

Goat Production

Introduction

Goats are one of the oldest domesticated livestock animals and are used for production of fiber, milk, or meat. Goat breeds are commonly split into 'meat goats' and 'dairy goats'. Goats are also raised for other uses such as brush or weed control, livestock exhibits, packing, and as companion livestock (pets). In the United States, the majority (over 2/3) of goats are raised for meat. While goat meat is consumed widely throughout the world and especially in developing countries and among certain ethnic groups, it is not commonly sold in traditional grocery marketplaces in the United States.

Goats are efficient converters of low-quality forages into meat, milk, and fiber for specialty markets. As such, in the past decade in the United States there has been an increase in goat production. If resources are limited, a small herd of goats may be enough to provide supplemental income for small, part-time farmers thereby helping to enable self-sufficiency.



Trisha M Shears

Goat Terminology

Terms that are unique to the goat industry:

Billies Breeding male goats are sometimes called billies.

Buck A male goat that has not been castrated and is used for breeding purposes. Bucks are typically associated with a foul odor arising from scent glands (located near the horn base) and urine which a buck will spray on its face, beard, front legs and chest.

Cabrito Roasted meat from goat kids 4 to 8 weeks of age; used as barbecue meat.

Chevon Meat from goat kids 48 – 60 pounds or 6 – 9 months of age.

Doe A female goat that has delivered kids ('kidded'); also referred to as a 'nanny'.

Doeling A doe from the time that it has been weaned (taken away from its mother) until she has delivered a kid.

Goat For USDA Food Safety and Inspection Service, 'Goat' refers to animals of both sexes and any age, however producers use specific terms to describe various life stages/types of goats when discussing and marketing their animals.

Kid A goat that is less than 1 year old.

Kidding The process of giving birth.

Wether A castrated male goat (unable to reproduce); most male goats in production settings are castrated at a young age.



Don Preisler, School of Veterinary Medicine UC Davis

Kid



Don Preisler, SVM UC Davis

Doe



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Buck



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Goat Breeds

Over 100 different breeds of goats have been developed in modern times. The breed that a producer chooses to raise depends on the product that is desired. For example, Angora goats are used primarily for fiber production, while Boer goats are more suited to meat production. Breeds of goats used for milk production in the United States are Alpine, LaMancha, Nigerian Dwarf, Nubian, Oberhasli, Saanen, Sable (a Saanen with a colored coat), and Toggenburg. Young males of any dairy breed can also be used for meat production; however, meat goat carcasses are generally leaner and more muscular than dairy goat carcasses. Small-frame breeds such as Nigerian Dwarf and Pygmy are commonly kept as companion ('pet') livestock. Almost any breed can be used for brush control. Some of the more commonly kept breeds are listed below:

Alpine



Damien Hardy

Primarily a dairy breed of goats that originated in the Alps, Alpine goats have no distinct color pattern and may range from pure white through shades of fawn, gray, brown, black, or combinations of these colors. These are hardy, adaptable animals that thrive in any climate while maintaining good health and excellent production.

Angora



Erica Peterson

These goats are used to produce mohair. The Angora dates back prior to early biblical times. They originated in central Turkey, a mountainous area with a dry climate and extreme temperatures. The average U.S. Angora goat produces about 5 pounds of mohair per shearing, and is usually sheared twice per year. Both sexes have horns.

Boer



Wikipedia

This breed is originally from South Africa and is used primarily as a meat goat. Unlike dairy goats, which breed only in the fall to winter months, Boer goats (as well as some other meat goat breeds) are polyestrous, meaning they can breed throughout the year. This allows for year-round kidding and continuous goats for meat production.

LaMancha



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A dairy breed that can be recognized by its extremely short ears which may, on quick inspection, appear to be absent. Any color or combination of colors is acceptable with no preferences. The hair is short, fine and glossy.

Nigerian Dwarf



Trisha M. Shears

A miniature goat of West African origin that is similar to that of larger dairy goat breeds. This breed is often raised for show purposes, but will be disqualified from the show ring for being over-sized. Many people raise Nigerian dwarf or Pygmy goats as pet animals or for animal projects for 4-H or FFA (Future Farmers of America) youth development programs.

Nubian



Wikipedia

A multi-purpose goat that is useful for the production of milk, meat, and hides. This breed is named for Nubia, in northeastern Africa where early ancestors of today's Nubian breed originated. The breeding season for Nubian does is longer than some other dairy breeds, so it is possible to produce milk year round with these goats. The breed is characterized by its long, pendulous ears and Roman nose.

Saanen



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The Saanen dairy goat originated in the Saanen Valley in Switzerland. Saanen goats are known for high milk production, and medium to large body size with a white or light cream colored coat.

For those interested in learning more about goat breeds, visit <http://www.ansi.okstate.edu/breeds/goats/> for additional details on these and other goat breeds.

Goat Operations

In the U.S., goat raising occurs under extremely varied conditions. Access to inexpensive forage/browse (forbs, woody plants, vines, brush) is critical for economical production. Therefore, open or fenced range with uncultivated acreage is the most common production setting used for goats intended for meat or fiber production. A fenced farm, with cultivated grasses or browse is also frequently encountered, for at least a portion of the year. A dry lot, where feed is delivered to the goats, is typical of dairy goat operations, where ready access to the animals is required for milking. Many producers will use a combination of some or all of these, depending on seasonal feed availability and access.

Goats require tight fencing. Electric netting fencing material can provide a temporary enclosure; however, goats will eat through such a fence if not continuously electrified.

Feeding Goats

Goats have a preference for browse. Goats can be grazed with other livestock, and can complement sheep and cattle, thus maximizing the use of marginal pastureland.

Pasture grasses, either native or cultivated, are the primary feed source used by goat operations. A carefully planned rotational grazing program can enhance pasture production and help control internal parasites. Moving goats out of pasture when plant growth is still over three inches tall can help reduce internal parasite infections.

Concentrates (corn, milo, barley, wheat, oats, and rye) may be used as an energy supplement, especially for goats that are in the later stages of pregnancy or during lactation when they are producing milk. Cut hay is also commonly fed, especially when pasture and browse are less readily available.

Dairy Goat Dry Lot



Allison Lippert, FDA

Grazing Goats



USFS Region Five

Identification

Commonly used types of animal identification (ID) are collars, leg bands, tattoos placed in the ear or tail fold (important for goats with very little ear tissue, such as LaMancha), plastic or metal ear tags, radio frequency identification (RFID) tags and RFID implants (microchips). Animal IDs are used by producers for official registration with breed registries, tracking animal health and production for record keeping purposes, and for meeting state/federal requirements when goats are moved interstate or in commerce/exhibitions. Today, microchips are becoming increasingly more common, especially in very small breeds such as the Nigerian Dwarf and Pygmy goats. Microchips are usually placed in the tail web (the loose, hairless area under the tail) and require special “readers” to obtain the information on the tag.

An example of a federal disease control program that requires goats, as well as sheep, to be officially identified is the National Scrapie Eradication Program (NSEP) which is coordinated by the U.S. Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS). Scrapie is a transmissible spongiform encephalopathy affecting sheep and goats. It is a uniformly fatal degenerative neurologic disease that is related to bovine spongiform encephalopathy (‘mad cow’ disease). Under the National Scrapie Eradication Program, all goats, except low-risk commercial goats exempted by the State in which they reside, goats in slaughter channels, and castrated male goats (wethers), must have official identification when moving in interstate commerce or during ownership changes. In addition, some States may require other classes of goats to be identified or may exempt certain animals during intrastate commerce. Current information on each individual State’s identification and movement requirements can be found at www.eradicatescrapie.org.

Record Keeping

While some large producers may use computer software programs to keep track of production, many producers use paper/written records as their primary form of record keeping. Breeding records and drug usage records are most commonly kept. Dairy goat producers often track milk production as well.

Ear Tag



Premier 1 Supplies



Don Preisler, School of Veterinary Medicine UC Davis

Life Cycle of a Goat from Birth to Death

Breeding/gestation Goats are classified as being seasonally polyestrous. This means that they have estrous cycles and can be bred for only a part of the year. In the United States, most breeding occurs in late summer through early winter. The gestation period is around 150 days; therefore, kidding typically occurs in late winter to spring. Anywhere from one to three (occasionally four) kids are born from each pregnancy. This varies a lot with breed. Most goats have one pregnancy per year; however some meat breeds may have three pregnancies every two years. Young does can enter the breeding herd and be bred as early as seven months of age. Replacement does should be approximately two-thirds of their mature weight when they are first bred.

Nursing/Lactating Dairy does will be milked for approximately 10 months following kidding, and then held dry for two months prior to her next kidding. This will allow her to regain weight and prepare for the next lactation. Non-dairy goats will raise their kids to weaning which can occur anywhere from six to 12 weeks of age, depending on the intended use of the kid.

Leaving the Herd Unlike cattle or pigs, dedicated facilities for fattening and finishing goats are uncommon. More typically, a goat intended for slaughter may receive some extra feed for a few weeks prior to slaughter.

Young kids are sold for meat at a variety of ages, however, the most common practice is to slaughter when the kid is about four to six months of age or 50 to 80 pounds.

Does and bucks are culled and slaughtered primarily due to old age, poor performance, and economic issues such as drought, herd reduction, or market conditions. Culled animals are usually sold to livestock auction markets or directly to slaughter. In a typical goat herd, about 15 – 20% of does and bucks are culled each year.

Breeding Does



Don Preisler, School of Veterinary Medicine UC Davis

Dairy Milking Barn



Allison Lippert, FDA

Diseases and Treatments

Goats are generally hardy animals and can survive under harsh environmental conditions. However, infectious and non-infectious diseases can and do occur, which can negatively impact health and production. Some of the more commonly encountered disease conditions of goats are presented below.

Abscesses/Boils/Lumps on the head, shoulder, upper rear legs, and internally can be caused by a disease called caseous lymphadenitis (CL). This is an economically important disease in goats caused by the bacterium *Corynebacterium pseudotuberculosis*. This organism also causes a disease in horses called 'pigeon fever'. Different strains of *C. pseudotuberculosis* affect different domestic livestock species. The choice of treatment for CL depends on the location of the abscess as well as prior presence of the disease within the herd. Antibiotics can be used to treat the condition however responses to antibiotic treatment alone can be poor.

Caseous Lymphadenitis on the Neck of a Goat



Dr. Joanie Rowe, School of Veterinary Medicine UC Davis,

Mastitis/Udder Inflammation is a common disease of dairy animals, including dairy goats and cows. While bacterial infections account for most cases of mastitis in goats, other agents can cause mastitis including viruses. In severe cases of bacterial mastitis, the udder will be hot and painful, the milk will be abnormal, and milk production will be reduced. The animal may also be systemically sick depending on the severity of the infection and causal organism. Producers usually treat such conditions with antibiotics administered either systemically (intramuscular, subcutaneous, or intravenous) or intra-mammary.

Joint Swelling or Crippled Goats are common reasons for goats to be culled from a breeding herd. Producers may not establish a definitive diagnosis for the cause of disease, and often will administer antibiotics, such as procaine penicillin G, in the hopes that the causative agent is a bacteria that is susceptible to the drug. Because some of the causes of joint swelling can be bacteria or viruses that can be transmitted between animals in a herd through activities such as milking and kidding/nursing, it is generally a wise decision on the part of the producer to consult a veterinarian to determine any underlying causes of joint swelling in crippled animals.

Parasites both internal (such as roundworms, stomach worms, lungworms) and external (such as mites and lice), are often seen in goats. Weight loss, rough hair coat, and diarrhea are common signs of parasitism. Anemia (pale mucous membranes) due to internal parasites can also be an indicator of parasitism. Pasture management is important in control programs for parasites of goats.



Tissue Residues and Goats

Whenever a drug is administered to an animal in which the meat or milk will enter the food supply, there needs to be adequate time between drug administration and slaughter or milking for the drug to be cleared from the animal's system. 'Withdrawal time' is the time required following the administration of an approved animal drug to an animal until the time that tissue and/or milk residues of the drug have fallen below a federally approved concentration limit and the animal and/or its milk are safe to enter the human food chain. 'Withdrawal period' is also often used to describe this period of time. 'Withdrawal interval' is a term used to describe a withdrawal period for a drug that has been used in an 'extra-label' manner, or not in accordance with the directions on the manufacturer's label. Sometimes withdrawal period/time/interval are used interchangeably; however, it is important to understand the distinctions between these terms.

Violative tissue residues are possible in meat or milk when drugs, which include withdrawal time, are used in ways that are not in accordance with the directions on the drug manufacturer's label. For example, procaine penicillin G, an over-the-counter (OTC) drug that is readily available at feed stores, is often administered at doses that far exceed those listed on the label. If a producer has not consulted with a veterinarian, this would be a violation of the Animal Medicinal Drug Use Clarification Act (AMDUCA), and the producer may not realize that an extended withdrawal interval is required. This could result in violative drug residues occurring in the human food chain.

Inadequate record keeping or lack of individual animal identification may lead to an animal being sent to slaughter before an established withdrawal time/interval has elapsed.

Since goats are a species of minor economic importance, there is limited economic incentive for manufacturers of animal health products to obtain drug labels that include goats. As a result there are less than a dozen compounds with label approval for goats. In order to treat disease and limit animal suffering, goats are frequently treated with products approved for other species such as cattle. Using medications in an unapproved species, without the guidance of a veterinarian, is a practice which increases the risk of violative tissue residues.

Extra-label use of drugs must always be done in consultation with a veterinarian, who can help establish a recommended withdrawal interval for meat and milk. One commonly used resource for veterinarians to help in establishing such withdrawal intervals is the Food Animal Residue Avoidance Databank (FARAD). FARAD is a congressionally-mandated risk-management program that is supported by the United States Department of Agriculture (USDA). For information about FARAD, visit www.farad.org.

Neck Chain on a Goat for Identification



Wikipedia



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