Chapter 1
Introduction

Using This Book

This resource book is designed to be used by 4-H members who are participating in goat projects. Younger members may need help reading this book. Members are encouraged to check with their advisors or county Extension office for a complete set of guidelines for their projects. The 4-H goat projects involve the selection, care, and feeding of one or more goats. Although this resource handbook is a one-time purchase, youth need to purchase the Goat Project and Record Book every year.

Benefits to a 4-H Member

1. Life Skills Development. As a goat owner, you learn many life skills that help you become a responsible and competent individual. Some of these life skills include managing resources, making decisions, solving problems, learning to learn, reasoning, thinking critically, keeping records, planning and organizing, achieving goals, communicating, cooperating, sharing, caring for others, being empathetic, learning through community service, completing a project/task, motivating yourself, and being responsible. What other skills can you think of?

2. Selection. Whether you currently own a goat or plan to own one in the near future, knowing what questions to ask and breed characteristics to look for make selecting the right animal a rewarding experience.

3. Record Keeping. One requirement for completing a livestock project is keeping accurate records. Inaccurate records do not reflect what you have accomplished with your project. By keeping good records from the beginning of your project, you learn how much it costs to keep your animal, including expenditures for feed, equipment, veterinary care, training, and showing. Keep records on a weekly or monthly basis. Do not wait until so much time has passed that it is hard to remember what you have done. Keep receipts when you purchase anything for your project. This helps you learn the expenses involved in owning a goat.


5. Health. You learn how to participate in a year round wellness program to keep your goat healthy and prevent diseases.

6. Competition. You benefit from learning to care for and show your project, and to compete gracefully.

7. Ownership Pride. Owning and caring for goats successfully gives you a feeling of pride and satisfaction.

8. Professional and Social Development. Having a goat project brings you into contact with successful owners, breeders, judges, project leaders, and other 4-H members.

9. Career Exploration. Meeting professionals in the goat world gives you opportunities to explore careers in this industry.
10. **Animal Welfare.** Your awareness of the issues of animal well-being and ethics is increased. Animals play a vital role in society, and therefore deserve our protection and compassion.

**Teamwork for the Common Goal**

The purpose of all project work is to enhance the education, experience, and development of young people, a purpose that is not realized without the involvement of several people working as a team. The successful completion of the goat project depends upon the combined efforts of parents or guardians, experts, 4-H leaders, and you, the 4-H member. All contribute to successful teamwork.

**A Message to Parents or Guardians**

This *Goat Resource Handbook* is intended for use by youth ages eight years old and in the third grade through eighteen years old. The reading level and terminology in this book is difficult for a younger 4-H member. **It is very important that a younger 4-H member has the help of an older youth or adult to interpret and understand the information in this book.**

Behind most successful club members are parents or guardians who are truly enthusiastic about the projects their children are taking. These parents offer supervision, assistance, and encouragement to the 4-H member working through projects. The payoff from this involvement is an exciting learning experience, and sometimes even honors and prizes at county and state fairs. If you are willing to help in these ways, you can make a big difference.

Be aware that while adult support is clearly important, it is equally important that adults not go too far. That is, as a parent or guardian of a 4-H member undertaking a project, you should assist and supervise only to a reasonable extent. Help out as much as is necessary, but do not do the various chores and requirements called for by the project. These are for the 4-H member to do.

Also keep in mind that most projects, especially those involving animals, require adjustments at home and some investments to be successful. For this project, proper housing, equipment and supplies, nutrition, veterinary care, and training are needed to help the 4-H member have a successful experience. Resources for keeping records are necessary.

Remember, the 4-H member’s success in this and all projects depends to a large extent on the encouragement and support—in the appropriate measures—that only you can give.

**A Message to 4-H Advisors**

As people directly concerned with youth development, it is the responsibility of every 4-H advisor to help each member who wants to take a goat as a 4-H project (and who has the resources to do so) to learn lifelong skills and be successful. Through 4-H meetings and activities, 4-H advisors help youth set goals, identify resources, learn public speaking skills, gain confidence, and evaluate their own progress with their goat projects.

**Eight Key Elements for a Positive 4-H Experience Taking Goat Projects**

Eight elements have been identified as key elements in making a young person’s 4-H
experience a positive one. It is unlikely that all eight elements prevail at one time; however, elements such as a caring adult and safe environment must be in place at all times. Information below identifies and defines the Eight Key Elements for a Positive 4-H Experience for youth taking goat projects. Can you identify more “indicators” of each key element?

2. An Emotionally and Physically Safe Environment

Youth should not fear physical or emotional harm from our learning environment, adults who work with them, or from other youth. In our world today, this element is especially important. 4-H strives to provide a safe environment at each and every activity involving our youth.

Indicators of a safe environment through 4-H projects:
• Volunteers teach youth safe handling and training techniques.
• Volunteers teach youth skills needed to socialize and their animals.
• An environment that is safe for introducing youth and goats is created.
• Positive behavior guidelines are set for youth, and for youth and goats.
• Regional and statewide clinics are offered for volunteers to learn how to work with youth and goats.

3. A Welcoming Environment

A welcoming environment is one that actively cultivates a sense of group identity and belonging, encourages and supports its members, offers encouragement with positive and specific feedback, and shares the successes of all members of the 4-H group by providing many forms of recognition.

Indicators of a welcoming environment through 4-H projects:
• Volunteers involve all youth in introductory activities.
• Volunteers involve all youth in meetings and club activities.
• Volunteers practice age-appropriate teaching methods, involving older members as mentors of younger members.
• Volunteers create an environment to encourage group decision-making.
• Volunteers consider, evaluate, and give feedback to members’ thoughts, ideas, and decisions.
• Volunteers give positive feedback during goat activities and member educational activities.
• Group identity is well established as evidenced by, for example, club t-shirts, banners, bandanas with club name, etc.
• Volunteers hold recognition events for youth, including graduation events for youth and their animals.
• Youth celebrate their successes throughout involvement in the goat program.

4. Engagement in Learning
An engaged youth is one who is not only mindful of the subject area, but who is building relationships and connections to develop greater understanding. 4-H provides opportunities for self-reflection that enable youth to connect what they learn today to their futures. Hands-on learning provides opportunities to develop important life skills.

Indicators of engagement in learning through 4-H goat projects:
• Goats are the “hook” that engage youth in hands-on learning opportunities specific to goat subject matter.
• Goats are vehicles that engage youth in a broad scope of 4-H opportunities such as camps, international programs, complementary projects, award trips, and scholarships.
• Youth take ownership of their group and design a project plan for accomplishing their goals with their goat projects.
• Youth learn many life skills as a result of engagement in goat projects.

5. Mastery and Competence in a Chosen Activity or Subject Matter
Young people learn best when the program or activity is centered on a topic that is of personal interest or a passion. Providing an opportunity for mastery and competence allows youth to experience success and achievement that in turn serve as building blocks for their success—not only in 4-H but also in their school and community work.

Indicators of mastery and competence through 4-H goat projects:
• Goats and related subject matter provide the topic of personal interest.
• Youth practice and demonstrate skills with their goats at various levels.
• Youth practice and demonstrate skills related to educational goat activities, such as skillathons, poster contests, and knowledge bowls.
• Youth set goals and objectives for projects and activities in which they participate.
• Youth take turns teaching each other.
• Youth become confident in their abilities and in their animals’ abilities.

6. Self-Determination
Youth must believe that they can impact the events in their lives, rather than events having control over them. The opportunities we provide through 4-H help youth foster a personal sense of influence over their lives, exercising their potential to become self-directing, autonomous adults.

Indicators of self-determination through 4-H goat projects:
• Volunteers and older youth are involved as facilitators, mentors, and teen leaders.
• Youth are a part of the decision-making process for group activities.
• Youth learn critical thinking skills and how to improve their skills.
• Youth learn to be prepared for the unexpected when working with goats.
• Youth learn how to be flexible as well as how to think clearly and rationally when confronted with situations during training and handling of goats.

7. Opportunity to Value and Practice Service for Others

Service is a way for 4-H members to gain exposure to the larger community and the world. It is necessary for youth to actively practice and value serving others. Many times, this experience enables young people to recognize the difference they can make for others and for their communities.

Indicators of valuing and practicing service for others through 4-H goat projects:
• Volunteers and older youth serve as mentors to help younger members participate in club activities and safely work with their goats.
• Youth use their goats in ways that educate, entertain, or assist the community at large through parades, visits to nursing homes, drill teams, etc.
• Youth have a sense of pride in seeing their goats brighten the lives of others.
• Goat projects serve as a stepping stone for youth’s continued interest and participation in other community service projects and activities.

8. Active Participation in the Future

Providing youth with the opportunity to see themselves in the future gives them the hope and optimism to shape their life choices accordingly. Leaders can teach all the facts and figures in various subject matter areas, but if they don’t link the information to the future, those facts and figures will likely go unused. 4-H is committed to positive youth development programs that make the connection from today’s activities to tomorrow’s successes.

Indicators of seeing one’s self as an active participant in the future through 4-H goat projects:
• Youth have opportunities to explore careers related to goats and to the goat industry.
• Youth have opportunities to outline and realize goals.
• Youth have opportunities to make decisions about future activities and programs not inclusive to 4-H goat projects.
• 4-H goat projects may serve as the stepping stone to future involvement with goats and related organizations, such as breed clubs, rescues, or humane societies.

A Message to 4-H Members

After you have made the decision to take a goat project, it is important to know what you want to learn throughout the project year. Information in this resource handbook should help you learn more about goats and better prepare you to be successful with your project. Learning about goat anatomy, uses, selection, health requirements, nutrition, reproduction, etc. helps you understand more about goats. You can learn about showing your goat or simply learn about caring for your goat.

By teaching you these principles through information and experience, this project makes it possible for you to be a responsible and knowledgeable goat owner able to fully appreciate the significance of the human-animal bond. To have a successful project
you must be willing to study and review and apply the information contained in this handbook.

**Results of 4-H Youth Development Programs**

Research has shown that as a result of 4-H Youth Development programs:

1. **Youth develop marketable skills for lifelong success.**
   Youth gain important leadership, communication, problem-solving, and teamwork skills. These abilities are gained through the numerous projects and activities in which youth participate as 4-H members. Such skills are important not only to immediate success of the 4-H projects but to continued success of many endeavors.

2. **Youth engage in community service and citizenship to transform local communities.**
   This goes beyond just conducting a project; its focus is on recognizing that youth can make valuable contributions to their local communities. Youth can make a difference.

3. **Youth appreciate and build upon diversity to foster a harmonious global society.**
   This is a critical awareness tool for success of youth today and far into the future. Rather than looking at the differences in people as potential sources of conflict and disengagement, our goal is for our youth to recognize these differences as opportunities for positive and rewarding experiences.

4. **Youth build sustained relationships with adults that enable them to become better citizens.**
   We can all remember the significant contributions an adult had during our adolescent lives. Similarly, adult 4-H volunteers should make a tremendous positive impact on the lives of 4-H youth.

5. **Volunteers build skills and abilities to more effectively work with youth.**
   Land-grant universities throughout the nation provide educational opportunities in subject areas, working effectively with youth, and leading positive youth development programs. Extension professionals and other university faculty and staff teach volunteers the many skills and abilities needed to work effectively with youth through educational workshops, clinics, and conferences.
Chapter 15
Preparing Your Animal for Show

Whether you are showing dairy, meat, pygmy, or utility goats, the keys to preparing your animals for showing are patience and time.

Washing and Clipping

Brushing your show animal regularly makes the hair soft and shiny for show time. It removes old, loose hair and stimulates shiny, new hair to grow. All dairy and meat goats should be clipped approximately 7 to 14 days before the show. You want to show off the clean structure of your animal and this gives enough time for clipper marks to not show on the hair coat. Be careful in sunny weather, as some goats are more susceptible to sunburn after they are clipped. If you have never clipped before, practice on an animal that is not going to the show. Most animals do not like to be clipped, so it is better to start at the back and let them get used to the noise of the clippers. Also, trim up your animal’s feet if necessary. You do not want to do this right before the show in case you trim too much and cause some lameness.

Approximately one to two days before the show, wash your animal with a mild soap and clip the hair from the udder of your dairy does. You are now ready to go to your show. Make a list of things you need in your show box. At the very least, include the following:

1. Clippers
2. Shampoo
3. Appropriate clothing

4. All animal information, including birth date, sire, dam, and if showing milking animals, date of freshening, number of kids, milk production, and DHI records if available
5. Forks, brooms, and cleaning equipment for the barn

Showing Your Animal

All goats need to be taught to use a lead and to be set up. This training needs to start several months before showing. First, get your animal used to wearing a collar or a halter, making sure they fit correctly. Setting up your animal or posing your animal for the judge is done by putting its feet directly under its body. If it is a lactating doe, place her rear legs slightly back to show off her udder and her udder attachments. However, do not place them so far back that they look unnatural. Working with your animal a few minutes every day and getting it used to leading and setting up pays off at the show. Remember, the more you work with your animal, the better it will be at show time. Over time, your animals will learn what you want them to do in the show ring. All it takes is practice!

When showing your goat, be well groomed and wear the proper clothing: clothes all white for showing dairy goats, but otherwise, neat jeans or slacks and a button-down or polo shirt; shirt tucked in; no hat; and no brushes or combs in your back pockets. Proper shoes should be worn; do not wear sandals or flip flops into the show ring as there is the chance of your
foot getting stepped on by an animal. On the day of the show, clean the animal’s feet, under the tail, inside the ears, and wipe the eyes and nose.

You can show your animals in either animal placing classes or showmanship classes. In animal placing classes, the animal is judged against other animals in its class, based on its conformation. In showmanship, the handler, not the animal, is being judged. Your appearance and knowing how to show your animal are what counts. Being successful in showmanship requires that you work with your animal. Follow these tips for showing your animal:

1. Examine the appropriate scorecard for your type of goat.
2. Wear appropriate clothing.
3. Provide a clean appearance of yourself and your animal.
4. Lead your animal from the left side.

5. Always keep one eye on your goat and one eye on the judge.
6. Keep the animal between you and the judge; if you need to switch sides, go in front of the animal, not behind.
7. Always keep the goat’s head up, with its body, neck, and head in a straight line.

8. Keep enough distance between yourself and the animal in front of you, but do not keep too much space.
9. When you go to set up your animal, make sure its front feet are not in a hole; preferably the front feet are elevated.

10. As you are presenting your animal to the judge while it is standing still, never pick its front feet off of the ground. Similarly, pushing on the goat’s shoulder while pulling its head (i.e., bracing) is discouraged.


Show Ring Ethics

One of the most visible components of 4-H is livestock shows. Much of the public’s contact with 4-H is at the county fair where show-ring events draw large crowds. What the audience sees reflects on the total Junior Fair program and the entire livestock industry. How are you contributing to that image?

The desire to win at any cost has tarnished the records of 4-H members personally and livestock shows in general. Why have YOU chosen to show an animal? What motivates some to act dishonestly in the show ring?

Competition, if you keep it in perspective, can be a positive tool to help develop important skills in your life. Many 4-H alumni who showed animals during their youth attribute successes in their careers to the diverse skills gained as a 4-H member. You use decision-making skills and critical thinking techniques to select your animal and choose a feeding program. Answering the judges’ questions in a confident manner helps you gain poise, which is beneficial in many other situations. The ability to be a good sport is a characteristic we all need. Certainly self-esteem is affected in the show ring when people watch and applaud your performance!

Is your only goal to win—or do you want to get more out of it than that? Your ability to think while paying attention to the judge, your animal, and other exhibitors is an important skill. Keeping a level head and staying composed is good practice for other challenges in your life. Many long-lasting friendships are developed from showing animals.

Proper training of your animal for the show ring should include only techniques that offer no risk of injury or pain to the animal. If a TV camera was present when you are working with your animal, would you do anything differently than you normally do?

Putting in many long hours of practice with your animal is the only way to achieve that polished, confident look, with the animal giving complete response to your commands.

The effects of unethical practices on animals can be harmful or even fatal. If your animal goes to slaughter and residues are found in the tissue, the animal will be rejected. How does this reflect on you and the animal industry?

Even if you do win, your moment in the spotlight with a champion is short-lived. Think about what will stay with you after the thrill of winning has worn off. What image of the livestock industry do consumers perceive while watching you present your animal?

Using unethical techniques to train, feed, or show your animal is wrong. If you see it happening, don’t turn your back. Tell a committee member, a show official, or other responsible adult.
**Pillars of Character**

**CHARACTER**

- **Trustworthiness.** Be honest, stand for what is right.
- **Respect.** Judge people on their merits or behavior.
- **Responsibility.** Do your best, be a good example.
- **Fairness.** Use the same rules or standards for everyone.
- **Caring.** Treat others as you want them to treat you.
- **Citizenship.** Be committed to the welfare of your community, state, country, or world.

 Adapted from materials developed by the Josephson Institute of Ethics. For more information, go to www.charactercounts.org
Glossary

**antibiotics.** Substances made by organisms that kill bacteria. They are used to fight diseases and infections caused by bacteria.

**artificial insemination.** Depositing of sperm into the reproductive tract of a female other than by natural mating.

**bloat.** Abnormal condition in ruminants due to the accumulation of gases in the rumen.

**breed.** Group of goats with similar traits, such as coat color, head shape, or body conformation, that are passed from generation to generation.

**buck.** An intact male of the caprine species.

**cabrito.** Term used often by Hispanic and Latino populations to describe meat from goats, usually referring to a goat carcass that weighs 15 to 30 pounds.

**caprine.** Of, relating to, or being goat.

**carbohydrates.** Nutrient group that includes sugars, starch, hemicellulose, cellulose, and lignin and is made of up carbon, hydrogen, and oxygen (sometimes abbreviated CHO).

**carcass.** The muscle, bone, and fat associated with the harvest of an animal; left after removal of the head, hide, and internal organs.

**castrate.** To remove the testes from a buck so that it cannot reproduce.

**cervix.** The entrance into the uterus. Protects the uterus from infection.

**Chevon.** Term used to describe meat from goats.

**chromosome.** Contains genetic material. Goats have 60 chromosomes or 30 pairs of chromosomes.

**clip.** All the hair from one goat in one year, or all the hair from one herd in one shearing.

**closed herd book.** A breed association’s policy to restrict registration to offspring of animals already registered.

**colostrum.** It is the mother’s first milk that she produces after kidding. Colostrum is high in antibodies and nutrients for the newborn kid.

**complete feed.** A feed ingredient that provides all of the required nutrients to the animal except for those from the forage, usually in the form of a meal or a pellet.

**concentrates.** Feed ingredients that are mixed with other ingredients to form a diet for the animal, for example, protein concentrates or grain concentrates.

**conception.** When the sperm from the male fertilizes the egg from the female.

**conformation.** The general shape and structure of an animal. Animal placing classes are judged on conformation.

**crossbred.** Goats with parents and/or close ancestors of different breeds.

**cud.** The bolus or ball of feed that is regurgitated from the rumen and chewed to break down particle size of feed for further digestion.
dam. The mother of a kid.
dehorn. To remove the horns.
diet. A nutritionally balanced mixture of feed ingredients.
doe. A female goat.
dominant gene. One gene of the gene pair that determines a characteristic of an animal, such as hair color. Gene pairs can be homozygous or heterozygous.
embryo. A term for the fertilized egg during the early part of the pregnancy.
embryo transfer. When an embryo is removed from the original doe and given to another doe (recipient doe) to develop.
estimated transmitting ability (ETA). An index that predicts the genetic potential of offspring based on the PTI of the sire and dam (or dam’s sire); the higher the ETA, the more genetic potential.
estrogen. A hormone that is responsible for the development of female characteristics and bringing a female into estrus.
estrous cycle. The reproductive cycle of the female that is approximately 21 days in length in cattle. It is characterized by the development of a follicle, ovulation, and the onset on estrus.
estrous synchronization. The use of hormones to bring a group of females into heat at the same time to be able to breed them within a short period.
estrus. Also called heat. The part of the estrous cycle where the female is exhibiting signs that she is ready to be bred. It occurs before ovulation.
F1. The first generation that results from the mating of two individuals.
fertility. The description of how productive a breeding animal will be in terms of reproductive abilities.
fertilization. The joining of the egg and the sperm to form an embryo.
fleece. All the hair from one goat.
flight zone. The animal’s safety zone. The size of the zone varies depending on its degree of tameness.
forages. Plants used as feed for livestock.
fresh doe. A doe that is 0 to 14 days post kidding.
freshen. To begin lactating; to begin producing milk.
gene. The unit of genetic material that controls a trait. Genes are transmitted singly (one of the genes at random of each parent) from each parent to their offspring. Genes occur in pairs to control traits.
genetics. A branch of biology that deals with inherited characteristics and how they vary.
genotype. The gene pair that results in a specific physical trait or phenotype.
gestation. Also called pregnancy. The time period between conception and birth.
grade goats. Goats that are not registered in any breed association herd book but that are often purebreds with the characteristics of a given breed. Grade goats also include crossbred animals. Grade animals are usually ineligible for registration in an association herd book because their parents are not registered.
Halal. In the Islamic religion, that which is permitted or lawful.
Haram. In the Islamic religion, that which is forbidden or unlawful.
hay. A forage source that has been dried and stored.

herd book. The official ancestry record of registered animals of a breed kept by the breed association.

heredity. The passing of genetic material from parents to offspring.

heritability. A statistic used to describe the amount of variation within a population and that is used to evaluate animals and to predict response. The higher the heritability of a trait, the more likely it is to be passed on to the offspring.

heterosis. Also called hybrid vigor. Occurs in crossbreeding where the offspring perform above the average of the parents.

heterozygous. Individuals that have two different genes (one dominant and one recessive) in a gene pair, for example, Pp (P being dominant and p being recessive).

homozygous. Individuals that have the same genes (either two dominant or two recessive) in a gene pair, for example, pp for horns.

hormone. A substance secreted by a gland into the bloodstream that may control other bodily functions.

immunity. The protection from or resistance to a disease that a body has.

inbreeding. Production of offspring from parents more closely related than the average of a population. Inbreeding increases the proportion of homozygous genes.

kemp. Straight, coarse, hollow, and brittle chalky-white hair fibers in the fleece (primary hair) that does not accept dye and that lowers the value of the fleece; fleeces with less that 1% kemp are tolerated.

kid. A young goat less than six months of age.

kidding ease. Refers to a lack of difficulty in giving birth.

kosher. In the Jewish religion, food that is selected and prepared according to certain criteria.

legume. A nongrass plant that produces nitrogen with its roots. Legumes are usually higher in protein than grasses because of this. Some examples of legumes are alfalfa and soybeans.

line breeding. A form of inbreeding in which an attempt is made to concentrate the inheritance of an outstanding ancestor of a herd.

lock. Group of fibers that cling together.

luster. The ability of fibers to reflect light; brightness.

mastitis. An infection or inflammation of the mammary gland.

nutrients. Nutrients provide a living organism with the substances to live. The six nutrients are carbohydrates, fat, protein, vitamins, minerals, and water.

open doe or yearling. A doe or yearling that is not pregnant.

open herd book. A breed association’s policy to allow offspring from nonregistered parents (grade purebred) to be registered. There may be a multi-step process in which registered sires must be used for several generations before offspring receive full or provisional status.

ovary. The female organ that produces eggs for reproduction. There are two ovaries in goats.

ovulation. The process of releasing an egg from a follicle for fertilization. In goats, ovulation occurs 12 to 14 hours after standing heat.
oxytocin. The hormone responsible for milk letdown and for stimulating uterine contractions during calving.

parasite. An organism that requires another organism in order to live. Examples of parasites are lice, worms, and ticks.

parturition. The process of giving birth.

pedigree. A summary of the ancestors of an animal.

phenotype. The physical result or expression of a gene pair or genotype.

pica. An abnormal desire to eat substances that are not normally eaten, such as dirt, wood, and ashes. When seen in goats, it is usually due to a mineral deficiency.

placenta. Also called afterbirth. The membrane in which the kid develops and through which it receives nourishment. After kidding, the placenta is expelled by the doe.

polled. Having no horns.

predicted transmitting ability (PTA). A measure of either yield or type evaluations for selecting the best animals for breeding programs. The higher the number, the more likely improvements will take place using those genetics.

progeny. The offspring of an animal.

progesterone. A hormone that maintains pregnancy in the female.

prostaglandin. A hormone-like substance that is naturally produced by the reproductive tract of a doe. A synthetic version is also produced and used to synchronize estrus in goats.

purebred. Usually refers to registered animals; however, nonregistered or grade animals that have characteristics of a breed and several generations of ancestors of that breed may be considered purebreds.

ration. The amount of food that is nutritionally balanced for a one-day period.

recessive gene. A gene that is not dominant for a characteristic. For the characteristic to be expressed, an offspring must have two recessive genes (be homozygous), one from each parent. The opposite is a dominant gene.

registered animals. Animals that are officially recorded in a breed association herd book.

replacement yearling. A kid that is being kept to enter the herd.

residue. A residue is the amount of a substance that remains in an animal’s body tissue after exposure to a substance. The substance can enter the animal’s body when it is used as a feed or water additive, by an injectable or external application, or by accident.

roughages. High fiber feeds that are necessary to ruminant animals to keep the rumen functioning properly. Examples are hay, corn silage, and pasture.

ruminant. Any animal that has four stomach compartments: the rumen, reticulum, omasum, and abomasum.

semen. The ejaculate fluid that consists of sperm and the fluids from the accessory glands.

silage. Forages that have gone through the anaerobic process of fermentation in a silo. Examples are corn silage and haylage.

sire. The father of a kid.

skirting the fleece. Refers to removing stained fibers, matted clumps, short fibers (less than 2½ inches long), portions with kemp, vegetable matter, and coarse
areas from the fleece. These portions that are removed should be kept separate or discarded as they are of low or no value.

**soundness (in reference to fiber).** Free from “breaks” in the fiber or thin spots in the fleece.

**standing heat.** The window of time during estrus when a female is receptive to mating.

**staple.** One fiber.

**style.** The degree of crimp inherent to a single fiber.

**total mixed ration (TMR).** The process of mixing all feed ingredients into one complete diet that satisfies all nutritional requirements for the day.

**uterus.** The female reproductive organ where the embryo develops into a kid during pregnancy.

**vulva.** The external opening to the female’s reproductive system.

**wean.** To start a kid on solid food versus liquid food. Dairy kids are typically weaned at 6 to 8 weeks of age.

**wether.** A castrated male kid.

**withdrawal time.** The period of time that must pass before a product can be harvested after treatment with a medication.

**zoonotic disease.** Disease that can be transmitted from animals to humans.

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