, branches, etc. to provide adequate nutrition for goats as fresh feeds contain a large amount of water.</li> </ul>

## Electric Fencing Supplemental Information:

Electric fencing is easy to set up and may be cost-effective when fencing small areas of property. It also provides a good way to improve fencing that is in poor condition. Here is some information that might be helpful for anyone thinking about setting up an electric fencing system.

### Equipment Needed:

To set up any type of electric fencing system, you must have:

- a "Fence Controller" - also known as an energizer (the main "power supply" for the system). This can be either battery or hydro powered.
- a ground rod - galvanised steel is best - it should be several feet long and at least 1.5 cm in diameter.
- a cable to go from the "fence controller" to the ground rod, and a clamp to clamp the cable to the ground rod.
- fence wire to carry the charge to all areas of the enclosure.
- "insulators" to hold the fence wire in place and out of contact with anything that might "ground" the electrical charge.
- rods or fence posts to hold insulators and fence wire at proper height to prevent animals from going through the fence.

NOTE:

### Fence Controllers

A battery powered fence controller is OK for smaller fencing jobs, but it is not usually as good for a large job. However, the new higher priced battery powered fencers can be very effective.

Hydro powered fence controllers are usually much more reliable and more expensive. They must be kept inside of a barn or other shelter. Their big disadvantage is that they require a grounded electrical plug-in to operate. If the fence controller must be located away from the fenced area that it is powering, a single strand of wire can be run from the controller to the fence.

### Fence Wire

Heavy galvanised steel wire approved for electric fencing is the strongest and longest lasting. However, it can be difficult to install.

Polyethylene cord woven with fine steel wire is easier to install but has a life-span of 2 or 3 years. The new polyethylene "tape" woven with steel wire is much stronger, very easy to install, and should have a little longer life-span. It is very visible and is ideal for goats. It is more expensive than the polyethylene core wire.

### SETTING UP AN ELECTRIC FENCE

- Decide on the area you wish to fence in.
- Install the fence controller in an appropriate location. Install a ground rod near the controller and attach a cable from the controller to the rod.
- Using either insulators attached to wooden posts or pickets, or any type of commercial "electric fence rod" (see electric fence dealers to see what is available), set up posts around the perimeter of the field. Space between posts will depend on which wire you are using, the terrain you are fencing (i.e. a flat area requires less posts than a hilly area or an area with ditches), and any obstacles that must be "fenced around".
- With posts or pickets in place, install wire on pickets.
- Attach wire between fence controller and strands of wire on fence.

## Electric Fencing Supplemental Information

### **SPECIAL NOTES FOR FENCING IN GOATS**

- Goats usually require at least 3 strands of fencing to keep them in a field. The lowest strand should be about 20 to 30 cm from the ground (to prevent them from getting on their knees and sliding under the fence). The next strand should be set about chest-height to the goat (about 45 cm). The top strand should be about 75 cm from the ground.
- You will need to spend time “training” the goats to stay away from the electric fence. Leading a goat up to the wire and letting it receive a shock on the nose usually does the trick. You should be wearing rubber-soled shoes when you do this to minimize the shock if you happen to touch the wire. REMEMBER that you will be shocked too if you are touching the goat at the same time as it touches the electric fence! You must try to prevent the goat from jumping into or through the fence wire or it will pull down the fence and learn that it can go through a fence if it really wants to. A good way to prevent this and avoid a shock to you is to attach a nylon or baler twine leash to the goat’s collar. Lead the goat near to the fence and keep holding onto the leash. The goat will probably become curious about the wire and will reach out to touch it quite soon. When the goat touches the wire, pull on the leash to prevent it from going into the fence. You should receive little or no shock through the leash. You will have to repeat this procedure with each goat that will be in the field. You may also have to repeat this in the spring time when your goats go back out into the field for the first time each year.
- For more information, visit a feed store in your area and have a look at all of the electric fencing supplies that they sell. Talk to the store personnel, they can probably help you decide how best to fence your field. There are some good reference books on electric fencing available from manufacturers.

## ALTERNATIVE FEEDS FOR GOATS

The objectives of this chapter are:

1. To discuss alternative feeds for goats (browse, garden produce, etc.).
2. To discuss the need for grain rations as part of the goat's diet.

Project meeting(s) suggestions:

1. Prepare enough copies of Alternative Feeds, page 40 in this manual. Review the list and discuss what can or cannot be fed to goats. Be sure to stress that goat owners must be sure that the feeds they provide for goats are safe to eat. Mention that some feeds do cause unusual flavours in goat milk if they are fed within a few hours of milking time.

Members could collect samples of the listed garden plants to make a club display board of good & bad goat garden plants.

2. Demonstrate how different volumes of feed can contain the same nutrients. You will need a handful of unpopped popcorn and the same amount that has been popped and/or a handful of dried beans and the same amount that has been soaked in water overnight.

Explain that although the actual volume of the beans or corn has changed, the nutrients contained in either of them are the same in its original state as it is in the soaked or popped form.

*Worksheet 17: "Food Energy"* is a list of food that we eat. The food might be low in energy, but still gives us many vitamins and minerals.

Answers:

Celery - A, Raisins - B, Egg - B, Watermelon - A, Baked Beans - B, Lettuce - A, Popcorn - A, Cheese - B, Trail mix or granola bars - B, Potato Chips - A

3. Review the goat feed choices. *Worksheet 18: Feed Review.*

Answers:

1. TRUE - Wilted cherry or plum leaves are very poisonous to goats. In fact, these types of leaves should not be fed at any time of the year.
2. TRUE - Cedar branches are safe to feed to goats but they may change the flavour of the goat's milk.
3. TRUE - Rhubarb leaves are poisonous to goats. (Humans shouldn't eat them either.)
4. TRUE - Spinach is good for goats.
5. FALSE - Goats do not like old, long grass. It tastes about the same as stale bread tastes to us.
6. FALSE - Goats do not know the difference between safe and poisonous plants. Some bad plants taste bad and goats learn not to eat them, but some plants are so poisonous that even a few bits make the goat sick. Also, some poisonous plants taste good even though they are bad for the animal.
7. FALSE - Fields should never be grazed until they are only an inch tall. The grass will not grow back if it gets too short and the animals will trample the grass.
8. TRUE - Hay and pasture grasses are usually the same varieties.

## **CALCIUM, PHOSPHORUS AND OTHER MINERALS & VITAMINS ARE IMPORTANT!**

Try to emphasize the difference in nutrient values for different feeds in this section. You may wish to refer to the nutrient chart on page 39 of the member's manual.

Project meeting suggestions:

1. Compare nutrients found in one or two types of hay with those found in the nutrient chart or compare one or two types of grain.
2. Review the section on urea and discuss the dangers of feeding urea to goats. Members should be aware of the fact that urea grain rations are sold by some feed outlets and that they should be careful of accidental feeding.
3. Prepare *Worksheet 19: FEED TAG INGREDIENTS*. Have a tag off a sack of feed for members to complete this activity.

Summarize the meeting with questions:

1. Why is it important to feed a diet that includes the right amounts of each nutrient?
2. What will you now look for on feed tags?

## **FEEDING GUIDELINES FOR GOATS**

The feeding guidelines chapter objectives are:

1. To learn how to feed all types of goats from the kid to the milking doe.
2. To identify differences and similarities between the feeding of dairy, meat and mohair producing goats.
3. To understand the use and economics of milk replacer for kid raising.
4. To become aware of Caprine Arthritis Encephalitis (C.A.E.) and how to heat-treat colostrum milk and pasteurize regular milk.
5. To identify alternatives to goat's milk for raising kids (when it becomes necessary to find another milk source).
6. To learn how to tube feed a weak kid (optional activity).

Project meeting(s) suggestions:

1. This meeting could feature guest speakers such as area goat breeders (more than one if possible). They could speak about how they feed their goats. Time should be provided for members to ask questions. For interest, it might be advantageous to invite an owner from a meat, a dairy, a pygmy, a pack goat and an Angora goat herd.
2. Review the material on nutrition in the member's manual. There is quite a lot of material but it is broken down in small section (paragraphs on feeding different types of goats, etc.). Much of the material will be useful to members as resource material in the future.

You may wish to split the members up for this section, just covering the basics with junior members and more details with the senior members.

Or you can have the members work in groups and give each group a type of goat (i.e. age, stage in life,

sex) to read about and report on. Have each group give its report in the order that the material appears in the members' manual.

3. *Worksheet 20: My Goat's Ration* is an activity for members to complete at home. What do they feed their goat and is the ration meeting their goat's nutritional needs?
4. Discuss the pasteurization of milk and the heat-treating of colostrum in reference to Caprine Arthritis Encephalitis (C.A.E.). Refer to page 53 of the members' manual for details of C.A.E. as this information has become quite important to those in the goat industry. It is important for you to ensure that the members do not become overly alarmed by this section. In all likelihood, any of the project goats will have been raised on unpasteurised milk. C.A.E. control programs are very common in the goat industry and members may wish to raise further kids on a control program to eliminate the possibility of C.A.E.

For this section, you will need a thermos, towel, large pot or double boiler, dairy or candy thermometer, stove and a heat-proof container (i.e. mason jar). You should have about 2 litres of regular goat milk and if possible, about 250 to 500 mL of colostrum milk (cow or goat). **OPTIONAL:** If you wish to demonstrate pasteurisation of normal milk and colostrum, you will need something to strain the milk, the double boiler and thermometer, as well as cool water for cooling the milk.

Refer to the members' manual on page 36 for heating instructions. You may wish to show members what happens when colostrum is heated too long resulting in an "omelette".

5. "Tube Feeding a Kid". This section includes information on how to tube-feed a kid in an emergency situation. You and your members may wish to simulate the technique of tube-feeding. Do not actually pass a tube into a live kid. (A great opportunity to invite a veterinarian to your meeting to discuss or demonstrate this procedure.)

You may wish to demonstrate this skill. You should have a section of soft tubing about 2/3 metres long (aquarium air line tubing is appropriate if it is soft and clear). Stomach tubes can be purchased from outlets handling sheep and goat equipment. You should also have a small roll of any type of adhesive tape, a syringe (10 mL or larger), a small goat or a toy goat or a large outline of a goat kid drawn on paper or bristol board. (If one of your members has chosen to do a presentation of this skill as a special activity, you may wish to have him/her demonstrate this section of the meeting.)

## HOUSING

Begin by explaining what an environment is (i.e. that it is everything that surrounds a person, animal, or other living organism, and that affects its way of life.

Project meeting suggestions:

1. Goats also live in an environment. Ask members to describe some of the aspects of a goat's environment. It would have air, sound, temperature, space, light, other living animals or vegetation, and unseen things such as bacterial life.

It is important for goat owners to realize that an environment can be either good or bad. A good environment promotes good health and productivity, a poor one promotes poor health and low productivity.

*Worksheet 21: Environment* has two parts. The first part contains two cartoons of good and poor environment. Members can study these to help them recognize the differences between a good and bad environment from a “goat’s eye view”. You may encourage a discussion on this subject by doing the following.

Divide the group into two smaller groups. Flip a coin, or use some other means to assign one group as the “goats in the good environment”, and the other as “goats in the bad environment”. Ask members to spend a minute or two deciding how they will describe their good or bad environment. Then, giving each member a turn, have each group tell about its environment, living conditions, and the effect that their environment seems to have on them. If members have trouble thinking of categories for discussion, you might suggest some of the following: temperature, space to move in, noise level, sanitation, air quality, access to feeders and fresh water, amount and type of light.

Some examples of answers or ideas to discuss:

1. Too much humidity in a barn may lead to respiratory disease problems like pneumonia.
2. Poor sanitation leads to many health problems such as mastitis, internal parasites, or coccidia.
3. Overcrowded stalls lead to little exercise, stress on goats, lack of room at hay feeders - all resulting in a lack of production.
4. Lack of proper lighting can upset the natural reproduction cycle of the goat.
5. Unusual noises lead to stress and possible ill health.
6. Too much heat can result in heat stress and possibly death.
7. Too much cold can result in chilling or death of newborn goats, or lower milk production or weight gain in older animals as they must use food energy to keep warm instead of producing milk or meat.

The second part of the worksheet has four cartoons. Members can decide which point is being shown in each cartoon. *Suggestion:* Have members work out the answers together in groups. Have each group explain the meaning of each cartoon.

The cartoon answers are:

1. Keep feet trimmed properly.
  2. Prevent loud noise and upsetting distractions (dangers).
  3. Eliminate barnyard dangers.
  4. Feed and water proper amounts at regular intervals.
2. Have coloured yarn or a roll of string and a measuring tape for the meeting.

Ask member to decide how much “personal body space” they require. When most North Americans converse, they like to have at least their own arm’s length distance between themselves and the person they are talking to. If someone stands too close to us while we are talking, we often feel uncomfortable. Often we see this as a sign of aggression. Goats feel much the same about being kept in a small area with too many other goats. If two or more goats are kept in too small an area, some of the goats may feel that their “personal body space” is being invaded. This can lead to aggressive behaviour such as fighting. To demonstrate the effects of overcrowding, have your members work in pairs or groups of three. Have them converse with one another, maintaining eye contact with each other as they talk. Ask them to stand at a distance that seems comfortable for normal conversation. Now, ask them to step closer together while maintaining eye contact. Does this seem uncomfortable?



3. Have the members complete *Worksheet 22: Housing Goats* as a take home activity. This activity requires the members to decide how many goats they could comfortably house in the stalls that is illustrated on the worksheet. They have been supplied with information on the space requirements of adult and young goats. Remind members that they cannot include the floor area that is occupied by hay, aisles, feeders or waterers. This space cannot be occupied by the goat, so it is not used when calculating the living space of the stall.

Members should bring the completed activity page to the next meeting and the meeting should begin with a discussion of members' ideas about the way in which the stall space was used.

Answers to worksheet questions:

1. Stall One: 6 adults OR 6-8 young goats.
2. Stall Two: 4 adults, 4-5 young goats.
3. Should be at least 2 sq. m for adults and 1.5 to 2 sq. m for young goats.
4. 7 or more adult goats would be too many for Stall One.

## TYPES OF HOUSING

This chapters objectives are:

1. To outline the housing systems commonly used for goats.
2. To describe the kidding pens, kid housing and buck housing.

Project meeting suggestions:

1. Invite a goat farmer who has built his or her own barn or a building contractor who builds barns in the area.
2. Ask members if they remember some of the important factors that make up a good environment: good light, fresh air, no large drafts, adequate space, clean bedding, no loud noises, no dangerous objects or animals, proper access to food and clean water.

Discuss some of the possible types of buildings or structures that can be used as goat housing (i.e. new barns, older barns, garages, sheds). Here are a few questions that could be discussed along with some possible answers.

Q: What is the advantage of an older building?

A: There is little cost unless it requires major repairs or renovations. It usually requires very little time to make a building suitable for goats.

Q: What are some of the disadvantages of an older building?

A: You might have to put up with some inconveniences - e.g. The building might not be located in a convenient place on your farm; You will have to design a floor plan that works in with the general layout of the buildings (existing doors, windows, supporting beams or walls, water taps, etc...); The building may need costly repairs - and maybe the building isn't worth repairing because of its age or state of disrepair.

Q: What are some of the advantages of a new building?

A: It can be built exactly as you wish. You can decide on a floor plan that is suitable for your goat farm & this will make the barn efficient to work in. You can choose a convenient location for your new building.

Q: What are some of the disadvantages of a new building?

A: New buildings usually cost quite a bit to build. A new building may require several months to construct (depending on its size).

Q: If you are keeping your goat in a garage near your house, what are some of the things you might consider?

A: You will want to keep the goat's stall very clean to prevent odours. The manure pile should be located far away from the house and garage to reduce the number of stable flies that will come around. You might find that the goat will make quite a bit of noise - especially if it is kept alone.

3. Your group may discuss some of the different barn set-ups that are used for housing goats.

Encourage members to talk about their type of goat housing where the project goats are housed. Here are a few of the different set-ups. Also included are some of the good and bad points about each of these.

#### Loose Housing

The barn is arranged with large stalls that can accommodate several goats. This is the most common housing set-up found on goat farms of all sizes.

**ADVANTAGES:** The goats can move about at all times; the barn can be designed so that a tractor and loader can be driven into the stall areas to clean out bedding when required; large numbers of goats may be moved from one area to another with very little handling; there is less cost in materials to build a few large stalls rather than many little stalls; there is much flexibility in the way that a barn can be divided into stalls; goats usually like loose housing because they like to "socialize" with other goats.

**DISADVANTAGES:** There is usually less contact between the farmer and goats resulting in less individual attention. The farmer will have to make an extra effort to be sure that all goats are eating feed, drinking water, etc. Shy goats might be bullied by aggressive goats in a loose housing set-up. (However, this can be partially prevented by partly dividing a large stall into two or three sections with movable dividers. Goats can move to a different "room" if they are being bothered by aggressive goats.)

#### INDIVIDUAL STALLS

Some farms use an individual stall for each goat. Each stall is equipped with its own hay manger, feeder, salt lick, and water pail or waterer. This system is usually seen on smaller farms where there are only a few goats. However, it is sometimes seen on larger farms where the farmer has enough time to spend on individualized care for the goats.

**ADVANTAGES:** Goats receive individual care and the farmer must care for each goat in an individual way, so health problems or lack of appetite are more likely to be noticed. Shy goats cannot be bullied by aggressive goats. Hay and grain can be provided in a controlled way, so that high producers receive extra feed, while lower producers receive proportionately less. Contagious diseases are less likely to spread through the herd when animals are kept in separate stalls.

**DISADVANTAGES:** Goats need to be turned out into an exercise area on a regular basis, because individual stalls do not usually provide adequate room for real exercise. Goats may miss "socializing" with the rest of the herd. This system is more labour intensive because each stall must

be cleaned separately; feeding and watering is done one goat at a time; and milking goats must be brought to the milking parlour one at a time.

### TIE STALLS

Stanchion or tie stall housing is rarely used for goats. Unlike cattle, goats require much more exercise. Because they are much more active than cattle, they are easily injured by ropes, chains or stanchions as they attempt to move around. Tie stalls are not recommended for use in the goat barn.

4. Discuss the building of stalls for Does, Bucks , Kids and Pregnant Does. Throughout this section, emphasize cleanliness, especially in the maternity pen. Make a comparison with a nursery ward in a hospital.

When talking about kid housing, the members can relate to younger brothers or sisters and how they are usually very active and carefree. Kids are of the same temperament and need to be housed in a safe pen to prevent accidental injury. Also, if kids have access to an exercise yard, it can help build strong bones and bodies.

5. Arrange a tour of a commercial goat set-up. Try to visit one that is not too large, so that members can identify with it.

### **FEEDERS AND WATERERS**

Explain the feature of mangers, waterers, gates and dividers.

Project meeting suggestions:

1. An important feature of good manger design is that goats are not able to get their feet in their feed. Make sure members know this. Mention that keyholes can also be used to lock goats in for milking or for grain feeding (although this is often done on the milk stand). Also emphasize the safety element of all designs and all feeds should be built so that goats cannot become trapped or choked.
2. Have a blackboard, large pad of paper or flip sheet of paper available for the meeting. Ask members about their hay and grain feeders. Have them sketch their feeder and question them to see if their goat can put its feet in the manger. Also ask them if their goat tends to waste a lot of hay.
3. Show the importance of having clean water. Provide members with the choice of drinking from a clean glass of water or from water with chaff floating in it.
4. Ask your members how many of them have had their goat jump out of the pen or unlock the gate. Ask them the height of their pen walls.
5. Before the next meeting, have your members complete *Worksheet 23: The Goat's Eye View*. The members are asked to spend a few minutes in their project goat's stall. They are asked to answer a few questions about the stall - from the goat's point of view.

At your next meeting, ask each member to tell about their "Goat's Eye View" experience. What did everyone discover after spending some time in their goat's stall? How was the air? How dry was the bedding? Did it feel damp? Could the goat manage to put its feet into the feeder or waterer? Could a goat escape from the stall by jumping over a wall, into a feeder, or by playing with the lock or latch? Any other thoughts on "being a goat"?

## HEALTH & DISEASES

The first chapter dealing with the health of goats objectives are:

1. To discuss what causes diseases in goats.
2. To learn how diseases are prevented through good management.

Project meeting suggestions:

1. Ask members to think about the last time they were sick - how did they feel- how is it different from when they feel healthy?

Let members be aware that factors causing goat diseases are similar to what causes people to be sick. A comparison of the flu as an infectious disease and indigestion (e.g. too many sweets) as a nutritional illness might help to clarify the similarities.

The three categories of illnesses that affect goats are on page 45 of the members' manual and you can see that there are many types of organisms in a goat's environment. Also, to keep the relative size of these organisms in perspective, you can hold up the end of a pencil and comment that thousands of disease-causing bacteria can fit on the end of the pencil. Also, their reproduction is so fast under ideal conditions that one bacteria can reproduce/divide to give over 8,000,000 cells in 12 hours, the period between two milkings.

2. Ask members what they think the saying "An ounce of prevention is worth a pound of cure" means. Can they think of anything that they have learned that might apply to this saying (for example: good ventilation helps to prevent respiratory diseases).

This section has eight "tactics" that will help to prevent stress on the goat. Information has been included in the Members' Manual to help members work on ways to improve their own goat (or project) barn. However, instead of reading out this section, have members look at the picture on page 45 of a well cared for goat. It suggests the points that contribute to a healthy goat. Now, have members (individually or as a group) tell how they would solve each of the following problems. (Tactics 1 to 8 will provide answers to the following questions).

1. A goat gets a skin irritation on its udder from damp bedding. What would you do about it? (Tactic 1 - Clean out the stall, or if it is winter, put down lots of fresh bedding).
2. A goat gets foot rot because dirt gets stuck underneath the hoof walls that have folded over the soles of its feet. What would you do? (Tactic 5 - trim the feet properly so that dirt can't stick to them).
3. A goat is going to be going out onto pasture soon. What should you do? (Tactic 3 - turn it out for a little while each day until it is used to the fresh grass).
4. You hear that there is a lot of pink eye infection being spread from goat to goat. It is summer and there are a lot of flies around. What will you do about it. (Tactics 2 and 7 - Do your best to control flies around the farm. Do not let your goats come into contact with infected goats. Be sure that the barnyard is kept clean to discourage flies from coming around).
5. You have an aggressive goat that is fighting with some of your other goats. What are you going to do? (Tactic 8 - make sure that your goats aren't overcrowded. If necessary, take the bully out of the pen and put it in a stall by itself).

6. You bought a new goat and have just brought it home. What should you do before putting it in with the rest of your goats? (Tactic 7 - isolate it for at least two weeks to be sure that it isn't ill and even a little longer if possible. When you are sure that it is healthy, it can be added to your herd). An extra precaution would be to have the animal checked by a vet or an experienced goat breeder before adding to your herd.
7. Your goats are scratching themselves against walls and feeders. They seem to be losing patches of hair. What would you do? (Tactic 4 - the goats probably have lice. If the weather is warm, you could clip the goats. Dust them with rotenone powder to kill lice. You could also give an ivermectin compound orally or by injection to kill the blood-sucking type of lice.
8. Your goat might get cut or scratched by something in your barnyard. What could you do to prevent the goat from getting tetanus from the cut? (Tactic 6 - Vaccinate the goat with a tetanus vaccine).
3. Have members do "charades" of things that can be done to prevent health problems in the goat herd. You should assign the charade to each member and keep time - 1 minute per charade. Here are some ideas for charades: *Put screens on windows; put up a fly sticker; trim goat's feet; clip the goat; give a vaccination; throw away moldy hay; clean out the stall; isolate new goats arriving at the farm.*
4. Demonstrate, using a live animal, how to properly trim a goat's hoof. Also demonstrate de-worming.

## GOAT HEALTH SIGNS

The objectives of this chapter are to learn the signs of a healthy goats versus an sick goat.

Project meeting suggestions:

1. Invite an experience producer or a veterinarian to your meeting to relate some of his/her experiences relating to goat disease. You could go to the barn and see how the vet uses his/her stethoscope, thermometer and how he/she generally goes over a goat to determine its state of health.

Remind members prevention is most important when discussing goat health. However, as much as we try to keep down the population of disease-causing organisms and reduce stress, illness is bound to occur at some time. Early recognition is important.

2. Demonstrate how a goat's temperature is taken. For this you will need a livestock (rectal) thermometer, vaseline (or some other approved lubricant), and facial tissue or a paper towel. Emphasize how important the taking of temperatures is when trying to diagnose illness in goats. A high temperature is a sign of infection in an animal. A below normal temperature is a sign of shock, or of severe chilling. Both a very high or low temperature is considered to be a medical emergency. Normal body temperature can range between 38° C - 40° C (101° F - 104° F).
3. *Worksheet 24: Goat Health Signs* has members pretending that their veterinarian has asked them to collect information on the signs of a normal goat and the symptoms of a goat that is ill.

## COMMON DISEASES OF GOATS

This chapter outlines the more common goat diseases. The chapter is a reference chapter and not much time should be spent at the meeting.

Project meeting suggestion:

1. Have one member act as a sick goat. Assign him/her a disease, and have him/her refer to their

manual for the symptoms that he/she can act out. Another member will act as a veterinarian. Both members know what the disease is. The vet tells the members what symptoms he or she has noted on this sick goat. He or she keeps on dropping hints until the other members guess the disease.

2. Have the members complete *Worksheet 25: Common Diseases of Goats*. It is a herd health problems worksheet. The answers for the "Causes, Symptoms, Treatments" are:

1. G 2. E 3. H 4. D 5. C 6. B 7. D 8. F 9. B 10. H 11. A 12. C  
13. E 14. G 15. I 16. G 17. I 18. A

## **GIVING INJECTIONS**

This chapter outlines the sites of injections in goats and how to give an injection.

Project meeting suggestion:

1. Have a demonstration of how to give injections. You should have a needle and syringe, as well as a bottle of medication. Under supervision, members could try injecting food colouring into an orange.

## **FITTING AND SHOWING YOUR GOAT**

The chapter is quite self explanatory.

If your club is showing, mention to the members that there are things they can start doing now and on a regular basis to help ensure their goat is fit and ready for the show.

Members should:

- have a feeding program
- trim feet regularly, every 4 - 6 weeks
- brush goat regularly
- work with the goat and handle it a lot

Project meeting suggestion:

1. Organize an on farm meeting. Demonstrate how to train a goat to lead. Have senior members show junior and inexperienced members how goats are shown in the showing.
2. Have a variety of collars available to show members.

## **CLIPPING A GOAT**

"Learn to do by doing" is the best way for members to learn how to clip a goat.

Project meeting suggestion:

1. Bring animal clippers to a meeting and discuss the care of the equipment. Have a goat to demonstrate how to clip and in what directions. Refer to the care of the clippers as you are demonstrating.
2. If possible, arrange for some goats to be used as "clipping models". Partner an experienced member with an inexperienced member to practice clipping on their model. The model should also have its hooves clipped if needed.

## GETTING READY

Review this chapter as your club prepares for show day.

Project meeting suggestion:

1. Have a field trip where your members visit a goat show. Make a list of at least 10 parts of the show that required planning and organization.
2. *Worksheet 26: Goat Show Checklist* is a good activity to prepare your members for a show.

## SHOWING

An important chapter with lots of information about showing goats.

Project meeting suggestion:

1. Arrange for all members to bring their project animals together. Set up a show ring and have the members enter the ring and practice the showring manoeuvres. Have the members pose their animals and give them pointers to improve their showmanship skills.
2. Depending on the type of goat, practice a showmanship class. E.g. Dairy Goat Showmanship, Pygmy Goat Showmanship, Pack Goat Showmanship, etc.

## GOAT JUDGING

You should refer to this chapter many times during the year to help your members learn the parts of the goat and how to judge goats.

Project meeting(s) suggestion:

1. Prepare as many copies of *Worksheet 27: Name My Parts* so that every member has a copy.
2. Use a live goat for this activity. Hold the goat and go through the general appearance pointers regarding each part of the body. Have the members examine this goat using the questions asked in each category of the general appearance material.

Example: Breed character and colour: Does the goat have the correct colour for its breed? Are the markings correct? Are the ears correct for the breed, etc.?

Have them go over this together and try to help point out any good or bad examples. You could then do a judging activity using two or three goats. Place the animals and give reasons, keeping in mind the pointers just learned under general appearance.

3. Use a live goat, preferably a milking goat if this is possible, and go over the judging pointers on "Dairy Character". Be sure to have the members feel the skin of the dairy goat as described in the material. They should be encouraged to feel how wide and flat the ribs are on a dairy goat and how widely apart these are spaced. Also, how flat the thigh bone is and how little fat is carried by the dairy goat. Go over each of the points on the list and show where these parts are. Compare a second goat to the first or do a small judging class exercise and ask the members to apply what they have learned about Dairy Character when placing the goats and giving oral reasons.
4. You will need one or two dressmaker's measuring tapes. Review the material on Body Capacity while examining one or two live goats. Take a measuring tape (dressmaker's type) and have members measure the distance from the base of the neck to the chest floor on two or three animals which are about the same age and size. If possible, measure a couple of older goats as well. Take

the tape and measure the heart girth on two or three goats of the same age.

5. You may wish to review the judging pointers included in the members/ manual for this meeting. The pointers are on the Mammary System. It would be an advantage to have 2 or 3 milking animals carrying several hours of milk. The members can learn how to evaluate the different areas of the udder and should feel the udders to learn how texture is an important criterion for the judging of udders.

## GOAT PACKING

Members completing the pack goat 4-H unit will be knowledgeable about the basic aspects of the goat, or will be learning about them through other club activities. Activities are outlined on the Specific Project Regulations of 4-H Goats. All of these activities should be shared with the club. Leaders and members may identify other activities as achievement requirements, depending on the plans for the year.

The General Project Objectives are for the member to gain a basic knowledge of pack goats. Overall Objectives are for the member to learn about the following:

- Breeds of pack goats
- Why goats are suited for packing
- Basic husbandry and feeding of pack goats
- Basic pack goat equipment
- Basic hiking and first aid
- Judging pack goats
- Basic training of pack goats
- Showmanship
- Responsibility involved in taking care of a goat
- The fun of hiking with goats!

Project Meeting Suggestion:

1. Introduce your club to the pack goat 4-H project if you do not already have the project in your club. Invite a goat packer to your meeting.

Pack Goat Questions and Answers:

Juniors:

1. Name three backpacking essentials.  
*Extra food, whistle, matches, compass, blanket, map, flashlight, mirror, water, fire starter.*
2. Point out any two simple parts of the goats.  
*Poll, knee, hock, barrel etc.*
3. What is the difference between a soft pack and a cross buck pack?  
*A soft pack is made of fabric pockets and is placed across the goat's back. A cross buck pack is a wood frame that sits on a pad and has panniers slung onto it.*



4. Name a poisonous plant to goats.  
*Yew tree, rhododendron, deadly nightshade, etc.*
5. Name one thing you should always do before heading out on a hike.  
*Tell someone where you are going.*
6. Name the part of your goat that makes it a good pack goat.  
*Strong legs, good muscles, friendly, etc.*
7. What is one use for horns?  
*Fighting predators, scratching, etc.*
8. What should you always carrying when hiking?  
*10 essentials of hiking.*

#### Intermediate Members:

1. How can you tell if your goat is dehydrated?  
*Pull the skin out at the brisket. If the skin stays out, the goat is dehydrated.*
2. Name three items in a goat first aid kit.  
*Pepto bismol, muscle liniment, bandages, etc.*
3. Point out any two parts of the goat.  
*Cannon bone, withers, loin, chine, etc.*
4. How do you know if your pack is fitted correctly?  
*Check that it is not above the withers, that it does not pinch the spine, and that the straps do not rub or chafe.*
5. How old should a pack goat kid be when weaned?  
*3-4 months.*
6. What health function do horns provide?  
*Allow for dissipation of heat.*
7. What is the maximum amount a well-conditioned goat should be asked to carry?  
*30% of body weight.*
8. How far can a conditioned goat hike in a day?  
*15 miles.*

#### Senior Members:

1. What are some symptoms of CAE?  
*Swelling in the joints, hard udder tissue, etc.*
2. Why should you wait until your goat is three months old before castrating him?  
*To allow the urinary tract to develop fully to prevent stones.*
3. Point out any three parts of the goat.  
*Point of elbow, crops, stifle, thurl, etc.*
4. What is the proper angle for a cross buck saddle?  
*87 degrees.*
5. What should you do if you suspect your goat has been poisoned?  
*Feed activated charcoal or Pepto bismol.*

6. What is the function of the dewclaw?  
*For added traction on hills and cliffs.*
7. Explain why "hockiness" is desired in pack goats but not in dairy goats.  
*In pack goats, it increases agility. In dairy goats, it decreases space for the udder.*
8. Name a disadvantage and advantage to the breed you are showing.  
*Depends on the breed. Saanens - sunburning but good size, etc.*

## GOAT PROJECT MEETING HELPERS!

### ***INTERNET DETECTIVES***

The internet is a great means of finding vast information and surfing the web for goat related internet sites can be a great resource. Brainstorm with your club to form a list of different aspects of raising goat's and the goat project. Arrange to have some members use a computer with Internet hook-up and have them be your club's internet detectives. Have the members bring back information on their topics and create a notebook of goat information for reference purposes.

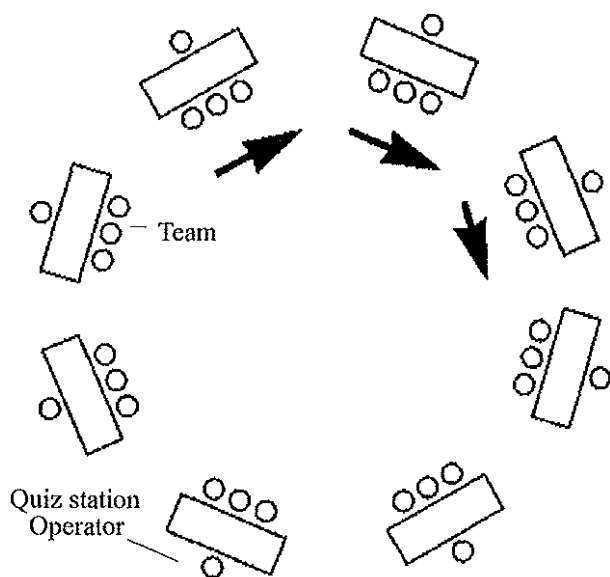
Some interesting Internet sites to get you started are:

- The Canadian Goat Society [www.goats.ca](http://www.goats.ca)
- Canadian Boer Goat Association [www.canadianboergoat.com](http://www.canadianboergoat.com)
- The Goat Magazine [www.goatmagazine.com](http://www.goatmagazine.com)
- Goat World [www.goatworld.com](http://www.goatworld.com)

### ***QUIZ STATIONS***

The quiz stations are a way of involving members and thier families in a challenging, noncompetitive, "learning to do by doing" activity. The quiz station works well at project meetings, group meetings, mall displays or at your local fair.

The quiz stations are made up of a series of learning stations at which teams are presented with realistic situations and tasks to do. The teams attempt to complete the tasks before being told or shown how. The operator at each station follows up with questions to help the teams build on their experiences.



#### How to Run the Quiz Station!

1. Form teams of 2 to 5 members.
2. Make supplies available.
3. Provide the teams with realistic situations and tasks to respond to.
4. Step back and allow the teams time to discover their own solutions.
5. Respond to teams' questions with questions so answers are their own.
6. Listen to teams' presentations.
7. Accept the teams' solutions.
8. Ask questions to help them build on what they presented.
9. Reinforce their efforts with praise.

Have your senior 4-H members help set up the quiz stations, as this is an excellent activity to practice their leadership skills. The planning committee will need to be organized, decisions made and signs made. A series of stations can be set up on almost any of the general areas listed on the next page in the Goat Project Ideas List. A suggestion is given below.

In preparation for the quiz stations have the members do the following:

- Decide on the stations wanted, considering time and resources available.
- Make up a realistic situation and task sign for each station so teams don't require additional directions.
- Decide who will be in charge of each station.
- Decide on the equipment and supplies needed at each station.
- Delegate responsibility for gathering supplies.

#### Station Operator

The role of the station operator is very important. This person has the following responsibilities:

- Become familiar with the topic.
- Develop several questions to ask.
- Allow the team members to discover for themselves how to accomplish the task, instead of telling or showing them how.
- Facilitate the learning using the steps of "How to Run a Quiz Station".

Depending on the size of the groups and the number of stations, group the members into teams of two or four. Start each team at a different station. Allow about ten minutes at each station, then ask each team to select a station and give a short presentation on how they solved that task. Follow up with questions about the overall activity.

### **SAMPLE QUIZ STATIONS**

#### **Identifying Parts of a Goat**

**Situation:** You have been asked to help the younger 4-Hers in your 4-H project group learn to locate the parts of a goat.

**Your Task:** Work together to match the names with the numbers on the chart.

#### **Delivering a Goat**

**Situation:** Your 4-H project doe is having problems delivering her kid unassisted.

**Your Task:** Demonstrate how to deliver the kid.

#### **Caring for a Newborn Goat**

**Situation:** Your doe has just delivered a beautiful kid.

**Your Task:** Demonstrate what to do during the kid's first 30 minutes of life.

#### **Saving a Weak Newborn Goat Kid**

**Situation:** One of the newborn twin goats is lying almost motionless on the snow-covered ground.

**Your Task:** Demonstrate what you would do to save this weak, chilled kid.

#### **Identifying Feed Ingredients**

**Situation:** Your local feed store manager has dropped off some feed ingredients for your project group's use.

**Your Task:** Identify the ingredients and divide them into categories of energy, protein, vitamins, minerals and water.

#### **Presenting Oral Reasons**

**Situation:** You have been asked to judge and give oral reasons on a class of four goats.

**Your Task:** Place the live goats (or pictures of the goats) and present your reasons why you placed them as you did.

#### **Producing a Commercial**

**Situation:** A radio station has invited you to produce a commercial on the benefits of goat milk.

**Your Task:** Record a 15-second commercial on a tape recorder.

## GOAT PROJECT IDEAS LIST

### **Selection and Judging**

- Identifying breeds of goats
- Identifying parts of goats
- Selecting a goat
- Constructing the ideal goat
- Understanding Pedigrees
- Recognizing abnormalities and faults in goats
- Presenting oral reasons
- Selecting a judging class

### **Management Practices**

- Identifying your goat
- Identifying project equipment
- Determining a goat's weight
- Tattooing a goat
- Trimming a goat's hooves
- Castrating a goat
- Dehorning a goat
- Weaning a kid
- Understand goat behaviour
- Setting goals for profitable production
- Constructing a goat manger
- A year in the life of a goat

### **Kidding Time Skills**

- Preparing the doe for kidding
- Caring for the newborn
- Delivering a goat
- Saving a weak newborn kid
- Freezing colostrum
- Removing a kid's extra teats

### **Health Practices**

- Recognizing the healthy goat
- Taking a goat's temperature, pulse and breathing rate
- Identifying herd health supplies
- Stocking the medicine cabinet
- Treating scours
- Treating foot rot
- Detecting and treating mastitis

- Examining a fecal sample for parasites
- Controlling external parasites
- Controlling internal parasites
- Vaccinating a goat
- Tracing the roundworm's life cycle
- Recognizing common goat health problems
- Outlining a herd health program
- Administering medication

### **Records and Recognition**

- Keeping feed records
- Keeping animal records
- Registering your animal
- Culling animals through records
- Selecting sires on production records

### **Feeds and Feeding**

- Identifying and classifying feed ingredients
- Selecting and judging hay
- Understanding a feed tag
- Feeding your project animal
- Sampling livestock forage
- Understanding animal nutrient requirements
- Formulating a ration
- Roaming through the rumen
- Following feed through the animal's digestive system

### **Fitting and Showing**

- Fitting your project animal
- Training a goat for show
- Clipping a goat
- Showing your goat
- Packing your show box for the fair

### **Reproduction and Genetics**

- Understanding systems of breeding
- Tracing the development of the fetus
- Understanding the heat cycle

### **Milk**

- Producing milk in a goat
- Using proper milking procedures
- Cleaning milking equipment
- Identifying milk products
- Making yogurt
- Making soap
- Evaluating milk flavours
- Preventing high bacterial count
- Preventing mastitis flare-ups
- Examining the composition of milk
- Understanding milk-related terms
- Making cheese
- Making butter

### ***Record Keeping Can Be Fun!***

Review the Livestock Record Book, 4-H Publication #398 at the beginning of the year. You can remove sections of the book that do not pertain to your members, plus you can add pages to make the generic record book a goat record book. Appendix I is a sample of a pack goat record book.

Some members enjoy keeping their 4-H record book while other members struggle to keep their record book current. Here are some record keeping games that could be added to club meetings to help encourage members that records can be fun.

1. **Search**: Divide the club into teams of two or three members. Give each team a set of cut-out record entries (page 56), tape and a record book. Instruct each team to tape the record entries, one by one, where they think they belong. After each team has taped in all items, have the teams check each other's records. If possible, the teams should resolve their own disagreements before you ask appropriate questions to help them reach agreement. Sometimes items will fit in more than one place. Be sure to praise their efforts for participating.
2. **Stump the Other Team**: Played just like Search except that each team prepares 10 - 15 entries for the other team to tape on a record.
3. **Record Quiz Bowl**: One team challenges another to see which can respond to the most questions or situations correctly. The questions are presented by the moderator, and the first team to give the correct response receives credit. Preparation for the quiz bowl may be minimal or elaborate. The participants will include two teams of members (two to four per team), a moderator to ask questions, a judge to indicate correctness of response, a scorekeeper and a timekeeper. Prepare a list of questions and answers; this activity is a good leadership skill for senior 4-H members.
4. **Record Feud**: This is played like the old TV game show, using the record book categories. For example: "What items would you list under Equipment and Supplies Inventory?" Make a list of items ahead of time, assigning each a value. Making the list could be given to a junior leader or have your parents do a list at the meeting before you plan to hold this game.
5. **Record Relay**: For good recreation, divide the group into two teams and form two lines. On the signal "go," the first one in each line races to a table, chooses a record entry item, decides where it belongs, tapes it in the record, runs back and tags the next person. Continue until everyone has entered two or three items. Have teams check each other's records.
6. **Spin the Record Bottle**: Put the record entries in a jar in the middle of the table. With members seated around the table, spin the jar. The 4-H'er closest to the mouth of the jar takes out an entry and places it on the group record, thus gaining one point. Continue to spin the jar until all entries are gone. The person with the most entries wins.

### ***Goat Careers***

There are hundreds of exciting careers available to interested youth. Prior to doing this activity, have your members research in newspapers, agricultural journals, on the internet, etc. for career ideas. Divide the club into groups of two to three and give them pencil, paper and a separate place to go within the room. Have a member draw a goat on a piece of paper or blackboard. Give each group the task of brainstorming as many jobs or careers that have something to do with goats as they can think of within 15 minutes. Set a time.

1. Picture of my project animal and me.	2. I received a second place ribbon in showmanship.	3. My goal is to Achieve in Unit 2.	4. Name of my 4-H club.
5. I attended 8 of the 9 club meetings held.	6. January 4, purchased 20 kg of mineral mix for \$9.25.	7. April 10, set up hay judging quiz station for a judging practice.	8. August 29, sold Maple for \$75.00.
9. Jan 29 did my 4-H speech at my club.	10. My name.	11. This year I learned the parts of my animal.	12. Purchased Maple for \$40 on March 15th.
13. My animal was bred October 7th.	14. This is my 4th year in 4-H.	15. \$10 transportation cost to attend local fair.	16. Sold an animal in the 4-H auction for \$85.
17. I Achieved in Unit 2 on August 1st at club Achievement Day.	18. My project animal had two female offspring on Feb. 14th.	19. April 29th, project group judged animals at Smith's farm.	20. Started project year with new brush worth \$4.25.
21. Project leader's signature.	22. Started the year with a neck chain valued at \$4.25.	23. Record started on September 28.	24. I plan to be a junior leader next year.
25. I got 75% on my goat dairy doe judging class.	26. I purchased my project animal from my neighbour.	27. Purchased 300 lb. of grain for \$35 on January 15.	28. Gave a demonstration on fitting and showing.
29. I plan to enrol in Unit 3 next year.	30. Maple gained 0.28 kg. per day.	31. Received \$4.50 in prize money from my local fair.	32. Helped a younger member learn the parts of an animal.
33. Pasture expense for the project year was \$18.	34. Nov.6, at a project meeting learned how to feed my animal.	35. May 15, attended district judging rally.	36. Veterinarian treated animal June 8 for \$18.
37. October 25th, member program planning committee.	38. Completed the feeding record on August 29.	39. Animal was bred to sire #9876432 on Oct 7.	40. August 28, showed my animal in the 4-H class at the local fair.
41. My brush was worth \$1.50 at the end of the year.	42. I'm in the fifth grade.	43. I tattooed my goat project on April 1.	44. I plan to do a demonstration at our local fair.

Have the groups come back to a big circle, and you or a youth begin writing career ideas on the board. Each small group contributes one idea (not all their ideas at once) as you go around the room. Make sure everyone has a chance to say at least one idea. Give your total group extra credit if they come up with 30 or more ideas.

For the second part of the activity, ask the total group for categories such as marketing, selling, and research. Write them on the flip chart or blackboard and have members put each job or career idea under a basic category. See how many new careers come to mind.

Finally, pick one or two careers that youth would like to explore. Determine what skills they need to learn to be good in them. For example, an artist who paints animals needs skills in perspective, shading and how to mix colours. A family doctor needs to be able to perform minor surgery, deliver babies, sew cuts and treat colds and other common diseases. Ask members to list five ways experts might learn their skills in addition to or besides going to school.

***Project Bingo***

Project Bingo is a fun and educational game that can be played by any number of participants of all ages. It's played with words, descriptions and definitions rather than only numbers. Begin by giving your members a piece of paper and have them make five columns and six rows on their paper, just like a regular Bingo card. Put one letter of G-O-A-T-S in each of the top squares. Next, ask the group to select five heading for the cards based on what the club has been studying. Examples might include breeds, equipment, careers, diseases, feed ingredients, pasture grass, minerals, parts of goats, milk products, wool terms, etc. After five headings have been selected and one assigned to each letter, ask each member to complete the squares under each category with appropriate words. For example under G-Goat Products, one member might fill in milk, cheese, ice cream, meat, wool, while another might have five other answers.

When each person has completed 25 words (24 if there is a free space), several variation for playing are possible. One way to keep everyone involved and keep the learning active is to ask the first person to say a word from any column and tell something about it. All players who have the same word put a bean or button on it. The next player then selects a second word under the same or different columns and repeats the process. This procedure continues until one person has G-O-A-T-S Bingo or five words in a row.

<b>G</b> Products	<b>O</b> Diseases	<b>A</b> Feeds	<b>T</b> Breeds	<b>S</b> Goat Parts
		<b>FREE</b>		





## All About Me

My Name: \_\_\_\_\_

My Address: \_\_\_\_\_

My Age: \_\_\_\_\_

My Birthday: \_\_\_\_\_

Years I've Been in 4-H and the Projects I've Done:  
\_\_\_\_\_

Name of My Club: \_\_\_\_\_

My Leader(s): \_\_\_\_\_

Why did I choose to do a Pack Goat Project?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What do I hope to learn/gain from doing this Project?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How do I expect my goat to benefit from this Project?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## All About My Goat

Name:

---

Birthdate:

---

Sex:

---

Breed:

---

Tattoo/ID no.

---

Name of Sire:

---

Name of Dam:

---

Why my goat will be a good pack goat:

---

---

---

---

---

Place a favorite picture or draw your goat below

## FEED RECORD

In pack goats, emphasis is not on market growth (all though a good size is desirable) and costs, because the goats are not sold at the end of the year. Instead of recording exact amounts and costs, the overall diet and corresponding growth is looked at.

<u>Month</u>	<u>What did I feed?</u>	<u>Height (1st of month)</u>	<u>Weight (1st of month)</u>	<u>Notes:</u>
<u>April</u>				
<u>May</u>				
<u>June</u>				
<u>July</u>				
<u>August</u>				
<u>TOTALS:</u> How could I improve my feeding methods?				

**Health Maintenance Checklist**

<b>Questions</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>
<b>Date of hoof trimming.</b>					
<b>Date of deworming/ medication/ dosage.</b>					
<b>Any other health updates?</b>					
<b>Salt and minerals given.</b>					

**List any health problems encountered and methods used to treat them.**

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**EQUIPMENT**

Did you invest in or make any pack goat equipment this year? If so, describe and include pictures. If not, describe what you would like to have and why.

**BREEDING**

If you are using a doe goat as your pack goat project and she is a yearling or two year old, you may be getting her bred in the near future. Are you breeding her to keep her kids as pack goats? Will you still use your doe for packing after she has kidded? Briefly discuss benefits/drawbacks of packing with a doe.

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**HIKE RECORD PAGE**  
(Photocopy as needed)

Date:

Time Out:

Time In:

Location/ Trail name:

Weather:

Trail Conditions:

Goats Taken:

Weight of Loads:

Distance Covered:

Notes/ Pictures:

**Monthly Training/ Conditioning Record**

Month: \_\_\_\_\_

Training Goals: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Progress/ Results: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Monthly Training/ Conditioning Record**

Month: \_\_\_\_\_

Training Goals: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Progress/ Results: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Each member is required to do a selection of special project on pack goats. Complete the following

**PROJECT EVALUATION**

Project chosen:

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Why did I choose this project?

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How did the project turn out?

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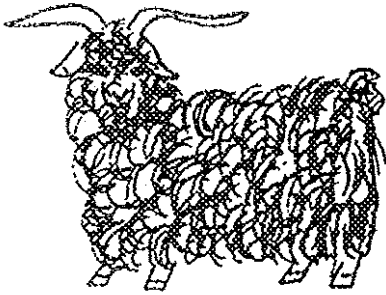
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Pictures!

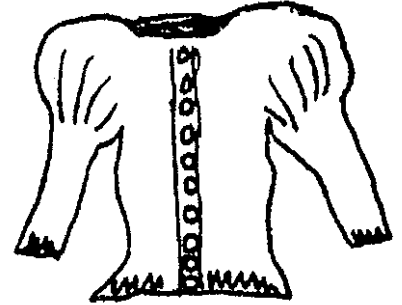


# WHO AM I?

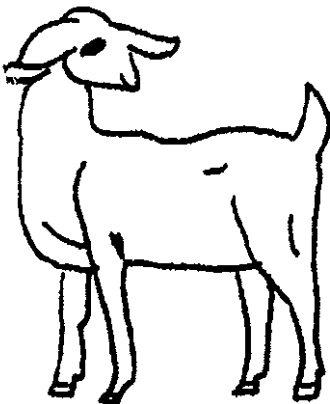
There are many reasons to raise goats. Goats produce many things that we can use. Match the products on the right with the goat that produces them from the left.



Angora Goat



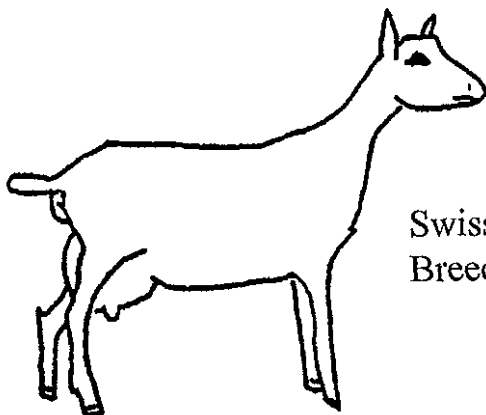
Knitwear



Market Kid

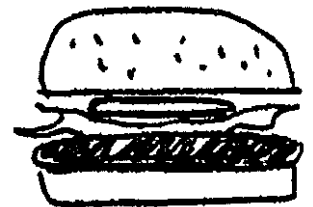


Dairy Products



Swiss Dairy Breed

Cheeseburger

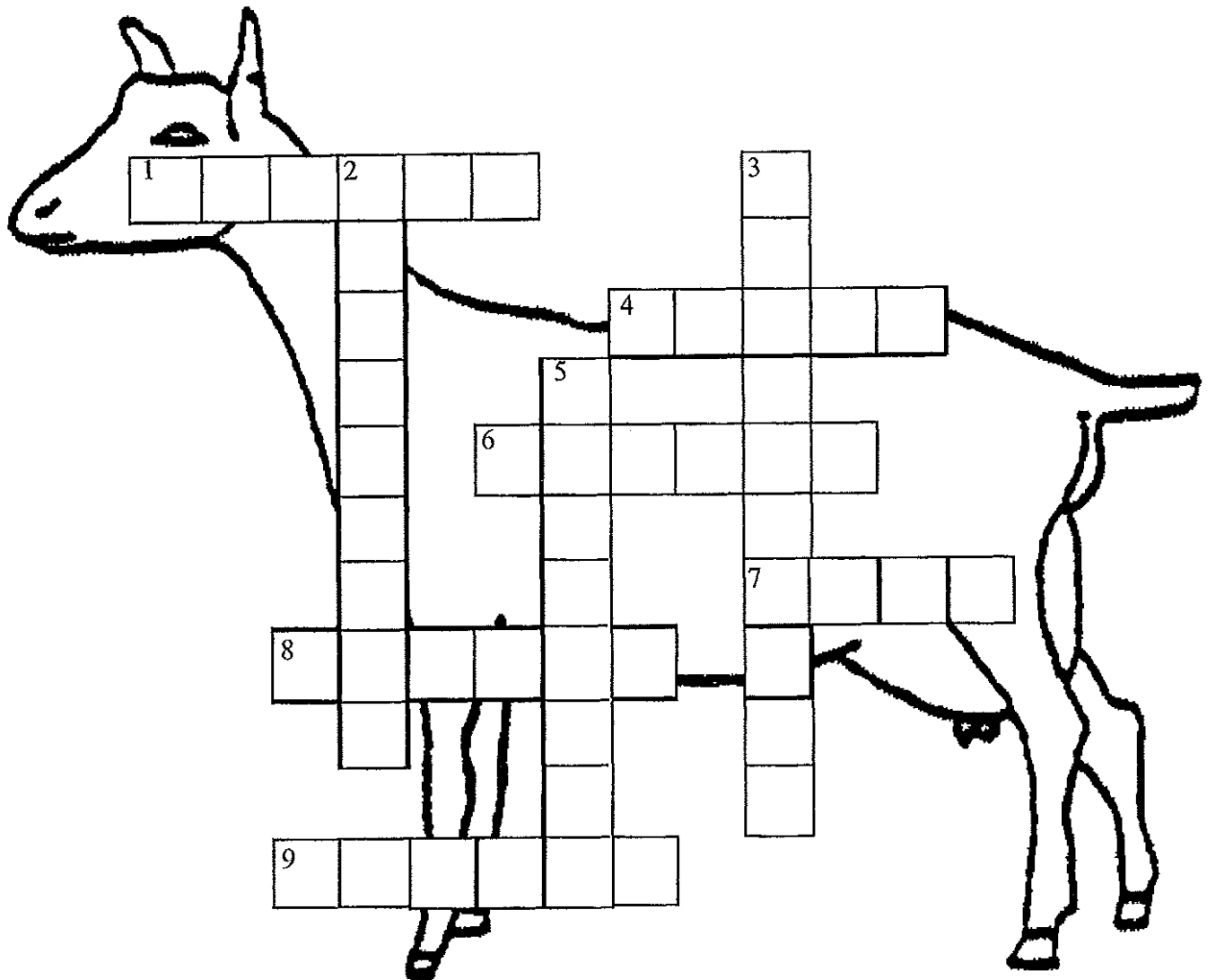


## Breeds of Goats

In the table Breeds of Goats are listed several types of goat projects and some of the breeds for each type. Write a short description of each breed, including such things as origin, temperament, size, colour etc. You can find out breed information on the Internet, books on goats or goat raisers are good sources of information.

Goat Project	Breed/Types of Goats	Description
Dairy goat	Oberhasli	<i>Medium size dairy goat, extremely quiet with mellow personality, good milk production.</i>
	Alpine	
	LaMancha	
	Toggenburg	
	Saanen	
	Nubian	
	Nigerian Dwarf	
Fleece goat	Angora	
	Cashmere	
Meat goat	Boer	
	Kiko	
Pack goat	All breeds	
	Crossbreeds	
Dual Purpose	Nubian	

## Goat Breed Crossword Puzzle



### Across:

1. This goat's fibre is known as mohair.
4. Small, compact, dual purpose goat.
6. The \_\_\_\_\_ is named after its place of origin in Switzerland.
7. Generally white goat with a reddish head.
8. The \_\_\_\_\_ dairy goat can be a combination of all colours.
9. This dairy breed has long, wide and pendulous ears.

### Down:

2. The most recent breed to join the Canadian Goat Society registry.
3. Dairy goat that resembles a deer in colour and markings.
5. The short-eared goat.

# Goat Parts Crossword

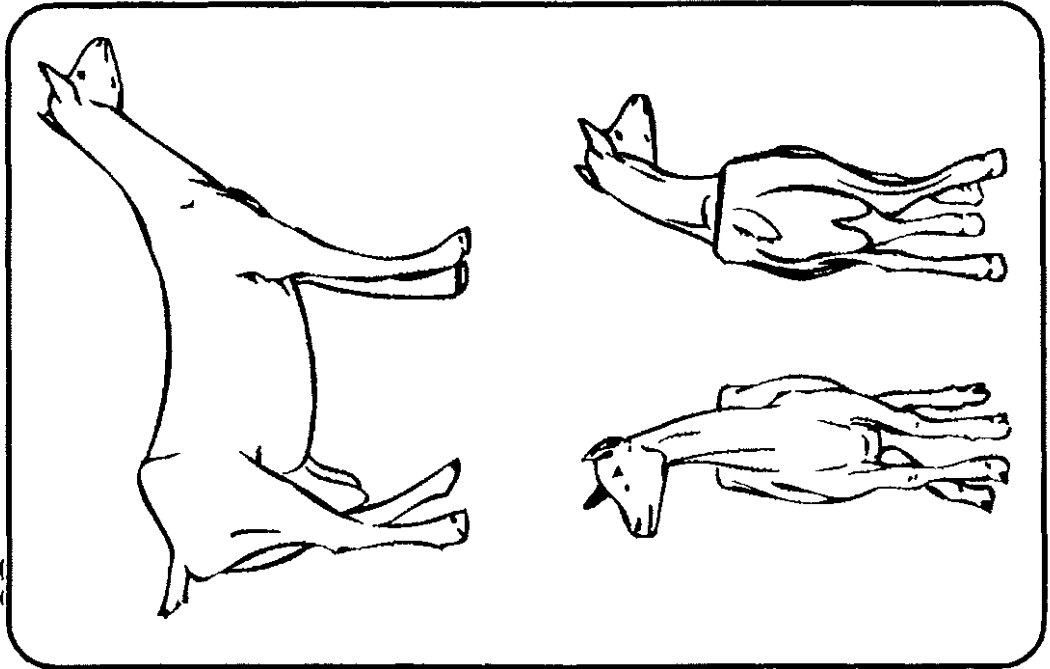
## Word Bank

- |                |                       |                   |                       |                 |
|----------------|-----------------------|-------------------|-----------------------|-----------------|
| back           | flank                 | hoof              | orifice               | shoulder blades |
| barrel         | floor of udder        | jaw               | pin bone              | sole            |
| bridge of nose | forehead              | knee              | point of elbow        | stifle          |
| brisket        | foreudder             | loin              | poll                  | tail            |
| chest floor    | fore udder attachment | medial suspensory | rear udder            | tail head       |
| chine          | heart girth           | ligament          | rear udder attachment | teat            |
| dewclaw        | heel                  | muzzle            | rib                   | thigh           |
| ear            | hip                   | neck              | rump                  | thurl           |
|                |                       | nostril           |                       | withers         |

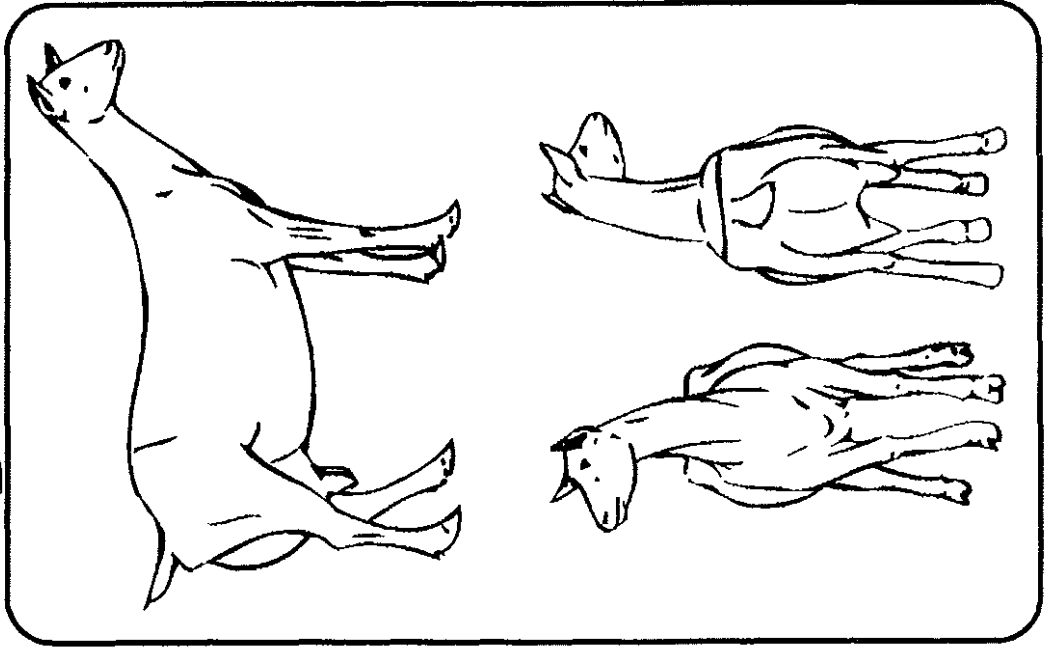
# Which Goat is Closer to the Ideal?

Select the goat which is closer to the ideal Dairy Goat. You will be using your goat body parts and the Dairy Goat Scorecard in your manual to help you with this exercise. Decide which goat is closer to the ideal dairy goat by answering the questions under each category on the attached page.

**A**



**B**



# DAIRY GOAT SCORECARD

Which goat is closer to the ideal?

Check your choices, then add up the totals.

## General Appearance (femininity and attractiveness) 35 points.

1. Which goat has the better nose structure and ears?
2. Which has a straighter top line?
3. Which is more nearly level from hips to pins?
4. Which has stronger pasterns?

<b>A</b>	<b>B</b>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which goat has the best general appearance?  Sub-Total

## Dairy Character (sharpness, lack of excess flesh) 15 points.

1. Which goat has a longer, leaner neck?
2. Which has more open ribbing?
3. Which is sharper in the withers?
4. Which is more angular (wedge-shaped)?

<b>A</b>	<b>B</b>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which goat has the best dairy character?  Sub-Total

## Body Capacity (size, depth and width throughout) 15 points.

1. Which goat has more width between her front legs?
2. Which is deeper in the heart girth?
3. Which has greater depth of rear rib?
4. Which has greater spring in the rib?

<b>A</b>	<b>B</b>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which goat has the best body capacity?  Sub-Total

## Mammary System (strength of attachment, shape, capacity) 35 points.

1. Which goat has a stronger medial suspensory ligament?
2. Which has the highest, widest rear attachment?
3. Which has a longer, smoother blending fore udder?
4. Which has more properly shaped teats?

<b>A</b>	<b>B</b>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which goat has the best mammary system?  Sub-Total

## Best Overall Goat (Check A or B)

**A** 
                 
 **B**

**TOTAL SCORE**      \_\_\_\_\_

## Herd Breeding Systems

For this activity you'll need to know the difference between each of the breeding systems listed in your 4-H manual and why you would use one over another. Then fill in the breeding system that you or someone you know used on two recent matings. Observe the offspring and list the strengths and the weaknesses observed in the offspring. An example is provided.

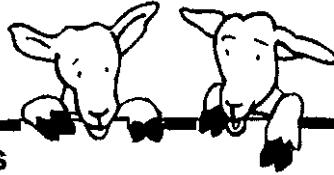
<b>Herd Breeding Systems</b> <i>Example</i>	
<b>Sire &amp; Dam</b>	<i>Rocky and Sadie</i>
<b>Relationship of Sire and Dam</b>	<i>none</i>
<b>Breeding System Used</b>	<i>Outcrossing</i>
<b>Strengths of Offspring</b>	<i>Correctness of feet and legs</i>
<b>Weaknesses of Offspring</b>	<i>Lacking body capacity being shallow in the rib, &amp; shorter backed</i>

<b>Herd Breeding Systems</b> <i>Example</i>	
<b>Sire &amp; Dam</b>	
<b>Relationship of Sire and Dam</b>	
<b>Breeding System Used</b>	
<b>Strengths of Offspring</b>	
<b>Weaknesses of Offspring</b>	

<b>Herd Breeding Systems</b> <i>Example</i>	
<b>Sire &amp; Dam</b>	
<b>Relationship of Sire and Dam</b>	
<b>Breeding System Used</b>	
<b>Strengths of Offspring</b>	
<b>Weaknesses of Offspring</b>	

## KIDDING TIME

Kidding time on the farm is exciting and you must be prepared. Assemble or check your kidding kit to make sure that all the supplies you might need are handy in the excitement of your doe giving birth. The supply list below is expanded from the one in your manual as it has extras for dealing with difficulties in the first week of the kid's life.

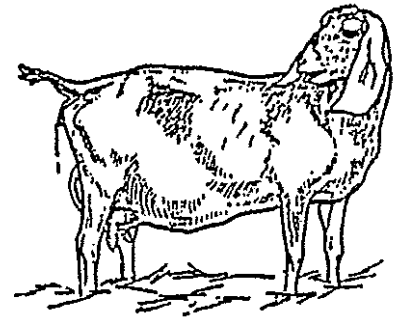


### Kidding Supplies

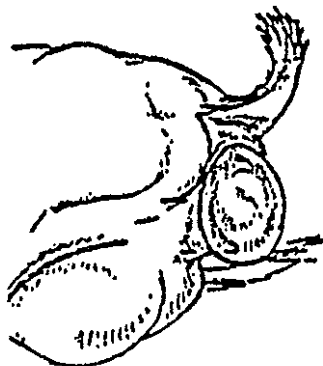
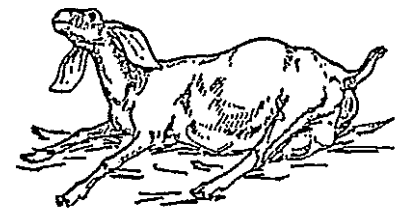
- Old towels and paper
- Infant enema syringe to clean nasal mucus
- Navel dip (7% iodine)
- Heat lamps
- Bottles and nipples, disinfected
- Pail and funnel to fill bottles
- Kidding pens/panels in place
- Electrolyte solution for scours
- Stomach tube and a 60 cc syringe
- Frozen colostrum
- Vitamins A & D, Selenium & Vit E
- Small hypodermic needles and syringe
- Antibiotic
- Box to hold kids as they arrive
- Your veterinarian's phone number

### Kidding Events

Write a caption for each picture of this normal goat birth.



*sketches by Sara Emond*





**MILKING PROCEDURE**

(Cut these steps into strips for activity.)

Wash the udder with lukewarm water containing a udder wash and use individual paper towels.

A gentle massage of the udder during the washing aids in milk let down.

The first two or three streams of milk from each half should be milked into a strip cup and discarded.

The doe should be milked with clean, dry hands, or a cleaned and sanitized milking machine.

Each teat is dipped in a commercial teat dip preparation. It prevents bacteria from entering the teat canal and causing infection within the udder.

## CLEANING & SANITIZING CHECKLIST

What chemicals were used during the correct milking procedure that you watched? Name the brand and the chemical that is in it, if possible.

Describe how it was used to assist sanitation.

### UDDERWASH

### TEAT DIP

### SANITIZERS

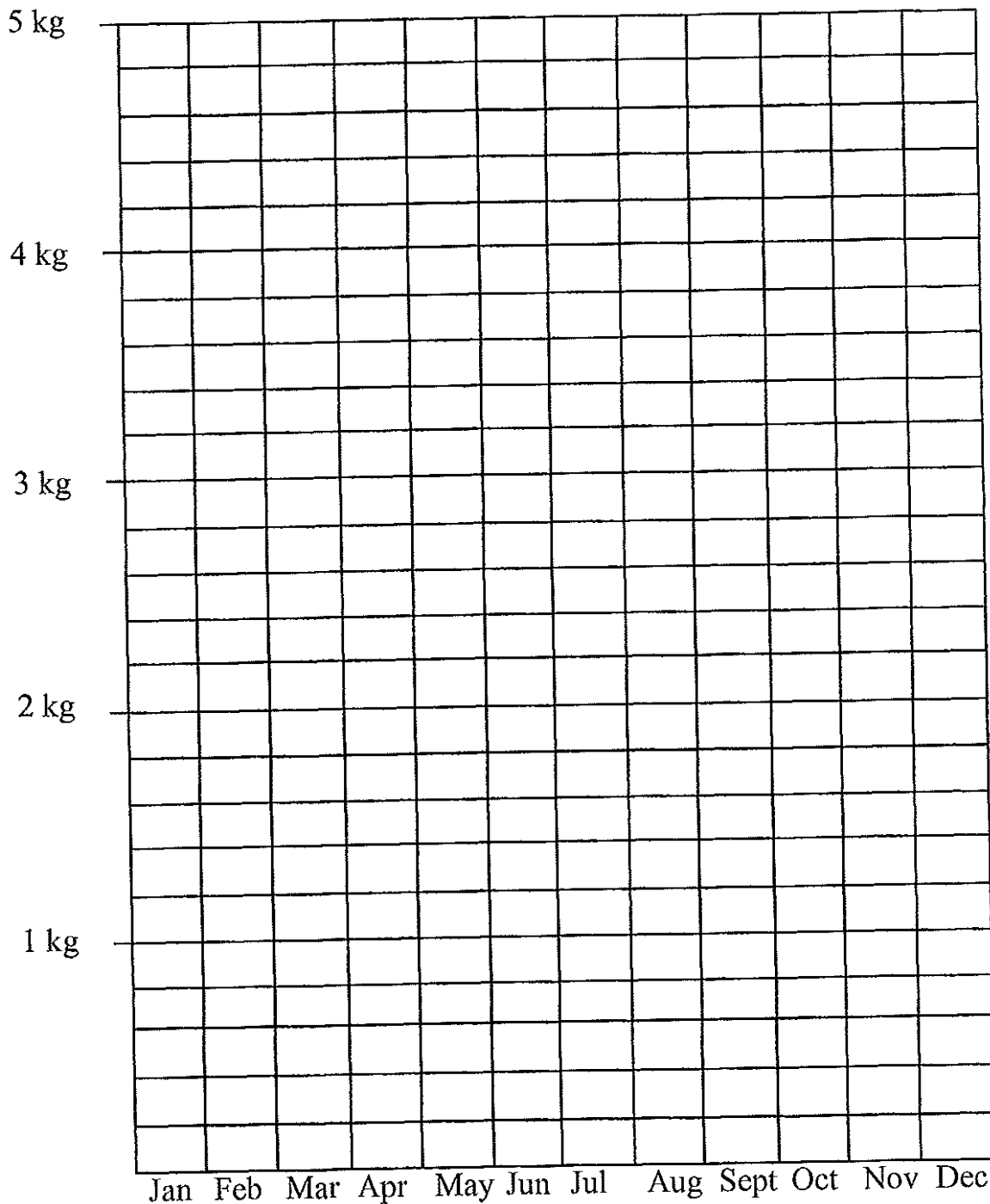
### DETERGENT

### ACID CLEANER

### PLOTTING THE LACTATION CURVE

Below is milk weights for three years for a dairy goat whose lactation was 305 days or more. Plot these weights on the graph, using a different coloured line for each years' lactation. Notice the curve that is formed when the plotted weights are joined. This is called a lactation curve.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
1999	2.2	3.0	3.0	3.5	3.4	3.2	2.8	2.1	1.5	1.4	--	--
2000	--	3.5	2.8	3.4	3.0	2.6	2.7	2.6	2.7	2.2	1.8	--
2001	--	3.4	4.0	3.9	3.7	4.5	4.4	4.0	3.1	3.2	2.9	--



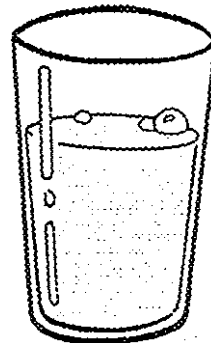
# TASTE IT!

Can you tell by the taste which of the samples of the different kinds of milk are the following?

evaporated milk # \_\_\_\_\_



buttermilk # \_\_\_\_\_



skimmed milk # \_\_\_\_\_

whole cow's milk # \_\_\_\_\_

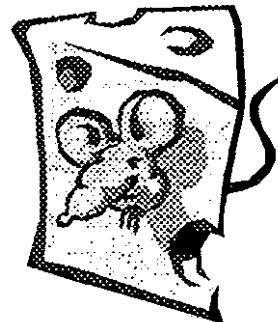
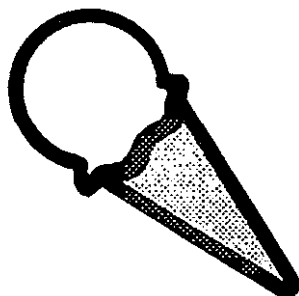


powdered milk # \_\_\_\_\_



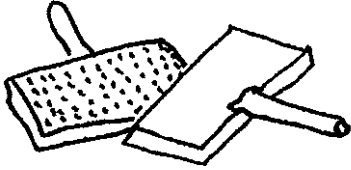
whole goat's milk # \_\_\_\_\_

sweetened condensed milk # \_\_\_\_\_



# Spinning Tools

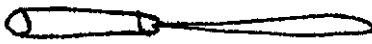
Here are some tools a spinner may need. Can you figure out what they would be used for? Use a separate sheet for your answers.



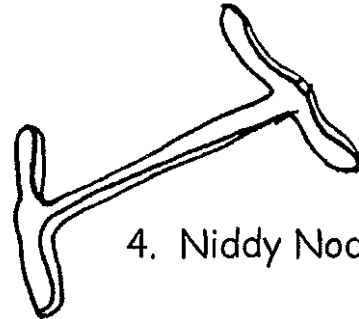
1. Carders



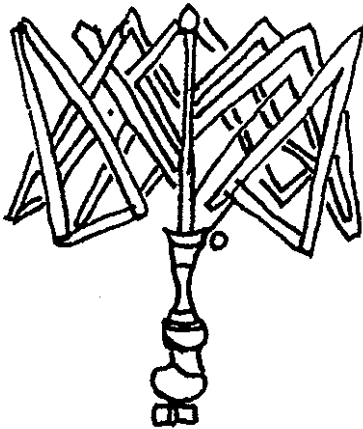
2. Comb



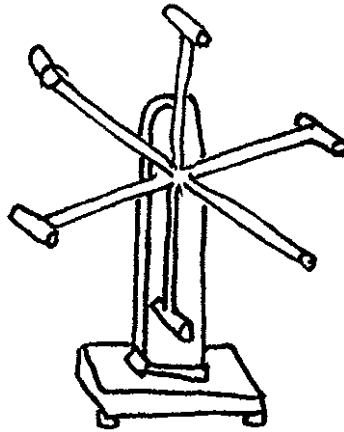
3. Threading hooks



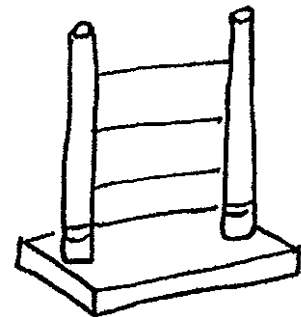
4. Niddy Noddy



5. Umbrella swift



6. Wrapping reel



7. Lazy kate

## WHAT'S IN FEED

As a raiser of goats, it's important to understand what the nutrient groups are and the ingredients that are rich in those nutrients.  
Match the nutrient group with the feed description.

### Nutrient Group

1. Proteins
2. Water
3. Minerals
4. Energy (Carbohydrates & Fats)
5. Vitamins



### Feed Description

- \_\_\_\_\_ a. Least expensive feed ingredient
- \_\_\_\_\_ b. Primarily supplied by green pastures and sunshine
- \_\_\_\_\_ c. Primarily provided from the breakdown of fibre or forages
- \_\_\_\_\_ d. A, D and E
- \_\_\_\_\_ e. Comprises the basic animal tissue
- \_\_\_\_\_ f. Calcium, phosphorus and salt
- \_\_\_\_\_ g. Most expensive part of the ration
- \_\_\_\_\_ h. Helps control body temperature
- \_\_\_\_\_ i. Ration should contain 16% for high milk production
- \_\_\_\_\_ j. Should have ready access to this nutrient at all times
- \_\_\_\_\_ k. Linseed meal and soybean meal
- \_\_\_\_\_ l. Corn, barley, oats, hay

## Digestive Parts & Their Functions

<b>MOUTH</b>	<b>ESOPHAGUS</b>	<b>RUMEN</b>
Bites off food and chews it up. Chews cud.	Moves food along to the stomach by muscle contractions.	Agitates food. Microbes in rumen break up food and begin digesting.
<b>RETICULUM</b>	<b>OMASUM</b>	<b>ABOMASUM</b>
Forms cud and regurgitates it to the mouth for further chewing.	Extracts and absorbs fluids out of food - fluids which contain nutrients.	Contains digestive juices (acids) to digest foods further. It works similar to the human stomach.
<b>SMALL INTESTINE</b>	<b>CECUM</b>	<b>LARGE INTESTINE</b>
Long tube-like organ where more digestion takes place. Most fluids and nutrients are absorbed through the walls of this organ.	Small organ between the small and large intestine. Contains more microorganisms for digestion.	Absorbs more water. Adds mucous to remaining food materials to help keep them moving through the digestive system.
<b>ANUS</b>		
The opening through which undigested food (waste) is eliminated from the body.		

# My Goat's Ruminating!

You have learned about rumination and its importance in helping the goat to digest its food. Before the next meeting, watch your goat for a few minutes and answer the following questions. For this activity, you'll need a watch that counts time in seconds.

An hour or two after feeding time, watch your goat for 5 minutes.  
See if you can see it bring up cud to chew.

1. How many times did the goat bring up cud in 5 minutes?

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2. Approximately how many seconds did it chew its cud before it swallowed it again?

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3. Did the goat stop chewing its cud if there were any noises in the barn? Why do you think that might be?

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Bring your answers to the next meeting!



## Poisonous Wild Plants

It can be very economical to pasture goats on land that cannot grow any type of cultivated crop. But, before we turn goats onto uncultivated land, we must know that the plants are safe to eat. In British Columbia, we have several plants that are very poisonous to livestock. It is important that we learn to recognize these plants and keep them out of our fields.

Use weed and plant identification books (available from your local library) to look up each of the following plants. Which of these plants do you have in your area?

- **Bracken ferns**
  - **Cockle**
  - **Cocklebur seedlings**
  - **Dutchman's Breeches**
  - **Lupine**
  - **Milkweed (some varieties)**
  - **Mountain Laurel**
  - **Poison Hemlock**
  - **Black Locust Tree - bark, sprouts, pods**
  - **Some algae in ponds (green-blue)**
  - **Jimsonweed**
  - **Sheep Laurel**
  - **Spurge**
  - **Prunus family trees: Wilted leaves of the wild cherry, chokecherry, plum tree and cherry trees. Also new shoots of these.**
  - **Sneezeweed**
  - **St. Johnswort - causes allergic reactions**
  - **Tansy Ragwort**
  - **Water Hemlock**
  - **White Snakeroot**
- Any others:*

# FOOD ENERGY

Below is a list of food that we eat. If a food is high in volume but doesn't supply much energy, mark an "A" next to it. If a food is compact but quite high in energy, mark a "B" next to it.

Reminder: A food can be low in energy but still give us many vitamins and minerals.

- \_\_\_\_\_ celery
- \_\_\_\_\_ raisins
- \_\_\_\_\_ eggs
- \_\_\_\_\_ watermelon
- \_\_\_\_\_ baked beans
- \_\_\_\_\_ lettuce
- \_\_\_\_\_ popcorn
- \_\_\_\_\_ cheese
- \_\_\_\_\_ trail mix or granola bars
- \_\_\_\_\_ potato chips

## FEED REVIEW

Fill in either a "T" for True or an "F" for False.

1. \_\_\_\_\_ Wilted cherry or plum leaves are very poisonous to goats.
2. \_\_\_\_\_ Cedar branches are safe to feed to goats but may change the flavour of their milk.
3. \_\_\_\_\_ Rhubarb leaves are poisonous to goats.
4. \_\_\_\_\_ Spinach is good for goats.
5. \_\_\_\_\_ Goats like old, long grass, the longer the better.
6. \_\_\_\_\_ Goats know the difference between safe and poisonous plants.
7. \_\_\_\_\_ Fields should be grazed until the grass is less than an inch tall.
8. \_\_\_\_\_ Hay and pasture grasses are usually the same varieties.

## FEED TAG INGREDIENTS!

Use a tag of a bag of goat feed to complete the chart below. Select six of the ingredients shown on the tag. Indicate the nutrient that each provides in the ration and what that nutrient does for the goat.

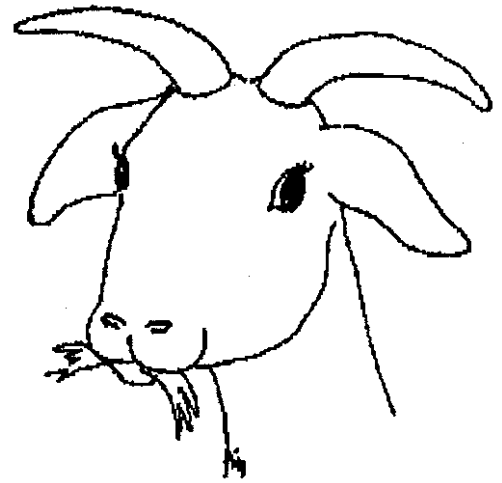
<b>Feed Tag Ingredients</b>		
<b>Feed Ingredients (See Feed Tag)</b>	<b>Nutrients Provided</b>	<b>What Nutrient Does for Goat</b>

# My Goat's Ration

Type of Goat \_\_\_\_\_

Stage of Production \_\_\_\_\_

Amount fed per day \_\_\_\_\_



**Ingredients**

**% in Ration**

**Ingredient Nutrient Group**

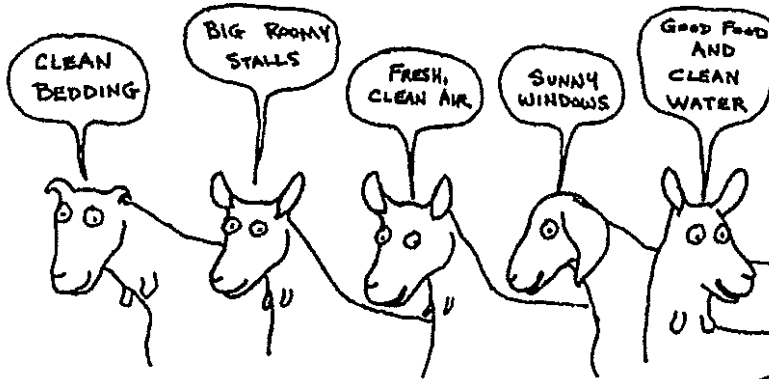
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**100%**

## ENVIRONMENT

Part 1:

How can good and bad housing affect a goat?



Group #1

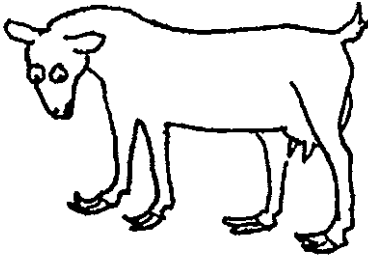


Group #2

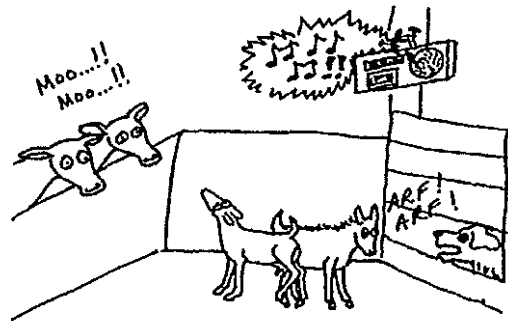
Part 2:

Here are picture that illustrate some other factors that affect the health of a goat. What point do you think is being made in each of the pictures?

1.



2.

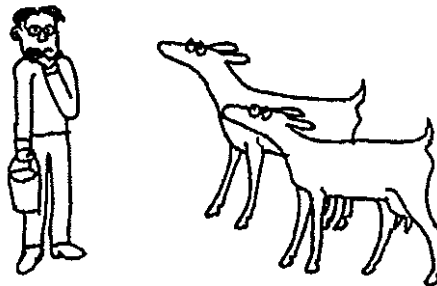


3.

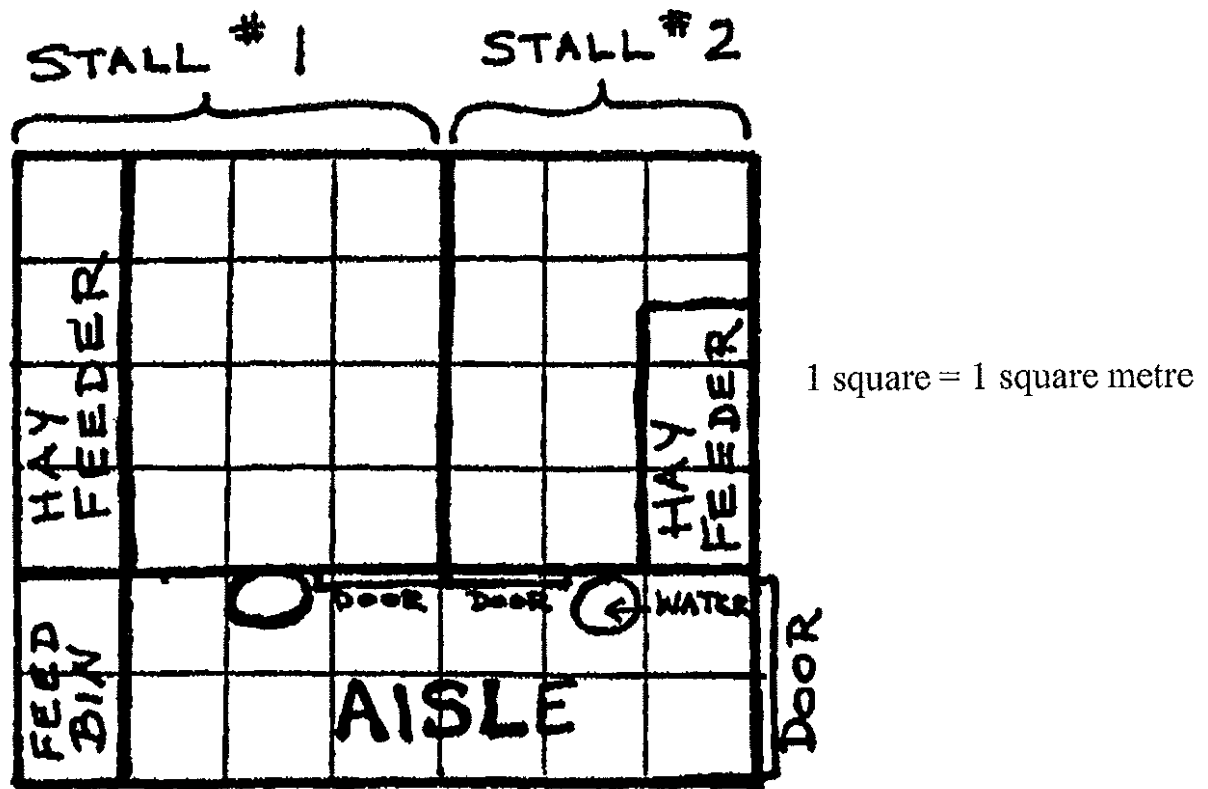


4.

HAM... DID I FEED THEM YESTERDAY?



## Housing Goats



This diagram shows a small barn with two stalls, an alley and a feed bin. It is drawn on graph paper, and each of the squares represents one square metre of space. Study the drawing and decide how many goats would be comfortably housed in each stall. You may choose to have either adult goats, young goats, or a mixture of each in each stall. Use the spacing guidelines in your manual on page 39.

REMEMBER: Each adult goat requires at least 2 1/2 squares of space. Each young goat requires at least 1 1/2 to 2 squares of space. These areas allow for proper space and comfort as the goat eats, sleeps and moves about. You cannot count the area of the stall that is marked off as a hay feeder and a waterer - this is not an area that can be occupied by the goat as it moves around.

1. How many goats will you put in Stall One?

Adults \_\_\_\_\_ Young Goats \_\_\_\_\_

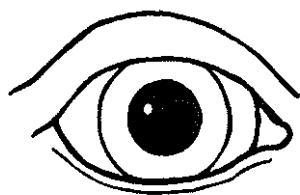
2. How many goats will you put in Stall Two?

Adults \_\_\_\_\_ Young Goats \_\_\_\_\_

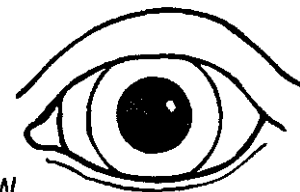
3. How much area did you decide to allow for each goat (Adult or Young)?

\_\_\_\_\_

4. How many adult goat would be too many for Stall #1? \_\_\_\_\_



## The Goat's Eye View



Go into your goat's stall and spend a few minutes there while you answer these questions.

1. How would you describe the air quality in the stall at the goat's level (about 1 meter above the bedding)?
2. How dry is the bedding? If you kneel on the bedding and your knees get damp, the stall is too damp. Clean it out (or add dry bedding if it is winter).
3. How easily could a goat put its feet into a feeder or waterer?
4. How easily could a goat escape by playing with the lock or jumping over a wall?



## GOAT HEALTH SIGNS

Your veterinarian has asked you to collect information on the signs of a normal goat for accurate information for the next time the goat is sick. Examine a healthy goat and complete the chart. For each sign of a healthy goat, write down what might be a symptom when the goat is ill.

Items to examine	Healthy goat signs	Symptoms of a ill goat
General Condition		
Eyes		
Ears		
Breathing Rate (per minute)		
Heart Rate (per minute)		
Temperature		
Skin		
Manure		
Udder		
Teeth		
Hooves		
Eating (amount)		
Drinking (how often)		
Body Discharges		

## COMMON DISEASES OF GOATS

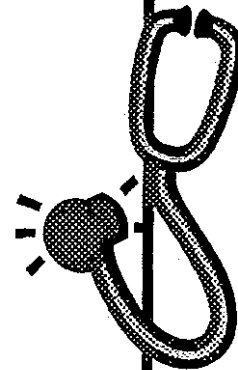
Match each health problem with one or more causes, symptoms, methods of prevention or treatment.

### Problem Diseases

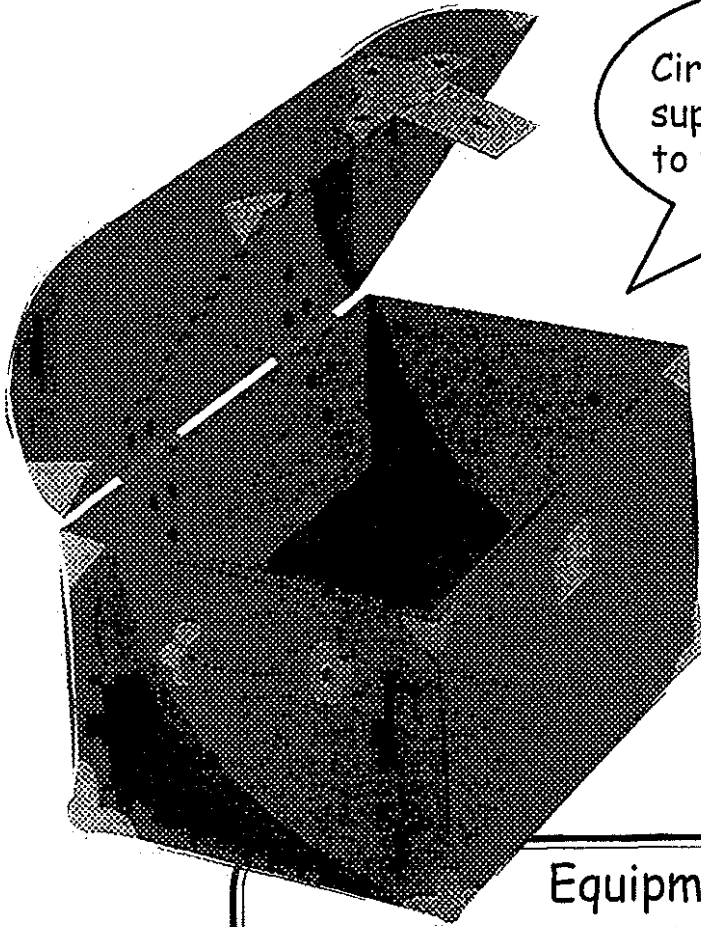
- A. Roundworms
- B. Pneumonia
- C. Enterotoxemia
- D. Infectious diarrhea
- E. Coccidiosis
- F. Abscesses
- G. Ketosis
- H. Mastitis
- I. Navel ill

### Causes, Symptoms, Treatments

- \_\_\_ 1. Pregnancy disease
- \_\_\_ 2. Crowded, unsanitary pens
- \_\_\_ 3. An inflammation of the udder
- \_\_\_ 4. Scours
- \_\_\_ 5. Sudden change in feed
- \_\_\_ 6. Due to stress associated with poor ventilation
- \_\_\_ 7. Insufficient amount of colostrum
- \_\_\_ 8. Caseous Lymphadenitis
- \_\_\_ 9. High fever and difficult breathing
- \_\_\_ 10. Poor milking technique
- \_\_\_ 11. Spreads under crowded, wet conditions
- \_\_\_ 12. Caused by bacteria, *Clostridium perfringens* types C & D
- \_\_\_ 13. Treated with sulfa drugs
- \_\_\_ 14. Occurs just before and after kidding
- \_\_\_ 15. Use tincture of iodine
- \_\_\_ 16. Major disease of dairy goats in Canada
- \_\_\_ 17. Bacteria enter via the umbilical cord
- \_\_\_ 18. Treated with anthelminics



# Goat Show Checklist

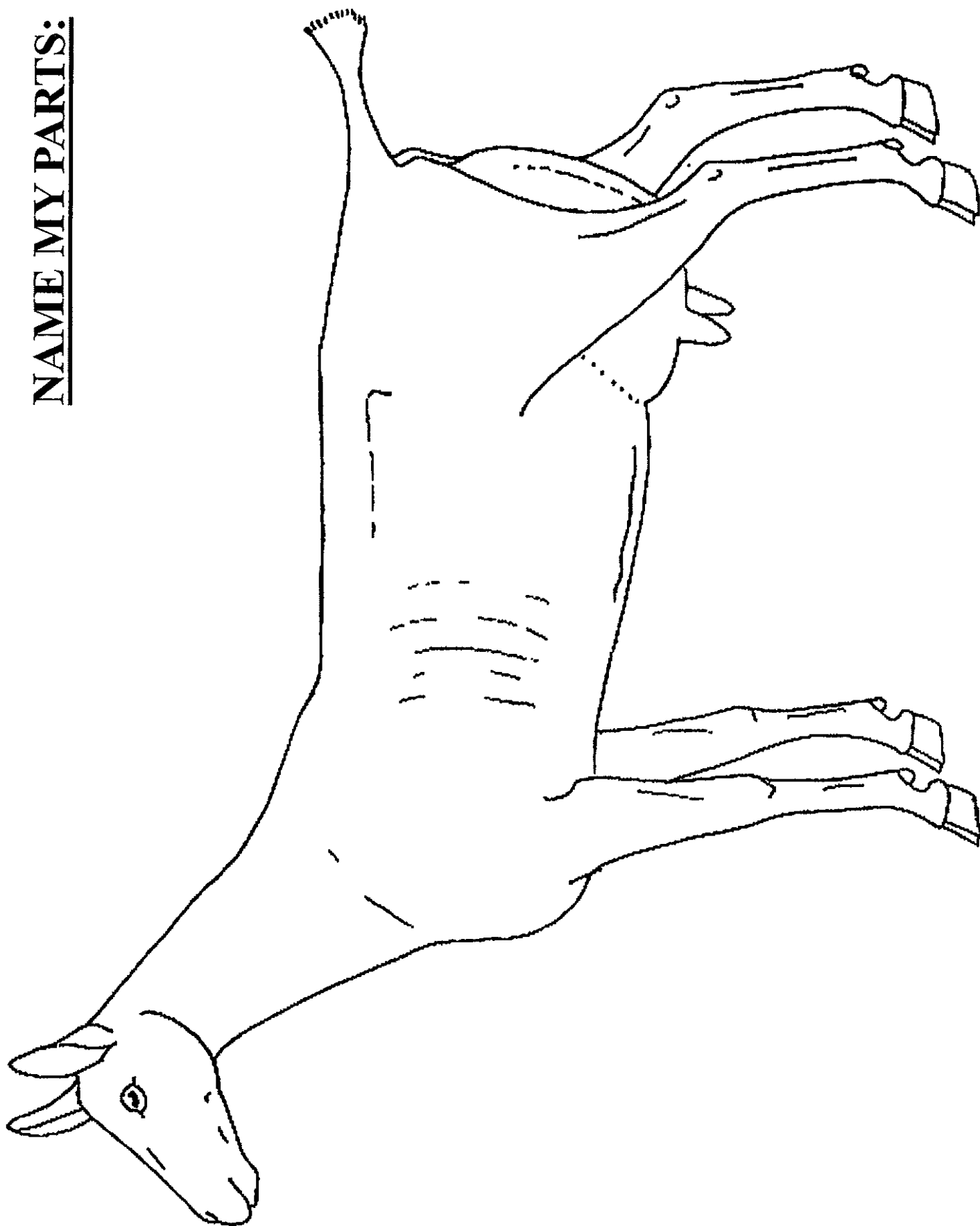


Circle the equipment & supplies you would plan to take to the show.

## Equipment & Supplies

brushes	feeders	straw
hoof trimmers	show collars	cloths
broom	fly spray	hay
hammer	neck chains	pitch fork
portable stanchion	clippers	tie chains
grain	milk pail	coat dressing
herd sign	pliers and wire	water bucket
soap	hose	health papers
show clothes	registration papers	feed
oil or polish	medicine	scissors
soft cloths	show box	towel

**NAME MY PARTS:**



# Goat Glossary

## A

**Abomasum** - The fourth compartment of a ruminant's stomach, where actual digestion takes place.

**Afterbirth** - The membranes of pregnancy that are expelled following parturition (giving birth).

**Alpine** - Swiss dairy goat breed. Erect ears. Various colours.

**Amino Acids** - Small compounds that are the building blocks of proteins.

**Angora** - A breed of goat having long, silky hair.

**Animal abuse** - Any act, omission or neglect that causes or permits unnecessary pain, suffering or death of animals.

**Animal rights** - Conditions, respect and fairness to which animals are justifiably entitled according to their natural characteristics.

**Animal welfare** - Human responsibility for the quality of animal life.

**Antibiotic** - Substance that prevents or controls infection.

**Artificial Insemination** - Method of breeding a doe using frozen semen instead of using a buck.

**Auction** - A sale where successive bids are received where an animal is sold to the highest bidder.

## B

**Bacteria** - Large group of widely distributed one-celled microorganisms that may appear singly or in colonies as spherical, rod-shaped or spiral, thread-like cells.

**Balanced daily ration** - A combination of feeds that provide the essential nutrients. When given in specified amounts, it properly nourishes an animal for a 24-hour period.

**Barn Records** - A method of keeping milk records whereby the owner weighs and records the individual production of each milker in his herd.

**Bloat** - A swelling of the rumen caused by accumulation of gas. May be fatal if not released.

**Breech birth or delivery** - The birth of an animal with the buttocks or rear feet first rather than the head or front feet first.

**Breed** - A group of animals with common ancestry and characteristics.

**Browsing** - The preferred feeding pattern for goats. They cruise and nibble, eating an enormous variety of plants, brush, weeds, shrubbery and tree tips.

**Brucellosis** - A bacterial disease of domestic mammals caused by a bacillus that results in abortions; also called Bang's disease.

**Buck** - Male of the goat species.

**Buck rag** - Cloth rubbed on the scent glands of the buck and used to induce or detect heat in does.

**By-product** - An item of lesser value than the major product, for example, goat meat is a by-product of dairy goat raised to give milk.

## C

**Caprine** - Of or pertaining to goats.

**Caprine arthritic encephalitis (CAE)** - A viral syndrome specific to goats that causes carpal arthritis and encyphillitis in kids.

**Cashmere goat** - The hair of a goat native to the Himalayan regions of India and Tibet and prized for its wool.

**Castration** - Stopping circulation or removing the male sexual organs.

**Chevon** - Goat meat (French)

**Classification** - A scorecard type system that evaluates goats against the ideal such as excellent or very good, based upon general appearance, dairy character, mammary system and body capacity.

**Cloning** - To create a genetic duplicate of an individual organism through asexual reproduction, as by stimulating a single cell.

**Closebreeding** - A form of inbreeding to the extent of mating closely related animals, e.g. dam to son.

**Colostrum** - The doe's first milk, rich in antibodies and vitamins needed by newborn kids to get off to a healthy start. It is secreted for up to 4 days after delivery.

**Common or scrub** - A goat animal of unknown ancestry.

**Concentrate** - Feeds low in fibre and supplying large amounts of digestible nutrients, e.g. cereal grains, oil meals.

**Cow-hocked** - Undesirable, crooked hind legs. Hocks too close together as viewed from behind.

**Crimp** - The waviness in a lock of mohair.

## Goat Glossary

**Crossbred** - Offspring produced by the mating of two different breeds.

**Crutching** - Trimming the hair in an Angora doe's crotch (around the udder and tail) so that kidding is cleaner and the kid can find the teat more easily. (Angora goat)

**Cryptorchidism** - Undescended testicle(s).

**Cud** - A bolus or a soft mass of chewed food regurgitated from the stomach to the mouth in animals that are ruminants.

**Culling** - Eliminating substandard animals from the herd by butchering or selling them for meat.

**Cyst** - Pouch or sac filled with fluid or semisolid material.

### **D**

**Dam** - The female goat parent, or mother.

**Dehorning** - Removing horns surgically.

**Deworm** - To rid of internal parasites.

**D.H.A.S.** - Dairy Herd Analysis System - A milk testing program offered by the Canadian Goat Society for group-production testing or owner-sampler.

**Diet** - A nutritionally balanced mixture of feed ingredients.

**Digestibility** - The percentage of a nutrient that is absorbed from the intestines as compared to what is eliminated as manure.

**Digestion** - The process whereby complex nutrients such as starch, fats and proteins are chemically broken down in the digestive system into

simple nutrients such as glucose, fatty acids and amino acids which can be absorbed and utilized by the body.

**Disbudding** - Stopping the growth of horns by burning with a very hot disbudding iron, before the horns have sprouted (3-5 days of age).

**Doe** - Female goat.

**Doeling** - Female goat less than one year of age.

**Drench** - A liquid medication; also, to administer a liquid medication.

**Dry doe** - Mature doe that is not lactating.

**Dry off** - Stopping the production of milk so the doe may have a rest before freshening and usually 8 weeks before she gives birth.

**Dry period** - The time when an animal is not producing milk. In a current lactation doe, the dry period is about 60 - 90 days before kidding.

**Dystocia** - Abnormal or difficult labour and/or birth.

### **E**

**Elf ear** - LaMancha ear up to two inches long.

**Emasculator** - An instrument used for the bloodless castration of livestock. It cuts the spermatic cord without injury to the scrotum. Also called a burdizzo.

**Embryo transplant** - The removal of a developing embryo from one female and transfer to the uterus of another. It usually involves the superovulation of superior females and the eventual transfer of their embryos in an attempt to increase the number of superior offspring.

**Energy** - A product of carbohydrate and fat food nutrients that supplies the fuel the goat needs to walk, breathe, grow and keep warm. Energy food sources are corn, wheat, oats, barley, grasses and hay.

**Estrus** - The heat period that last one to three days every 21 days during the breeding season.

**Estrus cycle** - The reoccurring 15-21 day reproductive cycle of a doe from the time she is ready to be bred until she will be bred again if conception does not occur.

### **F**

**Feed** - Food given to animals to provide them with essential nutrients.

**Fertile** - The stage of development of the female animal at which conception will occur.

**First freshener** - A doe that has kidded once.

**Fitting** - The clipping, washing and grooming of animals for show.

**Fleece** - The hair or wool of an animal.

**Flush** - To increase a doe's nutritional supply of energy and thereby stimulate ovulation and conception.

**Foot rot** - Fungus infection causing lameness.

**Free choice** - Method of feeding in which rations are always present.

**Freshening** - To begin lactation after giving birth.

## Goat Glossary

### G

**Gene** - The smallest unit of inheritance found as a part of chromosome.

**Genetic engineering** - The intentional altering of genes by humans, usually to prevent or eliminate hereditary defects.

**Genotype** - The genetic makeup of an animal.

**Gestation** - The period from conception (uniting of the egg & sperm) until birth of the offspring - approximately 145 - 155 days in goats.

**Gopher Ear** - LaMancha ear one inch long or less with cartilage.

**Grade** - A doe having one parent registered as a purebred and the other of mixed or unknown ancestry.

### H

**Hay** - Livestock feed made from forage that has been cut and allowed to dry so that it may be stored without moulding.

**Heart Girth** - A "V" line around the body of an animal just behind the shoulders; a measurement that is sometimes used to estimate body weight.

**Heat period** - Estrus; the period during which a female is sexually receptive.

**Herbivorous** - Animals that live on plants and legumes and nurse their young with milk.

**Herd** - A group of animals, particularly cattle, horses, hogs or goats.

**Heredity** - The transfer of characteristics from one generation to another.

**Herdsmanship** - The caring and managing of a group of livestock; the organized display and cleanliness of a livestock exhibit.

**Hormone** - A chemical substance secreted into the body fluids by an endocrine gland that has a specific effect on other tissues.

**Host** - An animal upon which another organism lives as a parasite.

**Human-animal bond** - Emotional attachment between a person and non-human companion.

### I

**Implant** - To insert or embed surgically, such as an embryo.

**Inbreeding** - The mating of closely related animals and includes closebreeding and linebreeding.

**Inter-herd effects** - Environmental effects that are different from herd to herd.

**Intra-herd effects** - Environmental effects that affect all animals within a herd in much the same manner in the same time period.

### K

**Kemp** - Straight, chalky white, brittle hair; very undesirable. (Angora goat)

**Ketosis** - A metabolic disease characterized by excessive amounts of ketone bodies such as acetone in the blood and body fluids.

**Kid** - A goat under one year of age.

**Kidding** - Giving birth to young. Freshening.

### L

**Lactation** - The period of time from which a doe freshens until she is dried off prior to kidding again.

**LaMancha** - American dairy goat breed of Spanish descent. Wide variety of colours. Very short or no external ears.

**Linebreeding** - A form of inbreeding but to only a minor degree, e.g. cousin to cousin mating.

### M

**Macro minerals** - Minerals required by the goat in relatively large amounts because they make the largest percentage of minerals in the goat's body.

**Mammary system** - The udder, teats and tissues associated with milk secretion.

**Manger** - A trough that holds feed.

**Mastitis** - An inflammation of the mammary glands caused by microorganisms or injury.

**Micro minerals** - Sometimes called trace minerals because they are required in very small amounts by the goat.

**Milk components** - Usually refers to one or more of the three substances in milk that are considered to be (potential) bases for milk pricing; fat, protein and solids that are not fats.

## Goat Glossary

**Milk fever** - A disease known to cows and goats that occurs at about the time of parturition that involves a slight generalized paralysis of the muscles; it is associated with a low level of calcium in the blood.

**Milking parlour** - A special facility in which cows or goats are brought to be milked.

**Milk replacer** - Milk substitute fed to the young goat instead of the dam's milk.

**Minerals** - Elements required by the goat to build bones and teeth and to support other life processes.

**Mohair** - The fleece or hair from an Angora goat.

### **N**

**Necropsy** - A post-mortem examination of tissue or other material from a dead animal, usually for diagnosis.

**Nubian** - A breed of dairy goat with long, wide pendulous ears. Roman nose. Wide variety of colours.

**Nutrient** - A chemical substance that nourishes, such as protein, fat, carbohydrate, mineral or vitamin.

### **O**

**Oberhasli** - Newest Swiss dairy goat breed. Erect ears, bay or red with black markings. All black does are acceptable.

**Offspring** - Animals born to a parent. Also, descendants, either first or later generations.

**Oil meal** - A kind of feed obtained from soybeans, cottonseed, flaxseed and certain other seeds after the oil has been removed and which contains relatively large amounts of protein.

**Omasum** - The third compartment of the ruminant stomach. It is located between the reticulum and the abomasum.

**Open** - Not carrying offspring.

**Outcrossing** - Mating of two unrelated animals within the same breed. This system will likely increase hybrid vigour and reproductive performance.

**Oxytocin** - A hormone of the posterior pituitary gland that functions in the release of milk from the mammary gland and aids in parturition, or giving birth.

### **P**

**Pack goat** - Large goats of breeds or combination of breeds used to carry loads.

**Palatability** - The degree to which an animal will eat a feed depending if it is pleasant to the taste, smell, and feel.

**Parasite** - Internal or external organism which lives in and on the host animal at whose expense it obtains food and shelter.

**Parrot mouth** An undesirable, inherited, recessive condition in which the upper jaw extends beyond the lower jaw interfering with grazing and browsing.

**Parturition** - Giving birth to young.

**Pasteurization** - Process where milk is heated to 72 degrees Celsius for 15 seconds or to 63 degrees Celsius for 30 minutes to kill microorganisms that may transfer disease or cause milk to spoil. Names for Louis Pasteur, who discovered the process in 1856.

**Pasture** - Grasses or legumes grown for grazing animals.

**Pedigree** - A record of the male and female ancestors showing name, date of birth, and production figures.

**Phenotype** - The appearance of an animal or one of its traits; the way an animal looks or behaves as determined in part by the genotype.

**Physiology** - The study of the body and its organs, systems, tissues and cells.

**Pneumonia** - Inflammation (swelling) in the lungs that results in breathing difficulties.

**Polled** - An animal naturally hornless.

**Pregnancy** - The period during which an embryo or fetus is developing inside the uterus, or womb.

**Progeny** - Refers to offspring or descendants of an individual.

**Protein** - A class of food nutrient supplied by feed ingredients such as soybean oil meal and cottonseed oil meal to build body protein that makes muscle, bone, blood, skin and hair.

**Protein supplement** - An ingredient that supplies protein, vitamins and minerals to the goat.



# Goat Glossary

**Proven buck** - A buck that has proven his ability to transmit his good qualities by consistently producing animals that are superior to their dams.

**Puberty** - The time when an animal becomes sexually mature. The female begins to cycle and is capable of becoming pregnant. In the male, sperm production begins in the testicles.

**Purebred** - An animal descended from a line of ancestors of the same breed; may or may not be registered.

## R

**Ration** - The total feed intake of an animal in a 24-hour period.

**Recessive** - Refers to a gene whose expression can be modified or covered by an allele (any of a group of possible mutations of a gene) or a dominant gene.

**Recorded grade** - Animal recorded in a breed association herd book as having one registered.

**Registration paper** - Official record issued by Canadian Livestock Records as to the identity and pedigree of a purebred animal.

**Rennet** - Is an extract made from the lining of the fourth stomach of a cow or young goat. Rennet contains an enzyme called rennin which causes milk to form a solid curd.

**Respiration** - The act of inhaling and exhaling, usually 12 to 20 times per minute in goats.

**Retained placenta** - Fetal membranes that are not expelled following parturition, or giving birth.

**Reticulum** - The second compartment of the ruminant stomach.

**Roughage** - Feeds low in total nutrients and usually high in fibre content, e.g. hay, straw, silage.

**Rumen** - The largest and first compartment of ruminant stomach. The pouch involved with bloat.

**Ruminant** - Hoofed animals that chew cud and have complex three or four chambered stomachs.

**Ruminate** - To bring previously eaten food back into the mouth for further chewing. To chew cud.

## S

**Saanen** - Swiss dairy goat breed. All white. Erect ears.

**Scours** - An abnormal diarrhea in animals.

**Scrub** - Animal of unknown breeding.

**Scurs** - Growths of horny tissue of various lengths and shapes, caused by incomplete disbudding or dehorning. They may break off causing bleeding and pain.

**Senior milker** - A doe that has kidded more than once.

**Settle** - Get pregnant; conceive.

**Sheepy fleece** - Undesirable mohair with wool-like qualities; also called spongy or woolly fleece.

**Showmanship** - The presentation of an animal at a show including proper fitting, showing procedure and exhibitor appearance.

**Sire** - The father of the offspring.

**Social order** - The tendency of animals to behave in an order of social dominance.

**Somatic cell count** - the number of somatic cells in milk provides an indication of mastitis problems.

**Spongy fleece** - Undesirable mohair with wool-like qualities; also called sheepy or woolly fleece.

**Stained hair** - Orange brown, urine-stained mohair.

**Stanchion** - A restraining device that holds a goat by the neck.

**Standing heat** - That part of estrus (estrous period) when the female is most receptive to the male.

**Staple length** - The length of individual locks of mohair.

**Starter ration** - The first feed other than milk a goat receives. May include equal parts cracked corn, crushed oats, wheat bran and about 10% soybean meal with minerals and vitamins added.

**Stress** - Abnormal or adverse conditions and factors to which an animal cannot adapt. The factors may be physical, chemical or psychological, resulting in physical tension and possible disease.

## T

**Tattoo** - Ear identification markings to identify animals.

**Toggenburg** - Swiss dairy goat breed. Brown with white markings and erect ears.

**Trace minerals** - Any one of several mineral elements that are required by animals in very small amounts. Examples are iron, iodine, cobalt, copper, manganese.

**Trait** - Any observable feature or characteristic of an animal.

**Trip** - A group of goats can be called a trip.

## Goat Glossary

**Type** - Referring to the structure, or conformation of an animal, or the type of product it produces. Examples are meat-type hog, wool-type sheep, milk or dairy-type goat.

### **U**

**Udder** - Milk producing glands of the female.

**Unrecorded grade** - A doe whose ancestry is either unknown or not recorded.

### **V**

**Vaccine** - A substance that contains live, modified or dead organisms or their products that is injected into an animal in an attempt to protect the host from a disease caused by that organism.

**Vitamin** - A class of food nutrient needed for the health of eyes, nasal passages, lungs, strong bones and blood clotting.

### **W**

**Warts** - Growth on skin caused by infectious virus (germ).

**Water** - An important food nutrient used by the goat's body to carry away waste products, lubricate joints and serve as a built-in cooling system.

**Wattles** - Hair covered tassels appearing at the throat. They have no purpose.

**Wether** - A castrated buck.

### **Y**

**Yearling** - An animal 12 to 24 months old.

### **Z**

**Zoonotic** - Disease transferred from people to animals or vice versa.



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