Basic Goat Husbandry
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Introduction
Every goat producer is confronted with simple management tasks such as:

- telling the age of a goat.
- animal identification.
- hoof trimming.
- castration.
- body condition score.

Ageing Goats

*Number and arrangement of teeth*

Estimating the age of goats is done by looking at the teeth. The arrangement of teeth on the jaw, from front to back, is incisors, canines, premolars, and molars. Ruminants only have incisors on the bottom jaw. The top jaw has a thick layer of tissue called the “dental pad.” Ruminants do not have canine teeth and this open space along the jaw is useful when needing to insert one’s fingers to pry open a goat’s mouth for drenching, tubing, or other purposes.

Mature goats will have a total of 8 incisors (4 pair), 6 premolars (3 pair), and 6 molars (3 pair). It is customary when ageing goats by looking at their teeth to discuss teeth in terms of “pairs” rather than in total.

*Telling the age of goats*

Young goats have deciduous or “baby” teeth that are replaced by permanent teeth at a later age. Kids are generally born with the central pair of deciduous incisors (incisors erupt from the center outward) with the second pair erupting at 1 to 2 weeks, third pair at 2 to 3 weeks and the fourth pair erupting at 3 to 4 weeks of age. Kids also will develop 3 pairs of deciduous premolars but no molars.

As kids age, the deciduous incisors are replaced by permanent incisors, again from the center pair outward. The middle pair of deciduous incisors will be replaced sometime around 12 months. The second, third, and fourth pairs are replaced at roughly yearly intervals at 1.5 to 2 years, 2.5 to 3 years, and 3.5 to 4 years of age. Thus, a goat with 1 pair of permanent incisors is roughly 1 year of age, 2 pair of permanent incisors is 2 years of age, and so on. At four years of age when all permanent teeth are in place, the animal may be referred to as having a “full mouth.”

Ageing goats over 4 years of age is more difficult. Over time, the gums recede and teeth appear elongated. Teeth may also become broken or worn down from grazing and foraging. Animals that have broken or lost teeth are often referred to as “broken mouthed.” “Undershot” is a condition in which the lower jaw is longer than the upper jaw whereas “overshot” is the opposite. Malformed teeth can affect the ability to graze and consume nutrients.

Animal Identification

The proper identification of animals is essential. Proper identification enables the producer to keep comprehensive records for milk production, reproduction, health problems, and management practices. The efficient maintenance of this information requires a permanent identification system. Several systems of identification may be used. The system selected will depend upon the size of the herd, the environmental
conditions, the primary purpose for identifying individual animals, and regulations of federal government and breed-governing bodies. There are two basic types of identification: permanent and non-permanent. Permanent identification includes tattooing, ear notches or microchips. Non-permanent identification includes paint, chalk and tags.

**Tattooing**

Tattooing is one method of identification that is permanent if properly done. However, it is not easily viewed and may require another complementary method of identification, such as an ear tag, that is visible from short distances. Tattooing involves making needlelike projections in the goat’s skin. The tattoo ink is forced into the punctures and remains visible after the puncture wounds heal. It is a good idea to sterilize the equipment and clean the goat’s ears to help prevent the spread of some blood-borne diseases. On older animals some tattoos may be difficult to read; holding a bright light source such as a flashlight behind the ear when reading may make the tattoo more legible.

To tattoo an animal, begin by inserting the proper digits into the tattoo pliers. Check for correctness by pressing the pliers onto a piece of paper or cardboard. Secure the goat with a halter or head gate and clean the ear to be tattooed with alcohol. Don’t use water for cleaning as it could enter the ear canal and result in infection. Clip or trim any excessive hair present. A generous amount of ink should be applied to the center of the ear between the ribs of cartilage (green ink should be used for dark ears). Position the tattooing pliers between the ribs of cartilage and squeeze firmly forcing the needle-like numbers into the ear tissue. Care should be taken in removing the tattoo pliers from the ear to not scratch the tattooed area. Ink should be reapplied and rubbed into the tattoo. Using an old toothbrush will assist in pushing the ink into the punctures. Afterwards, the equipment and individual tattoo pieces should be cleaned and sprayed with alcohol.

**Ear tags**

Ear tags are an easy way to identify each goat in the herd. Unlike tattoos, they can be read without actually having to catch the goat. Unfortunately, unlike tattoos, they can break or be ripped out of the goat’s ear. Some producers use two ear tags because of this problem. Goats that are shipped are required to have a scrapie ear tag and these can be used for animal identification. Before putting in the ear tag, it is important to record what ear tag number is assigned to the goat. Ensure the ear tags are inserted between the cartilage ribs on the ears. The producer whose goats have been ear tagged will have an easy-to-read identification number which can be used for herd records.
Microchip

The insertion of a microchip in the base of the ear or tail web of the animal is another form of permanent identification. After insertion, the microchip should be scanned to ensure that it is reading correctly. Care should be taken in recording the microchip number against the tag number of the animal to ensure the integrity of the microchip identification. Exhibitors are required to provide their own reader at many livestock shows.

Ear notching

Ear notching is commonly practiced in identifying goats. It has the advantage of being visible from a distance allowing identification without the necessity of catching the animal and can accommodate numbers up to 9999. Ear notching pliers are used to put “V”-shaped notches in the edges of the ear and a hole punch is used to punch holes in the middle of the ear, if necessary. The animal is restrained and notches and holes may be treated with iodine. As this process results in bleeding, the notching pliers should be disinfected between animals to prevent transmission of any blood-borne diseases. The notching system used is that begun in the Angora industry and adapted for meat goats. However, some producers may use alternate numbering system.

Generally, notches on the goat’s left ear mean: 10 (top), 1 (bottom), 100 (end); and 1,000 (center hole). On the goat’s right ear, notch values are: 30 (top), 3 (bottom), 300 (end); and 3,000 (center hole). Thus, a goat with the number 135 would look as follows: 1 notch on end of left ear (100); 1 notch on top of right ear (30), 2 notches on bottom of left ear (2); 1 notch on bottom of right ear (3) with a total value equaling 135.

Hoof Trimming

Hoof trimming goats is a simple task that can be easily learned. The goal of hoof trimming is to allow your goat to walk normally. The lack of trimming, or improper trimming, can lead to foot and leg problems. The amount of time between trimmings depends on many factors, such as type of terrain, the goat’s age, level of activity, nutritional level, and genetics. In environmental areas where natural wearing does not occur, producers need to trim hooves on a regular basis. Goats raised in relative confinement and on small acreages may require more frequent trimmings than goats raised in vast pastures. Generally, foot trimming should be done as needed.
Each hoof of the goat has two toes. The wall of each toe tends to overgrow and must be trimmed. The heels of the hoof and the dewclaws (especially on an older goat) may also develop extra tissue that needs to be trimmed. Most producers use foot shears or hoof trimmers. Other tools used may include a hoof knife with sharp edges, a pocketknife or a rasp. Pocketknives or a hoof knife can be dangerous to use for both operator and animal as goats may jump. Some people like to use hoof nippers to cut off the tip of the hoof or file it down with rasps.

Initially, use the point of the hoof trimmers to remove any dirt from the outside and the bottom of the hoof. The front of badly overgrown hooves can then be removed. The sides of the hoof should be cut back even with the sole of the foot. Continue to trim the sides around one toe and repeat the process on the other toe. Trim the frog and heel flat until the sole is parallel to the hairline of the pastern. Trim off thin slices. A good rule to follow is to stop when you see pink. If blood appears stop trimming and apply blood stop powder and finish the trimming at a later time.

**Castration**

All young bucklings that are not to be evaluated as replacement bucks should be castrated. For some producers, this means castrating between the ages of 2 and 4 weeks. Castration of young animals produces less stress in the animals and there is less chance of complications occurring due to the procedure. Young bucks are capable of breeding females as early as 4 to 5 months of age. If a decision is made to not castrate young males, management practices should be in place to prevent unwanted matings.

Three common ways to castrate bucks is through the use of an elastrator that places a rubber ring around the scrotum, a Burdizzo® clamp that crushes the spermatic cord, and the use of a knife to cut the scrotum and remove the testicles.

**Elastrator**

Using an elastrator is an inexpensive, quick, and bloodless method of castration. It involves putting a heavy rubber ring around the scrotum near the body. The ring stops blood circulation to the scrotum and testicles and these will dry, shrivel, and slough off in 10 to 14 days. It must be done while the scrotum is still very small, i.e., from three days to three weeks of age depending on breed size, before the scrotal muscles and associated tissues develop.

The rubber ring is first put on the prongs of the elastrator (a pliers-like device that when squeezed will open the ring allowing the scrotum and testes to pass through). The male
kid is restrained and the scrotum is passed through the open ring with the prongs of the elastrator facing the kid’s body. The producer must feel the scrotum to ensure that both testicles are in the scrotum below the ring. The rubber ring is positioned close to the body and then slipped off the elastrator prongs. Care must be taken to not apply too close to the body where one runs the risk of trapping the urethra.

**Body Condition Score**

Every goat producer has animals that are either too thin (under-conditioned) or too fat (over-conditioned). Failure to recognize these animals and take corrective actions will cost dearly in terms of decreased fertility, increased disease or internal parasite incidence, decreased milk production, and increased operating costs. Thus, goats need to be maintained with a moderate amount of body condition. When overall body condition starts to decrease in the herd, it is a sign that managerial intervention is needed such as supplemental feeding, deworming, pasture rotation, etc. Conversely, when overall body condition starts to increase in the herd, it is a sign that the producer should reduce supplemental feeding. Ignoring an animal’s body condition and waiting to intervene until goats become either too thin or too fat may result in production and/or animal losses or decreased profits from overfeeding. Therefore, producers need to develop skills in assessing body condition of their goats so that a desired moderate body condition can be maintained.

Body condition score (BCS) has been shown to be an important practical tool in assessing the body condition of cattle, sheep, and goats because BCS is the best simple indicator of available fat reserves which can be used by the animal in periods of high energy demand, stress, or suboptimal nutrition.

Scoring is performed in goats using a BCS ranging from 1.0 to 5.0, with 0.5 increments. Examples of BCS of 1.0, 2.0, 3.0, 4.0, and 5.0 are given using photographs and written descriptions. Assigning the 0.5 score increment is done when the animal being evaluated is intermediate to the BCS described. A BCS of 1.0 is an extremely thin goat with no fat reserves and a BCS of 5.0 is a very over-conditioned (obese) goat. In most cases, healthy goats should have a BCS of 2.5 to 4.0. BCS of 1.0, 1.5, or 2.0 indicate a management or health problem. A BCS of 4.5 or 5 is almost never observed in goats under normal management conditions; however, these BCS can sometimes be observed in show goats.

It is important to note that BCS cannot be assigned by simply looking at an animal. Instead, the animal must be touched and felt. The first body area to feel in determining BCS is the lumbar area, which is the area of the back behind the ribs containing the loin. Scoring in this area is based on determining the amount of muscle and fat over and around the vertebrae. Lumbar vertebrae have a vertical protrusion (spinous process) and two horizontal protrusions (transverse process). Both processes are used in determining BCS. You should run your hand over this area and try to grasp these processes with your fingertips and hand. The second body area to feel is the fat covering on the sternum (breastbone). Scoring in this area is based upon the amount of fat that can be pinched. A third area is the rib cage and fat cover on the ribs and intercostal (between ribs) spaces.

With practice, evaluating the BCS of an animal will only take about 10-15 seconds. By adding BCS as a regular part of your management program, you can more effectively monitor your feeding and herd health program for a healthy and productive herd.
Lumbar Region

Spinous process

Transverse process

Sternum

Fat

Muscle
Visual aspect of the goat: Emaciated and weak animal, the backbone is highly visible and forms a continuous ridge. The flank is hollow. Ribs are clearly visible. There is no fat cover and fingers easily penetrate into intercostal spaces (between ribs).

The spinous process of the lumbar vertebrae can be grasped easily between the thumb and forefinger; the spinous process is rough, prominent, and distinct giving a saw-tooth appearance. Very little muscle and no fat can be felt between the skin and bone. There is a deep depression in the transition from the spinous to transverse process.

The hand can easily grasp the transverse processes of the lumbar vertebrae which are very prominent. Clearly half of the length of the transverse process is discernible.

Sternal fat can be easily grasped between thumb and fingers and moved from side to side. The cartilage and joints joining ribs and sternum are easily felt.
Visual aspect of the goat: Slightly raw-boned, the backbone is still visible with a continuous ridge. Some ribs can be seen and there is a small amount of fat cover. Ribs are still felt. Intercostal spaces are smooth but can still be penetrated.

The spinous process of the lumbar vertebrae is evident and can still be grasped between the thumb and forefinger; however, a muscle mass can be felt between the skin and bone. There is an obvious depression in the transition from the spinous to transverse process.

The hand can grasp the transverse process but the outline of the transverse process is difficult to see. About one-third to one-half of the length of the transverse process is discernible.

Sternal fat is wider and thicker but can still be grasped and lifted by the thumb and forefinger. The fat layer can still be moved slightly from side to side. Joints are less evident.
Visual aspect of the goat: The backbone is not prominent. Ribs are barely discernible; an even layer of fat covers them. Intercostal spaces are felt using pressure.

The spinous process of the lumbar vertebrae cannot be easily grasped because the tissue layer covering the vertebrae is thick. When running a finger over the spinous process, a slight hollow is felt. There is a smooth slope in the transition from the spinous to transverse process.

The outline of the transverse process of the lumbar vertebrae is slightly discernible. Less than one-quarter of the length of the transverse process is discernible.

Sternal fat is wide and thick. It can still be grasped but has very little movement. Joints joining cartilage and ribs are barely felt.
Visual aspect of the goat: The backbone cannot be seen. Ribs are not seen. The side of the animal is sleek in appearance.

It is impossible to grasp the spinous process of the lumbar vertebrae, which is wrapped in a thick layer of muscle and fat. The spinous process forms a continuous line. There is a rounded transition from the spinous to transverse process.

The outline of the transverse process of the lumbar vertebrae is no longer discernible. The transverse process forms a smooth, rounded edge, with no individual vertebrae discernible.

Sternal fat is difficult to grasp because of its width and depth. It cannot be moved from side to side.
The thickness of the muscle and fat is so great that reference marks on the spinous process are lost. The spinous process forms a depression along the backbone and there is a bulging transition from the spinous to transverse process.

The thickness of the muscle and fat is so great that reference marks on the transverse process are also lost. It is impossible to grasp the transverse process.

The sternal fat now extends and covers the sternum, joining fat covering cartilage and ribs. It cannot be grasped.

Visual aspect of the goat: The backbone is buried in fat. Ribs are not visible. The rib cage is covered with excessive fat.