Sheep & Goat Management Guidelines

Contents

Introduction ................................................................. page 2
Facilities ........................................................................ page 3
Behavior ......................................................................... page 6
Stress .............................................................................. page 14
Management Practices (Handling) ........................................ page 16
Identification ................................................................. page 24
Nutrition ........................................................................... page 29
Management Practices (Health) ............................................ page 31
Management Practices (Preventive Medical Treatment) ........ page 43
Management Practices (Illness or Injury) ............................. page 62
Management Practices (Reproduction & Parturition) .......... page 71
Transportation ............................................................... page 102
Glossary ........................................................................ page 104
INTRODUCTION

The sheep and goats at Shone Farm are maintained to assist and enhance the value of a student’s experience by helping to facilitate the practical portion of classes as well as for production and processing for sales with extensive grazing on 100 acres of pasture. We typically have about 25 breeding ewes per year, 5 replacement ewes and one wether. Breeding is by natural cover from August to October, lambing is from January to March and weaning is April to July. The Shone Farm Sheep Maintenance Calendar at the beginning of this section is a good reference for most of the annual operations.

The goats are a future enterprise. The goal is to provide grazing in some underutilized areas for the farm such as the entry road way.

Year round observations and monitoring of the sheep and goats is supervised by the Livestock Technician and carried out by student employees 2 or 3 times daily.

Spring fed water troughs are available in all pastures and year round creeks are also utilized seasonally by the sheep for water. Sixty percent of the pastures are irrigated and capable of providing 60 to 70 percent of the nutritional needs of the flock. We will need to develop portable water sources for the non-traditional areas where we intend to graze the goats. Supplemental feed is provided in the form of alfalfa and grass hay from late fall to early spring.

Many of the Standard Agricultural Practices (refer to Maintenance Calendar) are performed by students under the supervision of the Livestock Technician or the Livestock instructor.

All husbandry and health practices are coordinated by the Livestock Technician, with special attention paid to distress inflicted from illness or management procedures. Animal identification is accomplished by ear tagging and utilized to facilitate herd record keeping.

This document has sections titled Standard Operating Procedures which are written in red. These serve as guidelines for the program and we print them out separately to create management guidelines to train staff and students.
FACILITIES

The Shone Farm Sheep & Goat Unit consists of: Two main pens enclosed with wood framed wire and pipe panel gates; a “Creep” pen enclosed by wood slat fencing and solid sides with pipe panel gates on the front end and solid gates on the back end; a “Nursery” pen enclosed with wood framed wire, two wood slat man gates and a solid back gate; a “Show Pen” enclosed by pipe framed wire permanent panels. There are also two pens with concrete floors previously used for pigs that are available if needed.

Within the Creep Pen is a chute that contains a no-back up guillotine style door, a scale and holding chute.

The Pens are used for:

- Sorting
- temporary holding (less than a full day) while vaccinating, deworming, castrating, exhibition, judging clinics and contests
- short term holding (1 - 2 days) for sheep leaving the facility or observation
- moderate term holding (3 – 7 days) for lambing, quarantine, illness, injury and observation
- long term holding (8+ days) for injured or ill sheep

When occupied, sheep and goat pens are cleaned at least once per day and the animals are rotated to clean and dry pens whenever mud or moisture accumulates.

Any pens containing lambs or kids under 1 week old, have straw spread out on the floor and in any holes the lambs may be able to fit through. The straw should be replaced every day during cleaning and hauled away, along with the manure and soiled hay, to the compost piles.

While in pens, sheep and goats are provided adequate clean water and fed at least twice per day according to their weight and physical demands.

When possible, sheep and goats housed in the pens for moderate term, or longer will have a pen mate or another ovine or caprine penned nearby.
FACILITIES continued

Sheep and Goat Unit Alley: The Shone Farm sheep and goat unit alley consists of five sections separated by for gates. Each gate is used to open and close a pen as well as to create a section in the alley. When sheep and goats are being moved down the alley and into the chute, each gate is closed in succession behind the animals. This allows for crowding of the animals and consistent forward movement with reduced turning around. There are gates on either end of the alley. The south gate leads to the “Lot Pasture” while the north gate is used to load/unload animals and for vehicle passage.

Patience is paramount while moving sheep and goats through the alley. Animals shall be moved through in a quiet, calm and humane manner while being pushed forward consistently and methodically [see “Behavior” and “Management Practices (General)”).

The amount of pressure used to move the sheep and goats shall be modulated as necessary. A scale of 1 – 10 shall be considered when moving sheep and goats; 1 being minimum pressure and 10 being maximum pressure. Handlers shall start with “1” and move up and down the scale to obtain desired results. Pressure should be immediately released when animals comply and move as desired, and immediately applied when they do not. Handlers shall not “nag” sheep and goats by constantly yelling at them or prodding them. This is an unnecessary form of pressure if animals are complying.

Moving the entire flock or herd of sheep and goats into the alley, chute, and holding areas offers the best results because they will want to stay together and within sight of each other. Sheep move best in a wide circular or sweeping pattern; handlers should avoid forcing them to turn in small spaces or circles. Goats do not flow through the system as easily as sheep so patience is paramount when moving them, however, they also move in sweeping circles – with older females (Queens) moving first.

Pastures: Although sheep and goats in confinement have minimum space requirements, the amount of land needed for sheep to graze and goats to browse can vary considerably. Depending on several environmental factors, including the amount and type of forage available, slope of the pasture, water access, and depending on many physiological and species factors, such as body condition, breeding cycle, age, and sex, the amount of grazing land desired for sheep and goats will vary.
Shone Farm has two irrigated pastures, five dry pastures (that grow grass in the wet seasons). Three of the dry pastures are smaller and used primarily for short term holding.

Sheep and goats are moved to different pastures based on pasture condition, body condition, nutritional needs and management considerations. Another large factor in pasture use is predators. Sheep and goats may be moved to the pasture to graze during the day and brought into the barn at night or some may stay out in the pastures with guard animals.

Sheep and goats are supplemented with Orchard Grass Hay, Alfalfa Hay, Trace Mineral Salt Blocks, Protein Blocks, Lick Tubs and Grain with Bovatec for prevention of Coccidiosis when needed.

**Fencing:** Fence statutes are in place to protect livestock, people and property from damage or injury. There are two forms of these laws: Open Range and Closed Range. Local county governments in California determine whether the range will be “open” or “closed” however, most California counties have closed range laws. (See Glossary: Closed Range)

**Fences at Shone Farm** consist of three different types: 3’ – 4’ Field Fencing with 2 – 3 strands of barbed wire stretched above the Field Fencing, Board Fencing and Board Fencing covered with 1” x 2” Non-Climb wire. All perimeter fences shall be “Lawful Fences” while interior fences may be of lower standard.

**Water Availability:** Sheep and goats should always have access to clean, fresh water and it must be available in sufficient quality and quantity for the animals to drink as they need or want to, without competition.
BEHAVIOR

**Knowing your Sheep and Goats:** It is important to observe and assess the behavior patterns of sheep and goats to determine the presence of good health, stress or pain. When observing sheep and goats individually and as a flock/herd, illness, injury and stress can be noticed quickly and proper care should be taken to create a healthier, more productive flock/herd. Whenever illness, injury or stress is observed the standard operating procedure at Shone Farm will be to identify the causal agent(s) and determine how to eliminate or reduce future incidences.

Sheep are prey animals, therefore, they are flee animals – not fight. When faced with danger, their strategy is to use avoidance and rapid flight to avoid being eaten as opposed to standing their ground and fighting. Sheep will reform their group and turn to look at the predator after fleeing – using their natural instinct to band together for safety.

Goats are prey animals, therefore, they are flee animals – not fight. They are agile and flighty and will scatter and face the enemy, rather than flock, like sheep do.

Sheep never walk a straight line but rather move in such a way where they can see their backside first with one eye and then the next – in doing so, they can spot perceived forms of danger from 1,200 – 1,500 yards away.

Sheep would be vulnerable to predators if they showed pain or appeared weak or injured. Fortunately, they have evolved with a high tolerance for pain which can reduce this vulnerability, however may cause signs of injury or illness to be masked. By contrast, Goats scream in terror and pain and are very dramatic in stressful situations.

Ethologists (Animal Behaviorists) have considered that the time sheep spend ruminating is an indication of the basic nature of sheep. Because ruminating can take several hours and it requires that an animal be comfortable and relaxed, sudden stresses will cause rumination to abruptly cease. During rumination, ruminants are usually in groups, may engage in self-grooming behavior and exhibit sleepy and pensive expressions. Aggression is reduced with little or no stressful isolation of individuals (under normal conditions). Rumination and accompanying behavioral activities are theorized to be important to the strong flock instinct of sheep. Rumination is also speculated to be an “anti-boredom” activity.

Handling stress lowers conception rates and reduces both immune and rumen function, therefore, recognizing and understanding typical and atypical behavior in sheep & goats in general, as well as in the individual flock/herd is of paramount importance.
Contrary to common belief, sheep are not stupid – ranking just below the pig and equal in intelligence to cattle among farm animals. They simply react to changes in their environment based on instincts that have developed over centuries. By using these instincts to our advantage, stress can be avoided by both the animal and handlers.

Goats are intelligent animals and quite often prefer to do things their own way. They act on a whim and are often viewed by handlers as impulsive and unpredictable. Goats are very curious animals and nimble – a combination that gets them into trouble and a reason to have proper fencing.

Sheep are “gregarious” and stick together in a large unit made up of smaller units based on their own preferences – banding together out of instinct for protection. Sheep like to maintain a safe distance (or zone) and a flight distance that is defined as the space between them and other people or animals the sheep will tolerate before moving.

Goats tend to spread out in the pasture and eat where they prefer on their own, however, when in a large pen as a group, they will stay somewhat together. There is a clear hierarchy in goats so the lead goat (Queen) will eat first and sleep where she wants to. The rest of the herd will settle as hierarchy dictates.

In handling and moving sheep and goats properly, being a leader is key. They will willingly go where you want them to go and will move quietly and naturally when properly guided because it is in their nature to depend on a lead sheep or goat in their flock/herd. The oldest ewe is usually the leader in wild flocks whereas, the older and more aggressive ewe and oldest or wisest doe (Queen) is the leader in farm and range flocks. If we can control the leaders, we can control the flock. They can be trained to come when called and will readily follow a handler if they know there is a positive outcome in the end.
BEHAVIOR continued

*Sheep Behavior as it relates to Handling & Movement:*

- Sheep naturally move into larger areas - they do not like to be tightly enclosed
- Sheep move away from handlers and dogs
- Sheep move toward other sheep
- Sheep prefer to move over flat areas rather than incline, and up an incline rather than down it
- Sheep prefer to move toward light as opposed to dark or uneven lighting
- Sheep will move more efficiently toward what they feel is an opening as opposed to a dead end
- Sheep will move faster through long, narrow chutes than through a square pen
- Sheep move better through chutes (race) if they cannot see the handler/s
- Sheep will balk and/or stop forward momentum when they see other sheep moving in other directions
- Sheep are motivated to move when other sheep move (usually away)
- Sheep move better through facilities if the same paths and flow directions are used every time
- Sheep react negatively (like all livestock) to loud noises
- Young sheep and lambs move through facilities more efficiently when first moved with mature, experienced and well-trained sheep
- Sheep have very good long-term memory especially with negative experiences
- Young lambs who become separated from their dams will feel compelled to return to the location where they were first separated.
BEHAVIOR  continued

*Goat Behavior as it relates to Handling & Movement:*

- Goats naturally move into larger areas - they do not like to be tightly enclosed
- Goats move away from handlers and dogs and scatter
- Goats prefer to move up an incline rather than down it
- Goats will move readily into the wind rather than downwind
- Goats prefer to move toward light as opposed to dark or uneven lighting
- Goats will move more efficiently toward what they feel is an opening as opposed to a dead end
- Goats dislike and will resist proceeding through narrow openings
- Goats move better through chutes (race) if they cannot see the handler/s
- Goats are motivated to move when others do (usually to follow unless startled)
- Goats move better through facilities if the same paths and flow directions are used every time
- Goats react negatively (like all livestock) to loud noises and sudden movements
- Startled or upset goats often lie down in avoidance of handling or being driven
- Young goats and kids move through facilities more efficiently when first moved with mature, experienced and well-trained goats
- Goats have very good long-term memory especially with negative experiences
- Young kids who become separated from their dams will feel compelled to return to the location where they were first separated.
BEHAVIOR continued

The following are the senses that sheep and goats rely on in order to respond to their environment and that impacts their behavior. Handlers should use these senses to their advantage in order to obtain positive handling results:

**Senses:** Originally prey animals, sheep and goats rely on *sight and smell* to detect predators and usually respond with fleeing. “Fight or Flight” is a deeply ingrained instinctual response when they fear something strange or new that they don’t understand. How they perceive their environment governs their response to it.

Sheep and goats have wide-angle *vision* (the rectangular shape of the pupil provides a wide-angle lens) and unlimited peripheral vision of 320°, have relatively poor depth perception, limited vertical vision (they may not be able to easily see objects above them such as predators in a tree or their lambs held too high in front of them) and can distinguish between most colors. Although they do have color vision, it is unlikely that the color acuity is equal to other species, such as humans.

Sheep and goats have excellent *hearing*. It has been documented by a researcher that, in response to sudden loud noises, an increased release of stress-related hormones occurs. Elevated stress hormones cause the animals to become nervous and difficult to handle, therefore loud and shrill noises should be avoided when handling sheep and goats.

The Ovine *auditory* system can process sound into a directional signal because sound arrives at each ear at slightly different times – with a small difference in amplitude. Refinement of this is accomplished by movement of the ears, head and body. This skill is extremely important in keeping the sheep alive.

The olfactory sense in sheep and goats is used completely in their interaction with their environment and is used in many different ways. They use their sense of smell to identify other sheep/goats (especially their lambs/kids), to detect estrus (rams/bucks) and a ram/buck’s presence in the flock/herd (ewes/does) due to the release of androgen-derived pheromones by the males.

Water location and differences between pastures and feeds are detected by sense of smell as well as areas contaminated by manure (sheep & goats prefer to avoid grazing where others have defecated). This behavioral response can have a significant affect in grazing patterns. Sheep and goats will select fresh feed over spoiled, clean over moldy and may eat feeds that humans find objectionable (silage).
BEHAVIOR continued

The sense of **taste** doesn’t appear to be as important as smell to sheep. It can be difficult to differentiate which behavioral response is due to taste or smell. Taste may play a role in differentiating feedstuffs and they will select certain types of foods over others. When grazing on pastures with other species present, sheep will select and consume different types of forage than goats or cattle.

Goats are classified between course-feed eaters and tender-feed-selecting animals and they can adapt to the available food supply. While goats prefer the leaves of bushes, trees and weed plants to grass, they like to eat a mixture and don’t reject grass altogether – they can be accustomed to all-grass pastures. The Queen chooses what the rest of the herd will eat and can be very dramatic in her dislikes of certain plants.

Experiments have been conducted to determine if sheep have “nutritional wisdom” because they appear to attempt to eat feeds that provide them with the nutrition that they require. Most often, sheep do not balance their ration when offered a variety of feeds, but rather, they consume more food than necessary to provide essential nutrients. For instance, when offered salt, they may consume many times the amount needed to meet requirements - luckily there is no evidence that over-consuming salt will cause health problems as long as there is plenty of water available.

The sense of touch is important in animal interaction: lambs and kids seek bodily contact with their dams and in turn, dams nuzzle their lambs/kids and in response to their young’s initial nursing contact (among other physiological occurrences), milk letdown takes place. Even though most of the sheep/goat’s body is covered in wool or hair, the skin underneath is sensitive. The nose, mouth, lips, ears and foot pads easily feel tactile stimulation.

**Types of Behaviors:** Learned Behaviors: behaviors that are learned by experience in their environment. This is derived from memory and experiences such as looking for hay upon hearing a tractor or coming to the sound of a human voice after having been rewarded with food when called.

Instinctive (Innate) Behaviors: behaviors that are “hard-wired” where an animal responds to stimuli without conscious thought or decision. Examples are breeding and maternal instincts and a lamb/kid’s initial nursing behavior.
**BEHAVIOR continued**

Sheep and goats have a natural tendency to follow and this becomes evident when a herd is threatened or the leader is taking them to food. Moving sheep in small groups or pairs is favorable and less stressful than trying to move only one animal at a time.

**Flock Interactions:** As in human society, sheep and goats form strong family, social and racial groups that normally resist integration. This flocking instinct is the key to many behavior characteristics and is highly developed in some breeds and less in others. When confining small groups of sheep or goats for an extended period of time, they tend to form strong social attachments and when put in with a larger group, they remain in that group within the larger flock for an extended period of time - twins will stay close to each other throughout their lives.

When introducing new animals into the flock/herd, there may or may not be displayed aggression. Normally, if a new sheep or goat displays submissiveness or avoidance when introduced, other animals leave it alone. If, however, a new sheep or goat is aggressive toward others, they will fight until the new animal finds its place of hierarchy in the flock/herd.

Rams/bucks are often housed together both in pastures and pens. Introducing rams & bucks is a much different process and, due to their unpredictable and aggressive nature, should be handled with great caution and should only be done by trained staff.

A dominance hierarchy will develop when using two breeding rams or bucks in one flock and in some instances, this can cause serious management challenges. If the dominant male is genetically inferior or sub-fertile, a decrease in lambing/kidding percentage and/or inferior lambs/kids can result. Larger rams & bucks usually dominate over smaller rams/bucks and mature rams/bucks over yearlings, however, sometimes smaller males are more aggressive and breed more ewes/does. When turning out more than one ram/buck with the ewe/doe flock for breeding, they usually engage in fighting behavior. This may result in exhaustion and/or injury – especially if they are evenly matched and fight longer. Turning out three rams/bucks instead of two might result in fewer problems. Due to the small number of animals at Shone Farm we are more likely to have one breeding male at a time or to separate two males with their own group of females.
**Vocalization:** Vocalization may be triggered by frustration, pain, stress, separated dam/lamb/kid, realization of food being brought to them, or to warn the flock/herd of an intruder.

**Daily Behavior Pattern:** Sheep and goats adhere to daily cycles of resting, grazing and ruminating that may depend on daylight/darkness cycles, diet needs, age, environment, temperature and anything else that may affect them on a daily basis. Most grazing and browsing occurs just after dawn and just before dusk and exploration of their environment occurs throughout the day. Exploration, using their senses in conjunction with locomotion skills, may be triggered by instinctual responses to certain stimuli depending on age, weight, sex and nutritional or physical needs.
STRESS

Stress occurs in sheep and goats when they are required to react to stimuli such as fear, pain, fever, environment or management. The well-being of sheep and goats results in higher reproductive efficiency and growth, therefore, identifying and minimizing stressful situations increases livestock production and economic benefits for the producer. Good observations are key in noticing and identifying stress in sheep & goats. Short-term stress can increase heart rate, respiration, some hormones and blood pressure and can cause an animal to go off feed. Long-term stress may induce changes in immunological response or hormonal secretions which can result in, among other things, less tolerance to parasites and increased susceptibility to disease. Although some management practices (vaccinating, tail docking, castrating, ear tagging and change of environment) may create short-term stress, the management team must consider the long-term overall benefits these create. The goal at Shone Farm is to minimize animal stress and injury and to assure safe and efficient interaction between sheep and goats and handlers.

Handlers should be aware that all management practices and handling of sheep & goats is stressful, including gathering, moving to new pastures, weaning, separating flock/herd mates and sorting, chutes, head gates and other facility aids. These practices, however, alleviate some long-term stress by creating a safer environment, reducing the possibility of illness, injury and nutritional deficiencies.

**Four categories of stress are:** Behavioral Stress, Physical Stress, Disease Stress, Pain and Thermal (heat) Stress. The stress in one category may create additional stress in another category or even create complications in another category. *(Please refer to the glossary for detailed information under STRESS.)*

**Social Bond Disruption and Stress:** An extreme example of the disruption of close social relationships is weaning. A stasis of growth appears when lambs & kids are early-weaned. Even when separation or social disruption occurs later in life, it can be psychologically disturbing and can have a negative effect on performance for a period of time. If it occurs at breeding time, ovulation and fertility can be adversely affected. They can also be stressed by inexperienced and abusive handlers.
**Fear:** Behavior responses to fear can include, but are not limited to: running, flocking (sheep), scattering and facing the threat (goats) and seeking out protection from guardian animals by standing near them. Physiological responses can include, but are not limited to, increased heart rate and hormonal changes.

There is a variety of stimuli that can elicit fear in sheep & goats: a new experience, events that occur suddenly or of high intensity, any object (live or otherwise) that they perceive as a threat. For example: Sudden movements or shouting by a handler, slamming gates, shadows, perceived predators.

Sheep & goats have long-term memory and may associate bad experiences with certain people. They may associate a slamming gate or any particular event with past abusive or unpleasant handling - which can make them difficult to handle.

**Pain:** Receptors located in the skin, muscles, viscera and joints transmit information to the central nervous system when stimulated. An animal perceives pain when this occurs. The animal responds to pain in a similar manner to other stresses through behavioral and physiological changes. Pain symptoms are often more acute and can have a more sudden onset, depending on the situation. Sheep are very stoic and will hide their pain in order to protect themselves from predators by not appearing weak or vulnerable. Goats will cry out in pain.
MANAGEMENT PRACTICES (Handling)

**Handling:** Sheep & goats at Shone Farm are to be handled quietly, calmly and humanely in order to prevent stress and for handlers to gain desired results.

It is best for a handler to remember sheep & goats are “flight animals” and to work with the “flight zone” (personal space), not against it. Because penetrating the flight zone too deeply and quickly can cause an animal to become unpredictable and dangerous, it is best to work outside the flight zone. Examples of minimal pressure include but are not limited to: verbal (“up, sheep!”), a whistle, light hand clapping and physical prodding by hand. Examples of maximum pressure include but are not limited to: Slapping the sides of the fence or chute with an open hand, stepping toward the animal aggressively while using a forceful voice and/or hand clapping. Handlers at Shone Farm shall always start with minimal pressure and escalate up the scale of pressure, if needed, to obtain desired results. Optimally, the sheep & goats will respond calmly with minimum pressure when needed.

Handlers shall position themselves behind sheep and goats so that they can be seen by the animals.

Handlers should imagine a bubble around an individual animal and around themselves. When these “bubbles” run into each other, sheep & goats will move (goats may scatter or drop to the ground). If a handler “bumps” from behind the shoulder of a sheep or goat, the animal will move forward. Conversely, if a handler “bumps” at, or in front of the shoulder, the animal will stop and/or move its shoulders away from the handler. The more aggressive a handler’s “bubble” bumps an animal’s “bubble”, the more reactive the animal, usually. This is a basic concept that handlers shall always keep in mind when moving sheep & goats.

**Lambs/kids & Yearlings:** It is easiest to obtain desired results in grown or nearly grown sheep & goats, if they were trained as lambs & kids. Young and/or new animals that are trying to acclimate to their environment are very sensitive and reactive. Therefore, in dealing with these animals, the handler needs to maintain a quiet, yet authoritative stance. Minimal pressure needs to be applied and the handler must continue until they receive the desired result. If an animal learns from a young age that the handler will back down, it will remain non-compliant.

Sheep & goats should never be taught to turn around on the handler – at ANY age. This should be highly discouraged. If a lamb or kid turns back on a handler, the handler
MUST make the animal believe this is not where it wants to be by INSISTING the lamb or kid turn back around. This shall be done by first starting with minimal pressure (“1”) and escalating quickly to (“10”) – until the desired result is obtained. The safety of all handlers is paramount.

Yearlings should be handled in the same manner as lambs & kids, however, handlers should remember that Yearlings are much more unpredictable and lambs don’t flock (without adults) as well. Yearlings will spread out more, move faster and turn back on their handlers more often. It is common to have to start on the pressure scale at higher than “1” and quickly move up the scale to obtain desired results.

**Adult Sheep & Goats:** Adults (especially new animals) can be just as reactive as yearlings and more cautious until they know they are safe.

**Pasture Herding:** When moving sheep & goats out of the pasture, it is easiest to teach them to come when called and to follow the handler. Calling them the same way each time and using grain in a bucket as an incentive with the leader/s is an effective and quick way of teaching them to follow. Sheep & goats feel much more secure following the same safe paths and routines. Once they know what you want and where they are going, they will move right along and often pass the handler on their way to their destination. The handler should follow along quietly, with purpose and without stopping forward momentum.

**Sheep & Goat Unit Alley:** When the flock/herd is brought up to the barn to be locked in the Sheep & Goat Unit, the handlers should close gates behind them as quickly as possible so that if/when an animal turns back, they don’t rush past the handler and back out. When sheep & goats are herded into the working chutes and holding pen, the same principal should apply with the gates.

**Holding Pen:** Handlers should try to move all sheep &/or goats into the holding pen staged just outside the working chutes. If they are separated, it often inspires them to
MANAGEMENT PRACTICES (Handling) continued

jump out. Enough room as possible should be available for the sheep/goats to mill and as sheep/goats move into the working chutes, the area can be closed down and made into a smaller pen.

Handlers should, at no time, beat the sheep/goats on their heads and yell while they are in the Holding Pen in an attempt to motivate them to move. This causes confusion and stress and lack of compliance on the animal’s part as well as possible injury to handlers and animals. Properly taking hold of an animal and guiding it into the chute helps to get other sheep/goats to follow.

Sheep & Goat Unit Chutes: Maintaining forward momentum of sheep/goats from the Holding Pen and into the Working Chutes is helpful so that the animals line up in and fill the chute completely making it possible to close the guillotine behind them.

When sheep/goats see the animal in front of them move forward and out or through the chute doors, they will move forward to follow. Handlers should, at no time, beat the sheep/goats on their heads or yell while they are in the Working Chute in an attempt to motivate them to move. This causes confusion and stress and lack of compliance on the animal’s part. If an animal stops and refuses to move forward, the handler shall prod the sheep or goat forward by pushing on its dock. If this doesn’t obtain the desired results, the handler shall place their fingers under the tail stub (sheep), lift and push forward until desired results are obtained. There are times when this does not work and a handler may need to enter the chute with the sheep or goat and push the animal forward.

If sheep & goats are habitually resistive to moving forward in the chutes, the short electric prod should be used to encourage them forward and to teach them how to proceed through the chutes.

Handlers should be aware of their own body positioning by making sure they aren’t impeding the sheep/goat’s forward movement by standing in front of them or by hanging over the chutes. Handlers should keep in mind the flight zone and remember to stay outside of it.

Turn Table: After entering the Main Working Chute, the animals enter the Turn Table. One adult sheep/goat fits in the Turn Table at one time, however, 2 to 3 lambs/kids are able to fit. At times, more lambs/kids in the Turn Table at one time makes it easier to perform tasks.
MANAGEMENT PRACTICES (Handling) continued

When leaning over the Turn Table in order to perform a task on an animal, the handler should put one hand on top of the animal’s shoulders and push down so that if the animal leaps into the air, the handler can prevent it from injuring them.

As the handler finishes with each animal in the Turn Table, the front chute gate should be opened to let the animal out and the hind gate shall be opened to let the next animal in. Once the sheep/goat exits the Turn Table, the front chute gate should be closed to enclose the next sheep or goat entering.

**Sheep Unit Pens:** The Sheep & Goat Unit Pens function as, among other things, eating, living, lambing/kidding and holding areas.

When a sheep or goat is released from the Turn Table, they are directed either into the Creep pen to remain there or into the Creep pen and then out into the main sheep/goat pens.

When used as eating areas, hay and grain shall be placed in the available feeders or on the ground, along the fence in clean areas, if needed.

When used as living areas, the large main pens shall be raked out and cleaned by hand and periodically cleaned out with the tractor.

On occasion, it is necessary to separate sheep & goats while they are within the main pens, however, whenever possible, animals should be separated and worked on through the chutes. This alleviates stress and injury to animals and handlers.

**Remember: when handling sheep & goats**

- Do not move a sheep or goat too far away from the rest of the flock – an isolated sheep will become easily stressed and unmanageable.
- Always work calmly and quietly around sheep and goats – this will make it much easier to handle them.
- Consistency and proper use of facilities is key – animals will remember good and bad experiences as well as consistent human behavior.
- Consistency with feeding and or calling will work when moving sheep and goats. They will usually follow a bucketful of grain as well – as long as they know what it is (don’t assume that they do).
- With a flock / herd, using a chute that the animals can easily walk through in a single file line allows for safe handling to complete objective effectively.
- Always be aware of rams and bucks – they may butt and can cause great bodily injury – never turn your back.
~ STANDARD OPERATING PROCEDURE ~

**Catching**

- Confine the targeted animal with several others in a small area
  - Approach the selected sheep or goat slowly and calmly
  - Make sure that the pen does not have any sharp or jagged areas where the animal could get hurt
  - Move the sheep or goat into a corner while extending and arm sideways to form a visual barrier
  - Note: The sheep or goat may try to run along either wall or jump over your arm/s
- Catch the sheep or goat by putting a hand under the lower jaw (be careful not to apply too much pressure, these are prey animals) and gently pull up the head (if the sheep cannot see what is in front of them, they will not move forward)
  - Be careful not to hold the sheep or goat by the throat
  - With the free hand, place it around the tail/rump (this will assist with keeping the sheep from backing up)
- To move the animal forward, apply a little pressure with the hand on the dock or under the tail to push forward. Use the other hand to guide the direction that you want to move the sheep or goat.
~ STANDARD OPERATING PROCEDURE ~

Moving Sheep & Goats:
Leading ~
- **Call**
  - “Hey, sheep! (or goats)"
- **Incentive**
  - Small bucket of grain
  - Shake bucket
  - Feed the lead sheep/goats small amounts of grain along the way
- **Lead**
  - Watch to see that all animals are moving and coming toward the handler
  - Make sure that sheep flock together before opening the gate to let them through
  - Open gate and step aside – once taught, sheep & goats will know the route

Herding ~
- **Scale of aggression:**
  - 1 = minimal “pressure”
  - 10 = maximum “pressure”
- **Examples of minimal pressure include, but are not limited to:**
  - Verbal: “up, sheep!” (or goats)
  - whistle
  - light hand clapping
- **Examples of maximum pressure include, but are not limited to:**
  - slapping hand against the chute
  - stepping toward the animal aggressively while using a forceful voice or noise

Handlers at Shone Farm shall always start with minimal pressure and escalate up the scale of pressure, if needed, to obtain desired results.

Optimally, sheep/goats will respond calmly with minimum pressure.

Handlers shall position themselves behind sheep/goats so that they can be seen by the animals.

The handler should follow along quietly, with purpose and without stopping forward momentum.

The handler should release “pressure” when desired results are obtained.
~ STANDARD OPERATING PROCEDURE ~

Handling Sheep & Goats:

- **Setting a Sheep on its rump ~**
  - While next to the sheep, slip left thumb (careful not to get bitten) into sheep’s mouth behind the incisors - place other hand on sheep’s right hip

  ![Image of sheep being set on its rump]

- Bend the sheep’s head back over its right shoulder while in one motion, push with other hand on sheep’s right hip while swinging clockwise into you until the sheep lands on its rump

  ![Image of sheep being set on its rump]

- Hold the sheep so it is sitting up and leaning back toward you

  ![Image of sheep being held up]
~ STANDARD OPERATING PROCEDURE ~

Moving Sheep & Goats:

Leading ~

Call
- “Hey, sheep! (or goats)”

Incentive
- Small bucket of grain
- Shake bucket
- Feed the lead sheep/goats small amounts of grain along the way

Lead
- Watch to see that all animals are moving and coming toward the handler
- Make sure that sheep flock together before opening gates to let them through
- Open gate and step aside – once taught, sheep & goats will know the route

Herding ~

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Handlers at Shone Farm shall always start with minimal pressure and escalate up the scale of pressure, if needed, to obtain desired results

Optimally, sheep/goats will respond calmly with minimum pressure – goats prefer to follow

Handlers shall position themselves behind sheep/goats so that they can be seen by the animals

The handler should walk along quietly, with purpose and without stopping forward momentum

The handler should release “pressure” when desired results are obtained
IDENTIFICATION

Identification of Sheep & Goats is necessary and important for many reasons. Theft of livestock is still occurring in California and unmarked animals are at a greater risk of being stolen. **All Shone Farm sheep & goats** are tagged with Scrapie Tags as lambs/kids before any are shipped to auction, sold to private parties or turned out with the flock as replacements. The USDA-APHIS regulates the use of “Scrapie Tags”.

Identification also aids managers in record keeping: Selection and Genetics can be improved by identifying sires and dams and their progeny; Health Records and tracking favorable traits and/or unfavorable traits or issues depends on identification of individual animals as well.

Sick and Injured animals need to be easily identified in order to separate them from the flock, if necessary, to be treated.

**Methods used to identify sheep & goats at Shone Farm** include the use of Flock Ear Tags and Scrapie Tags. Different colored Flock Ear Tags allow staff to identify each individual animal and its age. Lost Flock Ear Tags are replaced with the identical color and, if possible, the same number of the lost tag, however, if using the same number is not possible, a new number is assigned (i.e. 15 is replaced with 15 or the next available number – an animal’s Ear Tag color stays with it as long as it resides at Shone Farm).

Scrapie Tags are assigned to each animal and if lost, are replaced with another Scrapie Tag with a new number. All sheep & goats must be issued a Scrapie Tag before transporting or selling them.

**Ear Tags used at Shone Farm** are sized appropriately for sheep & goats, pierce the ear and are pre-numbered or the type where identification can be written on with a permanent pen. Lambs & Kids are tagged with Flock Tags on the left ear at 3 days older or later if not thrifty. Lambs & Kids are tagged with Scrapie Tags on the right ear sometime before sale or as replacements are chosen.

Ear Tags shall be applied so that the identification faces forward (when the handler is facing the animal, the identification can be read). The handler shall take care to avoid piercing through large blood vessels by piercing between the blood vessels [see pictures]. The handler shall apply the tag far enough up the ear - toward the animal’s head - so as not to increase likelihood of injury to the ear or increase the risk of the lamb/kid catching it in a fence due to the ear bending or drooping forward.

Each crop of lambs/kids each year starts with the number 1 and each lamb thereafter is numbered in succession. If a lamb or kid dies before eartagging, it is not assigned a
number. Sheep & Goats are identified by the color and number of their Flock Ear Tags (i.e. Blue 6).

Every new lambing kidding season, a different color Flock Ear Tag is used. This allows all handlers to quickly identify the age of each animal.
Ear Tagging

Ear Tagger

Scrapie Tags

Flock Tags

Sheep

Goats
Ear Tagging (Sheep)

1. Flock Tag
   a. Tag @ 3 days old unless unthrifty. Always tag asap.
   b. Flock tag is a different color each year to denote age of replacements.
   c. Tag left ear - between veins & into ear far enough so ear does not bend & flop (this can cause injury & permanent damage).
   d. Tag with number facing forward on front of ear – not on the back.
   e. Refer to these ewes as “Blue 6” & “Blue 27”.

2. Scrapie Tag
   a. Tag when lamb’s destination has been determined.
   b. Scrapie tags may be different colors.
      - Small triangular shaped
   c. Tag right ear – between veins & positioned the same as flock tag.

![Image of sheep with ear tags showing proper and improper placement.]

- Replacement Ewe Scrapie Tag.
- Proper placement: blue Flock Tag & white Scrapie Tag.
Ear Tagging (Goats)

1. Flock Tag
   a. Tag @ 3 days old unless unthrifty. Always tag asap.
   b. Flock tag is a different color each year to denote age of replacements.
   c. Tag left ear with double-sided numbered tags - between veins & up ear away from the ear tip so that it doesn’t get caught on something and tear out.
   d. Refer to these kids by tag color and number.

2. Scrapie Tag
   a. Tag when lamb’s destination has been determined.
   b. Scrapie tags may be different colors.
   c. Tag right ear – between veins & positioned the same as flock tag.
NUTRITION

Sheep & Goats are ruminants and have four-compartment stomachs: Rumen, Reticulum, Omasum and Abomasum. Absorbable nutrients are available to the animal after foodstuffs enter the rumen and are broken down via microbial fermentation.

Nutritional requirements in sheep & goats depend largely on what stage the animal is in (growth, breeding, pregnant, lactation) and other factors (breed, sex, age, weight, genetics and environmental conditions). Dietary components necessary for sheep & goats to stay healthy are: water, energy, nitrogen, vitamins, minerals and fiber.

Minerals: Mineral requirements for sheep & goats include: Calcium, Cobalt, Copper, Fluoride, Iodine, Iron, Magnesium, Manganese, Molybdenum, Phosphorus, Potassium, Salt, Selenium, Sulfur and Zinc. Sheep & goats that graze or are fed hay that have a deficiency in required minerals may be supplemented. Goat supplement blocks should never be fed to sheep because they contain high levels of copper.

Vitamins: Sheep & Goats have the ability to synthesize most required vitamins (B and K are synthesized in the rumen and Vitamin D is synthesized when the animals are exposed to sunlight and can also be found in some sun-cured forages. Vitamins A and E are the only vitamins that may need to be supplemented – Vitamin A precursors and Vitamin E can be found in high-quality forages.

Lamb/Kid Nutrition: Orphaned lambs & kids or those not receiving enough milk from its dam (multiples or lambs/kids with dams that have compromised udders) may need to be supplemented because, due to an underdeveloped rumen, it cannot utilize roughages or other dry feeds that mature ruminants can eat. Commercially available milk replacers can be fed to an orphaned lamb or kid to meet its nutritional requirements after the initial intake of colostrum. Newborn lambs & kids must receive proper amounts of colostrum so care must be taken to assure this. If a lamb or kid is weak and unable to nurse, it must be tube-fed until able to nurse from a bottle (if it’s orphaned) or from its mother. Grafting lambs or kids onto an adoptive mother is preferred over bottle feeding with a milk replacer.
~ STANDARD OPERATING PROCEDURE ~

Feeding
Sheep & Goat Unit

- Pens
- Insufficient Pastures (Hay Supplementation)
  - Follow feeding directions laid out by Livestock Tech
  - Decrease number of flakes if there is hay left over by the next feeding
  - Increase if the animal is thin, agitated and/or crying all day
  - Inform Livestock Tech of any observations and changes

- Quality Pastures
  - Breeding Sheep & Goats
    - Rotate Sheep & Goats on pastures of highest nutritional quality
    - Rotate Sheep & Goats according to pasture health
  - Ewes/Does (Gestational Maintenance)
    - After breeding, start Ewes/Does on pastures with good nutritional quality but not necessarily the best quality
    - Rotate Ewes/Does according to Body Condition Scores and pasture health
    - Move pregnant Ewes/Does into Porter Barn/Lot Pasture 4 weeks before parturition
  - Ewe/Doe – Lamb/Kid (Lactation Maintenance)
    - After lambing/kidding, Dams and their young should remain in the Porter Barn/Lot Pasture until weaning
    - Depending on Lot Pasture condition, Sheep & Goats may have to be supplemented with hay and/or grain under the direction of the Livestock Technician
  - Yearlings (Growth Maintenance)
    - Yearlings should be allowed access to the Coyote pasture – accompanied by a few mature ewes/goats and a guard animal
    - Bring Yearlings up to Porter Barn to spend the night to avoid any predator loss and supplement with hay & grain under the direction of the Livestock Technician
  - Lamb/Kid (Weaned)
    - Young lambs will not be out on pastures due to predator risk
    - Follow feeding directions laid out by Livestock Tech
    - Hay shall be spread out so that every animal has access to food
    - Adjust feed as needed based on body condition and animal behavior
MANAGEMENT PRACTICES (Health)

Health and Well-being of the flock: Sheep & Goats shall be observed for any signs of poor health or injury on a regular basis. Regardless of where Sheep & Goats are being held (pastures, pens), they should be checked on according to what stage of life they are in (parturition, lactating, weaning, breeding, etc). Unscheduled checks are also encouraged. Examples of unscheduled checks are feeding time, passing through the Porter Barn, while checking fences, while checking pastures, etc. Any time a staff member is in the vicinity of the Sheep or Goats, the staff member should take the initiative to check on the animals' well-being.

Animals should be alert, calm, eating, drinking, be able to rise, lay down and to move about. See “Animal Health Protocol” for a more detailed explanation of what to look for in a sick or injured animal.

If a sick or injured animal is observed, either the Livestock Technician or Farm Manager should be contacted immediately. See “Management Practices (Illness or Injury)” for a detailed description of how to proceed with a sick or injured animal.

Steps To Healthy Sheep and Goat Management:

- Provide a healthy environment to the flock/herd
  - Provide adequate space for the animals
  - Allow airflow inside of the barn to prevent upper respiratory infections and pneumonia.
- Provide shade and shelter
  - Hot weather
  - Wind
  - Rain
- Always practice good sanitation
  - Provide clean bedding in barn and clean often
  - Provide Fresh/clean water available at all times and offer clean feed
  - Use proper sanitation techniques on lamb bottles, aseptic techniques with needles, etc
- Manure Removal
  - Manure removal keeps well maintained pens
  - Manure removal keeps sheep and goats healthier by reducing flies and parasites
  - Manure removal provides a good working environment
- Maintain good fences and shelter
  - Sheep and goats are prey animals, therefore, predators should be fenced out
  - Coyote-proof fencing and guardian animals such as donkeys or llamas work well
  - Well maintained fences will decrease injuries (lacerations, getting stuck, etc.)
MANAGEMENT PRACTICES (Health) continued

Steps To Healthy Sheep and Goat Management - continued:

- Provide appropriate nutrition for all stages life and establish regular feeding times
  - At certain stages of life, the animal may need additional nutritional supplementation
  - Animals with higher quality nutrition will have a stronger immune system, resulting in a decreased number of ill animals within the flock/ herd
  - Feed twice per day (once in the morning and once in the evening)
  - Feed change: Add new feed and reduce the old feed over a period of several days

- Feed well balanced rations
  - Base the sheep’s diet on body condition, nutritional requirements and feed analysis
  - Rule of thumb: animals receiving nutritional requirements through quality hay or pasture, do not need additional supplement such as grain

- Providing fresh water at all times
  - Water is a necessary part of an animal’s good health
  - It is very important to keep water troughs well maintained and clean

- Always be observant with Sheep and Goats
  - It is important to visually observe the sheep and goats daily
  - Pay close attention to normal behavior, body stance, and pelleted manure

- Maintain a closed flock whenever possible
  - Breed healthy and thrifty animals
  - Cull unthrifty animals to develop a healthy flock
  - Refrain from exposing new animals to prevent the spread of disease within the flock

- Immediately isolate any animals showing clinical signs of illness or injury
  - Upon isolating an ill or injured sheep or goat, make an assessment by palpating, visually inspecting and checking vitals
  - After assessment, determination should be made whether the animal can be treated by staff or needs the veterinarian
  - Medicate and treat appropriately

- Treat all new sheep and goats
  - Process new animals with an appropriate dewormer, trim hooves and vaccinate, if needed

- Protect the flock/herd and facility with proper quarantine protocols
  - Isolate sheep and goats for 14 days and observe for any clinical signs of illness

- Vaccination
  - With advisement from the veterinarian, a vaccine protocol has been created for the best outcome of the operation and the animal’s overall optimum health to prevent illness.
  - Sheep and Goats are vaccinated by classes and by staff
MANAGEMENT PRACTICES (*Health*) continued

- **Steps To Healthy Sheep and Goat Management:**
  
  - Dewormer
    - With advisement from the veterinarian, a deworming strategy has been determined to maintain the sheep and goats in good health
    - Sheep and Goats are dewormed by classes and by staff
  
  - Practicing good hoof care
    - Trim as needed
    - Hoof trimming is coordinated with classes and performed by staff
  
  - Shone Farm works closely with the veterinarian
    - To prevent illness and to treat ill and/or injured animals
    - To obtain advice on care to give to sick or injured animals
  
  - Postmortem examination
    - When an animal dies suddenly or under any suspicious circumstances, it is appropriate to ask your veterinarian to perform a postmortem necropsy to find the cause of death and prevent other sheep and goats from the same cause of death
    - The Farm Manager makes the determination of whether or not a necropsy is necessary
~ STANDARD OPERATING PROCEDURE ~

Animal Health

Signs of Illness / Injury:

- **Observe the animal for respiratory problems**
  - Coughing
  - Labored breathing
  - Nasal discharge
  - Lesions or inflammation of the muzzle or nostrils

- **Observe Lactating animals for obvious signs of mastitis**
  - Inflammation of the udder and/or teats
  - Red or Blue in color

- **Check for injuries**
  - Lesions and/or contusions on the skin

- **Check for lameness**
  - Limping / Stiffness in legs and feet
  - Foot rot
  - Unwillingness to stand
  - Reluctant to move

- **Check the eyes**
  - Discharge / Conjunctivitis
  - Inflammation around the eyes
  - Cloudiness or whiteness

- **Look for signs of edema**
  - Legs
  - Lower jaw / Neck region

- **Look for any signs of unthrifty appearance**
  - Diarrhea and / or blood
  - Dehydration
  - Depressed / Weak
  - Rough hair

- **Look for animals with lowered head and/or drooping ears**
**Body Condition Score:**

- Sheep and Goats should be in optimum condition for production (i.e. breeding, late pregnancy, and lactation)
- The purpose of the body condition score is to assess the fat and muscle around the vertebrae in the loin region of the sheep
- The score ranges from 1-5, with 1 being emaciated and 5 being obese
MANAGEMENT PRACTICES (Health), continued

Description of Body Condition Score (BCS):

1. **Emaciated (1.0)**
   - The spine is sharp and prominent. It is possible to feel upon palpation between each transverse process.

2. **Thin (2.0)**
   - The spine is sharp and prominent. The muscles are full, but have little fat cover. With little pressure, you can pass fingers under both ends of the transverse processes.

3. **Average (3.0)**
   - The spine is smooth and rounded. The muscles are full with moderate fat cover. You need to press hard to find the ends of the transverse processes.

4. **Fat (4.0)**
   - You need to apply pressure to detect the spine as a hard line. The muscles are full and the fat cover is thick. The transverse processes cannot be palpated.

5. **Obese (5.0)**
   - The spine cannot be detected. There is a fat "dimple" over the spine. The muscles are very full and dense with fat cover. The transverse processes cannot be palpated.
**Animal Health**

*B idols Condition Score (BCS)*:

Palpate for accurate BCS (Body Condition Score)

1. **Spine:**
   - Feel for the sheep’s lumbar spine (in the loin area).
2. **Transverse Process:**
   - Feel for the hip on the transverse process on either side.
3. **Muscle:**
   - Feel for the fullness of the fat cover and muscle.
**Health**

Anatomy and Weight:

- **Basic Sheep & Goat Anatomy:**

![Diagram of sheep and goat anatomy with labeled parts like rump, loin, rack, cockpit, area of the head, face, nose, mouth, shoulder, breast, elbow, foreshank, knee, fetlock, pastern, coffin, heel, dew claw, toe, pastern, cannon, stomach, ribs, barrel, point of shoulders, throat, bristle, chest floor, elbow, testicle, scrotum, shoulder blade, withers, neck, poll, bridge of the nose, nostrils, muzzle, head, pin, bone, thigh, stifle, joint, hock, shank.]

- **Estimating Weight:**
  - Measure the circumference (C)
    - With a measuring tape, measure around the sheep's body just behind the front legs.
  - Measure Length (L)
    - Next, measure the length of the sheep's body from the point of shoulder to the rump.
  - Calculate the weight:
    - Weight = \( \frac{C \times C \times L}{300} \)
~ STANDARD OPERATING PROCEDURE ~

Animal Health

Vital Signs:

Sheep -

a. **Temperature** ~ 100.9 – 103° (degrees fahrenheit)
   - Mild Fever ~ 103.1 – 103.5°
   - Moderate Fever ~ 103.6 – 103.9°
   - High Fever ~ 104 - 105°
   - Very High Fever ~ 106° ±

b. **Heart Rate** ~ 70 – 80 beats per minute

c. **Respiration** ~ 12 – 20 breaths per minute

Goats –

a. **Temperature** ~ 101.5 – 104° (degrees fahrenheit)
   - Mild Fever ~ 104.1 – 104.5°
   - Moderate Fever ~ 104.6 – 104.9°
   - High Fever ~ 105 – 105.5°
   - Very High Fever ~ 106° ±

b. **Heart Rate** ~ 70 – 80 beats per minute

c. **Respiration** ~ 12 – 20 breaths per minute
Animal Health

Taking a Temperature:

1. It is important to monitor the flock / herd closely so that you can identify an ill or injured sheep or goat
2. If the sheep or goat is showing any signs of illness or injury as outlined in Animal Health: Signs of Illness / Injury, the animal's temperature should be taken
3. The sheep or goat’s head should be held so that the animal cannot move
   - Holding one side of the animal against a wall, fence or other stationary object is helpful in securing it further
4. Moisten the thermometer on the end that will be inserted into the anus
5. Either shake the thermometer (if it’s a mercury type) or turn it on
6. Insert the thermometer rectally - slowly
7. If there is a string and clip on the end of the thermometer, clip it to the animal’s wool or hair – otherwise hold onto it.
8. DO NOT let the animal go
9. Optimum time to keep thermometer in place is 2 – 3 minutes or until it beeps
10. Remove the thermometer and read the temperature
Animal Health

Administering a Subcutaneous (SQ, SC) Injection:

- Pinch a “tent” folding loose skin
  - Properly restrain the animal
  - Pinch the skin and pull up
  - Insert the needle under the skin, pull back the plunger (check for blood) and push the plunger all of the way to administer the medication
  - Release skin

Note: if there is blood in the syringe when you pull back on the plunger, withdraw the syringe back and find a different spot to inject medication

Administering a Intramuscular (I/M) Injection:

- Locate the appropriate injection site
  - Properly restrain the animal
  - Thrust the needle quickly into the muscle
  - To make sure that you have not entered a vein, pull the plunger back and look inside of the syringe to make sure that there is not any blood
  - Once the needle is in the muscle, administer the injection with the medication
  - If you have to administer medication that exceeds the proper amount for one site:
    - pull the needle out of the muscle without exiting the skin
    - redirect the needle and push it into another location in the muscle

Note: if there is blood in syringe, pull syringe out and use another site
Preventative Medical Treatment

Vaccinations
Sheep & Goat vaccination programs are an important component of a flock & herd health program. Our Vaccination protocols are designed with specific management systems and production goals in mind. Ewes & does are generally vaccinated (within one month of parturition) for two reasons: 1) to prevent disease in the dam and 2) to pass immunity to the unborn lamb/kid.

Vaccinations in adult breeding sheep & goats are subcutaneous and don’t penetrate muscle, therefore, there is no concern with damaging meat. There are 2 vaccination sites used at Shone Farm: in front of the shoulder where the neck begins and behind the elbow where there is no wool.

1. Adult Sheep & Goats will be vaccinated annually for the following as appropriate:
   a. Clostridium Perfringens types C&D (effective against Enterotoxemia)
   b. Clostridium Tetani – (effective against Tetanus)

2. Lambs & Kids will be vaccinated at Tail Docking / Castration and boosted for the following:
   a. Clostridium Perfringens types C&D (effective against Enterotoxemia)
   b. Clostridium Tetani – (effective against Tetanus)
Preventative Medical Treatment

Vaccinations - continued

Diseases

- **Tetanus**

  Tetanus is caused by a bacterium known as *Clostridium tetani* - a fatal disease in sheep and goats. The bacterium spores can be found in feces, produce a powerful toxin in open wounds and are not affected or destroyed by disinfectants. Most often, tetanus is caused by an infected open wound. Castration and tail-docking increase the risk in sheep and goats for contracting tetanus. *Clostridium tetani* incubation period is between 3 days and 3 weeks. During the incubation period, the bacteria multiply and generate a powerful toxin which affects the nerves around the site of the wound. The toxin travels to the spinal cord and brain and causes uncontrollable muscle spasms. Signs and symptoms of tetanus infection include: inability to eat and drink; muscle stiffness and spasms; uncoordinated walking and movements; panic; bloat. Death occurs about 3-4 days after symptoms appear, although, sheep in a flock can be found dead without having shown any signs of the disease.

  Tetanus can be *prevented* through cleanliness and vaccinations, such as Tetanus Toxoid and Tetanus Anti-Toxin. Prevention is extremely important because, once the animal is already sick, treatment can be very expensive and not very effective.

- **Tetanus Antitoxin:**

  Gives *temporary protection* for about 2 weeks. The lambs/kids should be vaccinated at docking/castration. It is also used to treat animals with tetanus but it is not always successful.

- **Tetanus Toxoid:**

  Helps the body to develop *permanent immunity* against Tetanus. The lambs/kids should be vaccinated at docking/castration so that immunity begins to take place as the Tetanus Antitoxin loses its effectiveness.
MANAGEMENT PRACTICES (Health) continued

Preventative Medical Treatment

Vaccinations - continued

- **Diseases**
  - **CD & T: Clostridium Perfringens Types C and D**
    
    **Enterotoxemia** is caused by two strains of bacteria: *Clostridium perfringens* – types **C and D** normally found in low numbers in the gastrointestinal tract of all sheep and goats. A sudden change in diet – commonly, an increase in the amount of grain or lush grass (feeds rich in starch, sugar and protein) triggers this disease. *Clostridium perfringens* undergoes explosive growth when unusually high levels of these nutrients reach the intestine. The organism releases toxins that can cause damage to the intestine and other organs. This can result in death - particularly in the non-vaccinated animal or newborn lamb/kid whose dam was not vaccinated.

    Affected animals may: become lethargic and go off feed; show signs of stomach pain; have diarrhea (possibly bloody); lose their ability to stand and lay on their side with legs extended and head/neck extended back over their withers (caused by toxins on the brain). Death usually occurs within hours after this last symptom. Animals may be found dead with no previous signs or symptoms because enterotoxemia can progress rapidly. A Vaccination called CD&T (Clostridium perfringens Types C & D and Tetanus) is given to prevent and treat enterotoxemia and Tetanus. Lambs/Kids are protected at birth if the Dam was vaccinated 4-6 weeks prior to lambing/kidding.
~ STANDARD OPERATING PROCEDURE ~

**Animal Health**

*Preventive Medical Treatment*

**Vaccination:**

- **Tools**
  - Standard Syringes (3cc, 6cc, 12cc, 24cc)
  - Needles (18, 20, 22 gauge x 1")

- **Vaccines**
  - CD&T
  - Tetanus Antitoxin

- **Record Sheet**

- **Vaccine Specifics**
  - **CD&T**
    - Dose: 2cc
    - Subcutaneously
  - **Tetanus Antitoxin**
    - Dose: ½ cc
    - Subcutaneously

- **Vaccination Techniques**
  - **Subcutaneous**
    1. Pull up skin (tent skin)
    2. Push needle through skin
    3. Withdraw plunger and watch for blood
    4. If blood is observed, reposition needle under the skin and re-check for blood
    5. If blood is not observed, inject vaccine
Vaccinating

Syringes & Needles (18, 20, 22 x 1”)

Injection Sites
Diseases

- **Caseous lymphadenitis (CL)**

  Although, at this time, **Shone Farm** does not test for or vaccinate against CL, this disease of sheep and goats, and its management is worth mentioning because it is potentially devastating to a flock/herd and is also zoonotic (passed between animals and humans).

Caseous lymphadenitis (CL) is a chronic, contagious disease that is caused by the bacterium *Corynebacterium pseudotuberculosis*. CL is a major concern for producers because of the management and loss that it creates: death; trim of infected carcasses; sales for breeding animals; hide and wool loss; premature culling of animals due to disease. The disease is recognizable by abscess formation near lymph nodes (external form): around the lower jaw, Udder, point of shoulder or actually within internal organs and lymph nodes (internal form). The external form is more common in goats and the internal form is more common in sheep. Once CL establishes itself on a farm, it is sustained by environment contamination in the form of active draining lesions, nasal discharge and/or coughing of an animal infected with the internal form, due to the survivability of the bacteria in harsh environmental conditions and the introduction of the disease with contaminated tools and purchased animals.

CL can occur occasionally in horses, swine, camelids, cattle, wild ruminants, fowl and people. Care should be taken when handling open abscesses because CL is considered zoonotic (a disease that can be passed between animals and humans). Response to CL varies from culling all infected animals to managing infected animals and the flock/herd.

At this point in time, **Shone Farm** chooses to manage the animals and disease. When an abscess is observed, the animal is isolated for treatment and recovery. When the abscess becomes soft enough, it is cut open with a scalpel and thoroughly cleaned out of pus and debris. The abscess contents are not allowed to make contact with the ground, but rather, are caught in some sort of container, sealed up and thrown away. The vacated abscess is flushed several times with a betadine/water mixture for however many days it takes to completely be rid of any pus formation.
Diseases

Caseous Lymphadenitis (CL) - continued

As the abscess capsule is flushed, it is allowed to slowly heal from the inside, out so as not to trap any bacteria within the old capsule. Although, general injection of an antibiotic to the animal is ineffective (because CL resides in an encapsulated abscess), infusing the empty capsule with penicillin has been proven to kill the associated bacteria and speed healing. **Shone Farm** has employed this technique with favorable results. Special care is used when handling animals with an active CL abscess and gloves are used at all times.
 MANAGEMENT PRACTICES *(Health)* continued

**Preventative Medical Treatment**

*De-Worming (Anthelmintics)*: Internal parasites can cause significant production losses in sheep & goats, resulting in substantial economic loss. Often, parasite losses are subclinical and unnoticed but severe infestations can cause disease and even death. Subclinical production losses caused by internal parasites include: reduced milk production; reduced weaning weights; delayed puberty and decreased fertility in replacement ewes & does; reduced pregnancy rates in mature animals; and reduced feed intake, feed efficiency and immune suppression in all classes of sheep & goats.

A parasitic relationship exists when one organism (the parasite) benefits at the expense of another organism (the host). The parasite may cause harm or death to the host, if not properly controlled. Parasites can damage and irritate stomach and intestinal linings, resulting in reduced digestion and absorption of nutrients from the intestine as well as bleeding and protein loss from the gut.

Parasites are normally host-specific, and sheep & goats serve as hosts for a variety of parasites. The major threat to sheep & goat health and performance comes from internal parasitic nematodes (worms), especially those found in the stomach and intestines (gastrointestinal parasites).

Sheep & Goats will be observed by the Livestock Technician for unthriftiness, low weight and any visible parasites in the manure. **Shone Farm Sheep & Goats** will be treated with FDA-approved Anthelmintics on an as-needed basis, in lab classes and under the advice of the livestock veterinarian (a minimum of 2 times per year). At this time, Ivomec, Ivomec Plus and Valbazen are the primary De-Wormers used at Shone Farm due to the incidence of Liver Flukes. Levasole boluses are occasionally used – primarily as a demonstration in classes.
~ STANDARD OPERATING PROCEDURE ~

Animal Health

Preventive Medical Treatment

De-Worming (Injectable)

Tools

- Pistol Grip Syringe
- Standard Syringes (6cc)
- Needles (18 or 22 gauge x 1"

De-Wormer

- Ivomec Plus

Record Sheet

De-Wormer Specifics

- Ivomec Plus
  - Dose: 1ml per 110lbs of body weight
  - Subcutaneously

Injection Technique

- Subcutaneous
  1. Pull up skin (tent skin)
  2. Push needle through skin
  3. Withdraw plunger and watch for blood
  4. If blood is observed, reposition needle under the skin and re-check for blood
  5. If blood is not observed, inject De-Wormer
~ STANDARD OPERATING PROCEDURE ~

Animal Health

Preventive Medical Treatment

De-Worming (Drench)

Tools
- Drench Gun
- Standard Syringes (24cc)

De-Wormer
- Ivomec
- Valbazen

Record Sheet

De-Wormer Specifics
- Ivomec (drench)
  - Dose: 3ml per 24lbs of body weight
- Valbazen
  - Dose: 3ml per 100lbs of body weight (sheep)
  - Dose: 4ml per 100lbs of body weight (goats)

Drench Technique

Oral
1. Withdraw required amount of drench into the gun or syringe
2. Place tip of syringe or drench gun into the side of the mouth
3. Enter through the bars of the mouth and onto the back of the tongue
4. Make sure syringe or drench gun is not between the animal’s molars
5. Hold animal’s head as level as possible
6. Depress plunger slowly but consistently and allow animal to swallow
~ STANDARD OPERATING PROCEDURE ~

Animal Health

Preventive Medical Treatment

De-Worming (Bolus)

Tools

- Bolus Gun

De-Wormer

- Levasole

Record Sheet

De-Wormer Specifics

- Levasole
  - Dose: 10ml per 20lbs of body weight

Technique

- Oral
  1. Place a bolus in the end of the bolus gun
  2. Place bolus gun into the side of the mouth
  3. Enter through the bars of the mouth – aiming for the back of the throat
  4. Push gun until there is a slight “give”
  5. Depress bolus gun plunger and withdraw gun
**Example Dewormers**

- **Drench**: A method of treating sheep and goats with parasiticides. It is effective for internal parasites such as worms.
- **Bolus Gun**: Used to administer boluses, which are suitable for treating internal parasites as well as external parasites like ticks.
- **Drench Gun**: Another tool for administering drenches to sheep and goats, suitable for a variety of treatments.

For more detailed information on the specific dewormers and their applications, please refer to the SHONE FARM SHEEP & GOAT GUIDELINES.
Hoof Trimming

Hoof Trimmers

Trimming Techniques

A trimmed Hoof:
Hoof walls and heel create flat walking surface. Hoof walls and toes are trimmed.

Heel

Toes

Hoof wall
~ STANDARD OPERATING PROCEDURE ~

Animal Health
Preventive Care

Hoof Trimming

- **Tools**
  - Hoof Trimming Shears

- **Disinfectant / Antibacterial Medication**
  - Betadine
  - Kopertox
  - Blu Kote

- **Record Sheet**

- **Technique**
  - Trim off the excess horn
    - Level with the sole
    - Blunt cut the toe
  - Scrape out pockets where mud or manure has collected
    - Under toe
    - Around bottom edge of hoof
  - Trim hooves level to foot pad / sole
    - Level off cuts
    - Shape hooves to encourage a normal gait
MANAGEMENT PRACTICES (*Health*), continued

Preventative Care

*Docking a Tail:*

The elastrator rubber rings should be stored in a cool, dry place to avoid drying out and cracking. Just before docking tails and castrating, they should be placed in a wide-mouthed container and submerged in antiseptic solution. (Antiseptic solutions used may include; alcohol, mild bleach, nolvasan, etc.).

For an antiseptic to work properly, there must be contact time. Usually using Ethyl alcohol 70% for 20 minutes is effective concentration for killing the tissue phase of Cryptococcus neoformans, Blastomyces dermatitidis, Coccidioides immitis, and Histoplasma capsulatum.

It is a good idea to dip the tip of the elastrator pliers in the jar to also allow contact time. When you reach for a ring in the jar, you will also disinfect your fingers. Once you have the rubber ring, place it on the elastrator.

Place the elastrator around the tail at the end of the caudal fold (as opposed to a “show dock”). Once the rubber ring is in place, keep the pliers attached and lift the tail up and take a close look to make sure that the rubber ring is placed at the distal end of the caudal tail fold. The rubber ring can then be rolled off or pushed off of the elastrator prongs. Avoid snapping the ring into place and make sure wool is not tangled, knotted or pulling under the rubber ring.

Care should be taken to observe the tail until it falls off to make sure there are no open wounds, flies or maggots where the rubber ring is.
Preventative Care

Ram Lambs & Buck Kids:

- **Castration:**

  - **Banding**

    There are a number of techniques that can be used to castrate ram lambs and buck kids, however, Elastrator Bands are used at Shone Farm. A band is placed around the neck of the scrotum, while care is taken not to place the band over the rudimentary teats. Generally, the scrotum will shrivel up and fall off within two to three weeks.

    When placing the Elastrator Band, both testicles must be below the placement of the band in order to properly castrate a ram/buck. If one testicle is missed, it will remain up in the belly cavity and result in a "bucky" lamb or kid. It is not uncommon for these male animals to retain some ability to impregnate females.

    Castration by banding is painful and should be done at a young age (as soon as testicles have descended enough and are large enough to not slip through the bands). Lambs and kids should be protected against tetanus with use of tetanus anti-toxin and cd&t. This can be administered at the time of castration and/or docking (whichever is first).

- **Cryptorchid**

  The testicles (one or both) have not descended fully. This requires a veterinarian if surgical removal of the testicle/s is warranted.

  - Note: the testicle could be in the abdominal cavity or inguinal.
  - Note: the cryptorchid ram can still be fertile

Ram lambs at Shone Farm are castrated unless they are kept for future breeding.
Castration & Tail Docking

Elastrator Plier & Bands

**Standard Dock**

- **Caudal Fold**
- **Elastrator Band**

**Step One:** place band on tail

**Step Two:** Release Plier

**Show Dock**

*(not performed at Shone Farm)*
Animal Health

Preventive Care

Tail Docking

Tools

- Elastrator Plier
- Elastrator Bands

Disinfectant / Antibacterial Medication

- Antiseptic solution
  - Alcohol
  - Nolvasan
  - Mild bleach

Record Sheet

Technique

- **Submerge Elastrator Bands in a wide-mouth container with antiseptic solution**
  - Keep submerged for approximately 20 minutes
  - Dip the tip of the elastrator pliers in the jar as well

- **Place an Elastrator Band on the end of the Elastrator Plier**
  - Push or roll the band on the plier prongs
  - Make sure the band goes past the grooves on the prongs
    - The grooves hold the band in place on the prongs
    - Not all Elastrator Pliers have grooved prongs
  - Squeeze the plier handles to spread the band apart

- **Place the Elastrator Band around the tail**
  - Prong tips facing the body
  - Stop at the distal end of the Caudal Fold
  - Release pressure on the pliers so that the band squeezes down on the tail
  - Push or roll the rubber band off of the prongs and onto the tail
~ STANDARD OPERATING PROCEDURE ~

**Animal Health**

*Preventive Care*

**Castration**

- **Tools**
  - Elastrator Plier
  - Elastrator Bands

- **Disinfectant / Antibacterial Medication**
  - Antiseptic solution
    - Alcohol
    - Nolvasan
    - Mild bleach

- **Record Sheet**

- **Technique**
  - **Submerge Elastrator Bands in a wide-mouth container with antiseptic solution**
    - Keep submerged for approximately 20 minutes
    - Dip the tip of the elastrator pliers in the jar as well

  - **Place an Elastrator Band on the end of the Elastrator Plier**
    - Push or roll the band on the plier prongs
    - Make sure the band goes past the grooves on the prongs
      - The grooves hold the band in place on the prongs
      - Not all Elastrator Pliers have grooved prongs
    - Squeeze the plier handles to spread the band apart

  - **Place the Elastrator Band around the Neck of the Scrotum**
    - Palpate the scrotum to check for 2 descended testicles
    - Prong tips facing the body, pull scrotum through the band
    - Grasp the testicles and pull them through the band
    - If the testicles are not easily retrieved, use fingertips to gently push on the abdomen just above the neck of the scrotum to force the testicles down into the scrotum (see picture at left).
    - Make sure both testicles are below the Elastrator Band
    - Release pressure on the pliers so the band squeezes down on the scrotum.
    - Push or roll the rubber band off of the prongs and onto the scrotum.
Castration
MANAGEMENT PRACTICES (ILLNESS OR INJURY)

It is paramount to sheep and goat welfare that they are checked on a regular basis in order to recognize – as soon as possible – when an animal is sick or injured. The sooner an unwell animal is noticed, the higher the likelihood that it will recover and with minimum consequences and cost. Any signs of illness or injury – no matter how slight - shall be reported to the Livestock Technician or Farm Manager as soon as possible.

Isolating an animal is not always the correct answer - there are situations that will warrant complete isolation with no freedom to move about, however, simple separation is also an option in certain cases. Isolation would occur in the sheep and goat Unit within one of the available pens where the animal would remain until recovery occurs.

Simple Separation may be one of the following: 1. House an animal in a pen and allow the animal access to a small turn-out area, yet, away from its flock mates until recovery occurs 2. Construct a small pen within an area where flock mates are pastured, yet, no physical contact with its herd mates until recovery occurs. In most cases, animals that start their recovery period in complete isolation move to simple separation as their recovery progresses.

If a ewe/doe with a lamb/kid at her side is sick or injured, every effort possible will be made to keep the pair together. Isolation and separation does not mean a mother away from its offspring necessarily.

After complete recovery has occurred, a sick or injured animal will be returned with his or her flock mates. The animal shall be checked at least 2 times per day for one week (7 days) thereafter to ensure its reintroduction to the flock is complete and that further illness or injury has not occurred.

In the event that an illness or injury may result in permanent disfigurement that would affect quality of life or, that the animal, in no way, can ever recover from, the animal will be humanely euthanized. The decision for an animal to be euthanized will be made by the Livestock Technician, Farm Manager or Veterinarian.
MANAGEMENT PRACTICES (Illness & Injury), continued

Medications in stock: In the event an illness or injury, medications are available and kept on site at Shone Farm. All medications are administered under the advisement of a livestock Veterinarian. No student is to take it upon themselves to medicate an animal without the express permission of the Livestock Technician, Farm Manager or Livestock Veterinarian.

Medications available at Shone Farm are used to treat the Livestock upon injury or illness - medications, such as antibiotics, are not used for any purpose other than in response to an unthrifty or injured animal. Medications are used at Shone Farm to treat animals and to: relieve pain, suffering and stress; aid in healing; improve health; prevent illness.

All medications have labels intact with drug name, dose strength (concentration), dose form (formulation: tablets, powder, caplets, etc), total amount or volume, directions for preparation of solution, storage and use information, label warnings, expiration date, controlled substances, National Drug Code (NDC) – every prescription medication package is required by Federal law to have an NDC number (a 10-digit identifying number for each medication) assigned by the DEA (Drug Enforcement Agency), Lot or Control Number (every medication package are required by Federal Law to have a lot or control number to identify a particular group of medication packages, NADA (New Animal Drug Application) (a single unique NADA number assigned to each drug approval by the FDA, Name of the Manufacturer.

Prior to medicating an animal, students are instructed in the proper use of syringes and needles and administration of medications by: qualified staff; class instruction; livestock veterinarian.

All medications are refrigerated to maintain temperature control and are stored in secure location.
MANAGEMENT PRACTICES (Illness & Injury), continued

Medications

1. **NSAID** (Non-narcotic, Nonsteroidal, Analgesic Agent With Anti-inflammatory And Antipyretic – fever reducing - Activity)
   a. Banamine

2. **Antibiotics** (capable of destroying or inhibiting the growth of microorganisms, especially bacteria)
   a. Penicillin
      - Fights Gram-Positive Organism
      - Narrow Spectrum
      - Treats bacteria including, but not limited to: staphylococci ("staph"), streptococci ("strep"), pneumococci
   b. Oxytetracycline (LA200, Vetrimycin 200)
      - Fights Gram-Positive Organism & Gram-Negative Organisms
      - Broad Spectrum
      - Treats bacteria including, but not limited to: Mycoplasma, Spirochetes (including Lyme Disease organism, Chlamydia, Rickettsia, Staphylococcus and Streptococci.
      - Treats Gram-Positive bacteria including, but not limited to: Clostridium Perfringens, Tetani, Listeria, Brucella
      - Many types E. Coli and Pseudomonas Aeruginosa are resistant to tetracylines.
      - Has anti-inflammatory and immunomodulating effects.
      - Can suppress Prostaglandin synthesis.
   c. Nuflor (Florfenicol)
      - Fights Gram-Positive & Gram-Negative
      - Broad Spectrum
      - Treats bacteria including, but not limited to: Pasteurella Haemolytica, Pasteruells Multocida & Haemophilus Somnus (BRD) and foot rot.
MANAGEMENT PRACTICES (Illness & Injury), continued

Medications

3. Steroids
   a. Dexamathazone (anti-inflammatory)
   b. Lutalyse (stimulates myometrial activity, induces either abortion or parturition, evacuates postpartum uterine debris)
      - Primary use: evacuating retained placenta
      - Students with asthma or any bronchial disease are cautioned to handle this with the utmost care and all students are taught to use gloves. Pregnant women should not handle prostaglandin or its container. If accidental exposure occurs, the exposed area should be washed and a physician contacted immediately.
   c. Oxytocin (Oxytocin causes rhythmic contractions in the uterus. Causes labor, accelerates parturition, evacuates postpartum uterine debris)
      - Primary use: milk let down
   d. Epinephrine (relaxes smooth muscle of bronchi and iris, provides relief of anaphylactic reactions)

4. Vitamins
   a. Vitamin B (stimulates appetite)
   b. Vitamin K (slows down excessive bleeding)
Illness and Injury

**Illness or Injury (able to move) – Respiratory, Udder, Eyes, Diarrhea, Slight Lameness**

1. Observe sheep & goats as outlined in “Animal Health Standard Operating Procedure”
2. Notification of sick or injured animal:
   - Livestock Technician (if on duty)
   - Farm Manager (any time and if Livestock Technician is unavailable)
3. If an animal is exhibiting any signs of illness or injury but is not limited in its ability to walk, it should be brought up to the barn for observation
4. Try to have at least 2 people to move the sheep or goat
5. If it is a ewe or doe, check to see if she has a lamb or kid and bring it up with her
6. If it is a lamb or kid, bring up its dam with it
7. It is always advisable to move a target animal with other sheep or goats
8. Do not attempt to move an animal by itself in a pasture – they will instinctively seek out other sheep or goats (see Behavior) and run from you in another direction.
9. In moving a group, you have the option of sorting off the ones you don’t need, later – in the barn
10. When moving a sick animal, move her as slowly as she has to go (e.g. labored breathing, lameness, weakness may be factors)
11. Follow the directions in “Receiving Standard Operating Procedure” to set up a pen for the sick animal to be isolated in
12. If the animal is well enough to go through the chute, perform tasks related to the issue and gather all information possible regarding her health as quickly as possible:
   - Temperature
   - Dehydration (skin pinch test)
   - Collect questionable looking manure (mucus, bloody, foul-smelling)
   - Labored Breathing (is it an obstruction or coming from the lungs)
   - Check for heat on afflicted area (udder, teats, eye, lesion, abrasion, contusion, etc)
   - Check for inflammation and edema
   - Check for foul odor in wounds
   - Clean any debris away from nostrils, eyes, wounds
~ STANDARD OPERATING PROCEDURE ~

Illness and Injury - continued

**Illness or Injury (able to move) – Respiratory, Udder, Eyes, Diarrhea, Slight Lameness**

13. Once in the pen, observe the animal to see if it eats or drinks
14. Formulate all information so that it can be passed on appropriately to supervisors and veterinarian
15. Follow Up Notification:
   - Livestock Technician (if on duty)
   - Farm Manager (any time and if Livestock Technician is unavailable)
   - Veterinarian (as advised by Livestock Technician or Farm Manager or, if neither of those is available or reachable)
16. Follow directions given by the Livestock Technician, Farm Manager or Veterinarian
17. Inform fellow workers of the sick or injured animal and leave directions on its care

**Illness or Injury (unable to move)**

1. Observe sheep & goats as outlined in “Animal Health Standard Operating Procedure”
2. Notification of sick or injured animal:
   - Livestock Technician (if on duty)
   - Farm Manager (any time and if Livestock Technician is unavailable)
3. If an animal is exhibiting any signs of illness or injury and is limited in its ability to walk, it should remain where it is
4. If it is a ewe or doe, check to see if she has a lamb or kid and find it
5. If possible, construct a pen around the animal consisting of single panel sides
6. If possible, offer the animal water
7. Gather all information possible regarding her health as quickly as possible:
   - Labored Breathing (is it an obstruction or coming from the lungs)
   - Visually check for wounds and broken bones
   - Visually check for inflammation and edema
   - Visually check for questionable looking manure (mucus, bloody, foul-smelling)
8. Once in the pen, observe the animal to see if it eats or drinks
9. Formulate all information so that it can be passed on appropriately to supervisors and veterinarian

~ STANDARD OPERATING PROCEDURE ~

Illness and Injury – continued

**Illness or Injury (unable to move)**

10. Follow Up Notification:
    - Livestock Technician (if on duty)
    - Farm Manager (any time and if Livestock Technician is unavailable)
    - Veterinarian (as advised by Livestock Technician or Farm Manager or, if neither of those is available or reachable)

11. Follow directions given by the Livestock Technician, Farm Manager or Veterinarian

12. Inform fellow workers of the sick or injured animal and leave directions on its care

**Illness or Injury (emergencies)**

1. Observe sheep & goats as outlined in “Animal Health Standard Operating Procedure”

2. Notification of sick or injured animal:
    - Livestock Technician (if on duty)
    - Farm Manager (any time and if Livestock Technician is unavailable)

3. If an animal is exhibiting any signs of having a traumatic injury (severe blunt force trauma, penetrating trauma, broken limb, deep laceration, etc) that may result in death or permanent disfigurement and unable to walk, it should remain where it is

4. If it is a ewe or doe, check to see if she has a lamb or kid and find it

5. If possible, construct a pen around the animal consisting of single panel sides

6. Gather all information possible regarding her health as quickly as possible:
    - Labored Breathing (is it an obstruction or coming from the lungs)
    - Visually check for wounds (deep lacerations) and broken bones
    - Visually check for inflammation and edema
    - Visually check for excessive blood
    - Visually check for inflammation and edema

7. Formulate all information so that it can be passed on appropriately to supervisors and veterinarian
Illness or Injury (emergencies)

1. Follow Up Notification:
   - Livestock Technician (if on duty)
   - Farm Manager (any time and if Livestock Technician is unavailable)
   - Veterinarian (as advised by Livestock Technician or Farm Manager or, if neither of those is available or reachable)
   - Livestock disposal company
2. Follow directions given by the Livestock Technician, Farm Manager or Veterinarian
3. Euthanasia shall be performed by the Livestock Veterinarian or trained personnel
4. Disposal of euthanized animals shall occur as soon as possible by notifying the local livestock disposal company and arranging for pick up – animals shall not be buried
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

REPRODUCTION (Reproductive Management) ~
If a sheep/goat does not reproduce, and do so easily, it is worth no more than its current slaughter value, therefore, productivity of the flock/herd (ewes/does and rams/bucks) is a direct reflection on reproductive efficiency. This is true regardless of the use of the flock/herd: financial gain or educational gain.

Goals and objectives are ever-changing while focusing on education simultaneously with decreasing labor, time and facility/resource requirements during lambing/kidding.

Several factors influence and affect reproduction in both the ewe/doe and ram/buck: genetics, nutrition, environment, day length, health, etc.

In general, most breeds have seasonal breeding patterns – usually cycling when day length decreases. Typically, this time frame begins in early August until January, however, many operations begin breeding in November in order to have larger offspring for showing and slaughter time. In order to facilitate optimum educational opportunities at Shone Farm, we breed animals to coincide with classes – usually around August in order for January births.

Breeding is primarily accomplished with live cover, however, hormonal manipulation is a common occurrence with the use of CIDRS. Ewes cycle every 16 – 17 days and are receptive to the ram for 24 to 48 hours and give birth from 140 to 152 days post mating. Does cycle every 18 – 24 days and are receptive to the buck for 12 to 36 hours and give birth from 145 to 152 days post mating.

A mature (and healthy) ram/buck can settle up to 75 or more ewes/does during a breeding season. Ideally, male breeding animals should be at least a year old before breeding, however, a 2 year old will yield more pregnancies.

Breeding soundness exams are conducted by a veterinarian on all male breeding animals brought to Shone Farm for the purpose of breeding. Tests are also conducted to rule out specific diseases (Scrapie and Spider). As a general rule, all male breeding animals are held in quarantine to observe for any health problems, given a de-wormer and, if needed, feet are trimmed.

Approximately, 3 – 5 weeks (and depending on condition) prior to breeding, all breeding animals are “flushed” on pastures containing grasses of high nutrition. Animals are shorn and feet are trimmed prior to breeding and Mineral blocks are available to all breeding animals at all times.
Management Practices (Reproduction & Parturition)

Reproduction (Reproductive Management) ~ continued

Reproductive Functions: The Estrous Cycle is the recurring physiologic changes that are induced by reproductive hormones in females. Estrous cycles start after females reach sexual maturity. Anestrous phases or pregnancies occur as part of the cycle. Estrus is the stage in the female's reproductive (Estrous) cycle when she is “receptive” to breeding and is able to conceive.

Ewes of most breeds of sheep respond strongly to seasonal shifts and will ovulate in shorter days, longer hours of darkness. Usually, the natural breeding season lasts from late August to February. Shone Farm sheep are seasonal breeders.

Does of most breeds of goats respond strongly to seasonal shifts and will ovulate in shorter days, longer hours of darkness. Usually, the natural breeding season lasts from late August to February. Shone Farm goats are seasonal breeders.

Note: there are some breeds that are not affected by seasonal changes.

Ewes & Does are most likely to give birth to twins: if they are genetically predisposed; if the ewes & does are receiving high quality feed rations (meeting all nutritional needs) during time of breeding; if they are kept as comfortable and with the least amount of stress as possible and the ram/buck is not overused. Breeding animals at Shone Farm are “flushed” a minimum of 3 weeks prior to breeding to ensure they are receiving optimum nutrition for successful pregnancy rates. Usually, ewes & does in their prime (between 2-6 years of age) are more likely to have (successful) multiple births.

Goats show estrus more obviously than sheep. Does become vocal and will bleat loudly, wag their tail from side to side and their vulva will appear reddened and slightly swollen. Ewes may give no indication of estrus except to be receptive to the ram.

Preparing the Ewe for Breeding: Before the breeding season begins, it is important to have ewes shorn and then monitored for excessive wool or wool tags around the vulva and udder areas. “Crutching” or “Crotching” the ewes before lambing may be an option if there is excessive or soiled wool. This also aids in observing changes that the ewes go through during gestation. Because the ewe and doe will be carrying excessive weight during gestation, trimming the animal's feet prior to breeding is advisable. This will keep her feet in good condition and prevent lameness so that the she can easily graze and get to water.
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

REPRODUCTION (Reproductive Management) ~ continued

Rams and Bucks should be used sparingly if they are young. Separating the males from the females for several hours will assist in conserving their energy (this time can be used for feeding, drinking and rest). One older, mature ram/buck can usually breed 25-30 ewes/does. Using a different male every 2 years is appropriate to avoid inbreeding.

<table>
<thead>
<tr>
<th>PRODUCTION STAGE</th>
<th>OPTIMAL BODY CONDITION SCORE</th>
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<tbody>
<tr>
<td>Breeding</td>
<td>3.0-4.0</td>
</tr>
<tr>
<td>Early to mid-gestation</td>
<td>2.5-4.0</td>
</tr>
<tr>
<td>Lambing:</td>
<td></td>
</tr>
<tr>
<td>Singles</td>
<td>3.0-3.5</td>
</tr>
<tr>
<td>Twins</td>
<td>3.5-4.0</td>
</tr>
<tr>
<td>Weaning</td>
<td>&gt;2.0</td>
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</tbody>
</table>
MANAGEMENT PRACTICES (Reproduction & Parturition), continued

**Lambing Supplies to Have Available:**

- **Medical Supplies**
  - Syringes: 3cc, 6cc, 12cc, 60cc
  - Needles: 18g, 20g, 22g
  - Antibiotics (as per veterinarian)
  - Pain Meds (as per veterinarian)
  - Lutalyse (as per veterinarian)
  - Oxytocin (as per veterinarian)
  - Betadine (for sterilization)
  - Iodine
  - Lubricant (for pulling lambs)
  - Disposable exam and obstetric gloves
  - Tube feeder

- **Tools and Equipment**
  - Obstetric & Nitrile Gloves
  - Lamb puller
  - 2 small ropes, cable, or twine
  - Plenty of dry towels and blankets
  - Bulb Syringe (Nasal Bulb)
  - Heat lamp
  - 8 oz. (250mL) or smaller baby bottles
  - Scissors
  - Knife
  - Processing kit (docking, tagging, and castrating instruments)

- **Other**
  - Birth records/log
  - Breeding (ewe) records
  - Frozen colostrum (should be kept in freezer)
  - Grease Markers
**Estrus**
- Ewe: at least 6 months of age and weigh 2/3 of their adult weight
- Doe: at least 6 months of age and weigh 2/3 of their adult weight

**Estrous Cycle**
- Ewe: 14-19 days between cycles - average is 17 days
- Doe: 18 – 22 days – average is 21 days

**Fertile Period ("Standing Heat")**
- Ewe: 24 – 36 hours
- Doe: 12 – 36 hours

**Ovulation**
- Ewe: approximately 24 - 27 hours post onset of estrus
- Doe: approximately 24 – 36 hours from onset of estrus

**Egg Viability Post Ovulation**
- Ewe: 10 – 25 hours
- Doe: 10 – 25 hours

**Gestation**
- Ewe: Between 145 and 154 days
- Doe: Between 145 and 155 days
MANAGEMENT PRACTICES (Reproduction & Parturition), continued

Male Reproductive Tract

Female Reproductive Tract
MANAGEMENT PRACTICES (Reproduction & Parturition), continued

PREPARATION

Parturition (lambing / kidding) Preparation [Ewes / Does] ~ Ewes & Does remain out in the pastures for the majority of their gestation. A month prior to parturition, ewes and does are brought to the barn and: vaccinated; checked for “bagging up”; any injuries; foot problems or pregnancy associated problems (prolapse, udder problems, CL, etc). Ewes and does remain in the barn / Lot pasture for the remainder of their pregnancy for observation and are accompanied by the burros for protection from predators. Any animals exhibiting health problems are housed in separate pens, away from the others, and if possible, are housed with an accompanying animal of the same species. Injured and ill animals are given any necessary first aid, long term care, medications and / or vet care until they can re-join the flock / herd. If an animal is unable to re-join with its same species, accommodations will be made to house her throughout the rest of her pregnancy. Care should be taken to create an environment as stress free as possible. Great effort should be taken to avoid startling the animal and she should be made to feel safe and comfortable enough to eat and drink. Sometimes the nature of the animal prevents the opportunity to have a stress-free environment for her, in which case, limited contact should be adhered to.

- **Feed** - Depending on the ewe flock’s condition, they are fed the appropriate hay or grain in order to maintain proper nutrition prior to lambing.

- **Health** - The ewe flock is inspected for illness, injury and any hoof problems prior to lambing. If any problems are observed, the ewe is treated appropriately for her particular issue.
SHONE FARM SHEEP & GOAT GUIDELINES

MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION), continued

PREPARATION

Parturition (lambing / kidding) Preparation [Pens] ~ All pens that sheep and goats will be using will need to be cleaned out and prepared starting approximately 2 weeks prior to lambing / kidding season. Pens should be free of manure, dust, bird feces and should be dry by lambing / kidding time. Waterers need to be cleaned and checked for any maintenance needs. Feeders need to be in place, cleaned and checked for any maintenance needs. Straw bales need to be ordered and ready to use for bedding by lambing / kidding time.

The rotation of animals will proceed as follows: Show Pen (to lamb / kid out), Jug (post lambing / kidding), Nursery, Creep Pen, Main pen with main population.

Jugs:
- Sweep walls with a broom and clean off any debris
- Rake out any debris from the floor of the jugs
- Clean out the waterers and check for any maintenance needs
- Keep water off so that there is no stagnant, standing water in the bowls
- Test heat lamps
- Make sure jug doors open and close easily and can be fastened closed
- Supply jugs with straw bedding, being careful to plug up any holes that the lamb or kid can squeeze through

Nursery:
- Rake out any debris from the floor of the nursery
- Clean out the waterer and check for any maintenance needs
- Fasten a blue panel to be used as a divider, if needed in the future
- Stack straw in front of the nursery to be used as bedding in pens
- Make sure nursery gates open and close easily

Creep:
- Rake out any debris from the floor of the creep
- Clean out the waterer and check for any maintenance needs
- Make sure creep gate is blocked off with a panel
- Make sure scale cords are up out of the creep pen (store in the chute)
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION), continued

PREPARATION

Pens

- Lambing
  When a ewe is observed to be within approximately 5 days of lambing she is moved to a designated lambing area (ex: Show Pen) for further observation. Ewes are moved into the lambing pen in small groups so that they are not isolated and to avoid stress. Once a ewe has completed lambing, ideally the lambs begin nursing and then she is moved into a Jug where she will bond with her lambs and pass her placenta.

- Post Lambing (Jugs)
  After a ewe has lambed, she will remain with her lambs in a lambing jug for up to 3 days to bond with her lambs. Twins and Singles are placed in the built-in lambing jugs in the sheep unit, however, Triplets and more are put into a larger lambing jug constructed of sheep panels within the sheep unit. These 3 days are also used to observe the new family and to make sure all are thriving. Families with exceptionally small and vulnerable or low thriving lambs may stay in the jugs longer than 3 days.

- Post Lambing (Nursery)
  After a ewe and her lambs have completed their stay in the lambing jugs, the lambs are ear tagged and the family is placed into the Nursery for approximately 3 days. Ideally, 2 or 3 families will share the Nursery at any one time in order to introduce new mothers and lambs into the flock. Traditionally, classes vaccinate, dock and castrate the lambs, however, in the event that a class will not be participating, Shone Farm staff will perform these tasks when lambs are placed into the Nursery.
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

PARTURITION (Lambing) ~

Shone Farm implements the style of “Intensive lambing/kidding practices” in order to: increase lamb/kid survival; teach the students all aspects of lambing (the physical changes a ewe/doe undergoes, parturition, recognition of dystocia and lamb/kid health). Parturition is the process or actual event of giving birth to offspring. A fine-tuned series of physiological reactions between the fetus, placenta, and ewe is essential for labor to end in successful lambing. Problems (dystocia) associated with labor and parturition are not uncommon due to the complexity of the lambing process.

Several physical, physiological and hormonal changes take place to prepare the ewe/doe and fetus for parturition. During most of gestation, the fetus is lying on its back within the uterus - with feet pointing up. During the last month of gestation, the fetus will rotate into birth position in the dam. This normal birth position for lambs and kids is with the fetus resting on its abdomen with the forefeet and nose pointing toward and, at the cervix. Fetuses that are not in proper position prior to parturition are at risk to dystocia (difficulty in birthing). Hormonal changes in the dam cause mammary gland changes. The glands (udder) begin to fill with milk and sometimes leak milk from the teats as the dam nears parturition.

Parturition onset is triggered by the release of cortisol by the fetus. Cortisol is released into the maternal circulation which results in increased production and release of estrogen by the placenta. The muscular wall of the uterus begins contracting and preparing to expel the fetus.

Stages. The lambing process involves three progressive stages (I, II, and III).

**Stage I:** Contractions, relaxation of ligaments, cervical softening & dilation.

**Stage II:** Breakage of the first "water bag" and birth.

**Stage III:** Placenta is expelled.
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

PARTURITION (Lambing) ~

Physiologic changes in the last days of Gestation:

- **Pelvis Expansion** - Secretion of the hormones Relaxin and Estrogen are the cause. This results in enlargement of the birth canal to prepare for fetus expulsion. The pubic symphysis actually demineralizes, which allows more expansion of the birth canal during parturition - as necessary.

- **Tailhead Softening and Sinking** - Soft tissues around the tailhead soften and look sunken so that the tailhead is more prominent in the last day (or more) prior to parturition. Relaxation of the pelvic ligaments is due to the secreted hormones.

Early Labor Behavior & Physical Changes:

Every animal is an individual, therefore, her response to labor will be unique, however, there are specific behaviors that most ewes and does exhibit.

Individual behavior may include, but is not limited to: restlessness; grunting; bleating; bumping her sides with her nose; licking her sides and legs or sticking her nose up; excessive interest in newborn lambs that aren’t hers; sitting like a dog; friendly or calm behavior; rubbing sides and vulva on fencing.

Typical behavior may include, but are not limited to: separation from others; pawing; laying down & standing up; increased respiration; decreased appetite. Udder will enlarge (“bag up”) and teats will engorge with milk. Flanks will appear sucked in and hips more prominent as uterus shifts in preparation (“dropping”). Vulva becomes very relaxed and loose – with slight separation as color changes to bright pink or red.
PARTURITION (lambing) ~

Late Labor Behavior & Physical Changes prior to Parturition:
Typical behavior may include, but is not limited to: complete separation of self from the flock; pawing; laying down & standing up; laying on her side while pointing nose up in the air; laying on her side and “pushing” in her hind end; low grumbling noises as they do during bonding and recognition. Milk may stream out of teats.

- *Isolation* - from the rest of the flock or herd.
- “*Nesting*”
- *Off feed* - most often dams will stop eating the day of parturition.
- *Distress, discomfort* - restlessness, circling, pawing, biting or kicking at the flank, crying, bawling and groaning.

Physiological and physical changes prior to Parturition:

- *Vulva* - softens and becomes swollen
- *Cervix* - becomes dilated
- *Mucus* - stringing from the vulva. This indicates cervical dilation and expulsion of the mucus plug (which sealed off the uterus to protect it from microorganisms throughout pregnancy).
- *Change in body temperature* - of dam.
- *Amniotic sac* - rupture. This results in expulsion of amniotic fluid (“water breaking”).
- *Dripping milk* - from the teats.
Lamb / Kid Checks at Shone Farm are done several times during the day and sometimes throughout the night in order to assist any animals in distress. It is important to do thorough checks by looking at the flock / herd as a group to see if there is any stress or curiosity occurring and then to look at individuals for unusual behavior. The most vulnerable time for newborns is early morning when they may suffer from hypothermia. It is important to look for newborns as well as for any animals in labor.

Multiple Births - With twins, triplets, and larger “litters” it is extremely important that the dam claims all of her lambs / kids and that they all get their share of colostrum. If the dam does not have enough milk for all of the lambs / kids, it is important to supplement her with high quality feedstuffs to assist in an increase of milk production. If the lambs / kids are vocalizing more than they should, a supplemental bottle may be needed.
Reproduction & Parturition

Lambing / Kidding Checks:

**Routine**
- Stop, look, and listen for any lambing / kidding activity [animals in labor & newborns]
- Observe quietly from a distance, and look for ewes & does that might be trying to isolate themselves
- It is important to check remote corners of the facility to make sure that there are not any missed ewes or does
- When there are night checks, it is best to leave some lights on for better viewing
- It is important to check the dams that have already given birth for any lost lambs or kids, multiple births, and to make sure that the newborns are nursing
- It is also important to keep the dams on a routine so that they are more familiar with the process and to decrease any additional stress or trauma
- Keep dogs and other visitor’s way to help keep the dams calm and stress free
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

*PARTURITION*, continued

- **Stages of Parturition**
  
  There are three stages to parturition (lambing/kidding):
  
  1st *Stage*: dilation of the cervix  [3 to 4 hours]
  
  2nd *Stage*: expulsion of the fetus(es)  [birth of a lamb/kid usually occurs within an hour or less from the rupture water bag]
  
  3rd *Stage*: expulsion of the placenta.
  
  **Note**: *First time dams or multiple births may take longer*

If labor takes over an hour for mature animals and over 2 hours for yearlings, assistance may be required. There are separate afterbirths for each lamb/kid in multiple births and the placenta is passed 2 to 3 hours after delivery is over. After the lamb or kid is born, the dam will lick and nuzzle it to begin the bonding process. It is best not to interfere with this process.

- **Proper Progression**
  
  - Lamb / Kid begins emerging 30 minutes to 60 minutes post amniotic sac with fluid is passed out of the vulva

- **Proper Presentation**
  
  - Lamb / Kid nose and front feet present
  
  - Lamb / Kid back is toward the ewe’s back (feet are pointing downward)
  
  - Ewe / Doe is usually in a laying down, having steady, long contractions
  
  - Lamb / Kid’s head passes thru the birth canal
  
  - Lamb / Kid’s shoulders pass thru the birth canal
  
  - Hips and back legs follow quickly behind expulsion of shoulders
**Dystocia Types & Recognition**

*Dystocia:* Difficult birth. Can be caused by a large or improperly positioned fetus, a narrow maternal pelvis, or by failure of the uterus and cervix to contract and expand normally.

- Head first with one foreleg back, body right side up

- Head bent down with forelegs correct, body right side up

- Head thrown back with forelegs correct, body right side up
Dystocia Types & Recognition

- Hind feet first, body right side up

- Hind feet first, body upside down

- Breech position with rump and tail, no visible feet
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

**PARTURITION - continued**

- **Dystocia Types & Recognition**
  - Head first with one foreleg, body positioned upside down
  - Head alone, no feet visible
Reproduction & Parturition

Dystocia Types & Recognition
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

**PARTURITION - continued**

**Dystocia Response**
Whenever an animal experiences dystocia, she will need assistance. Immediately upon noticing there is a problem, human intervention must occur in order to provide pain and discomfort relief to the animals involved and, in most cases, to save their lives. Response and assistance must occur quickly and efficiently in order to have the best possible chance for a positive outcome. Preparation is key in that the ewe or doe is properly restrained in as clean an area as possible and that needed tools and supplies are readily available. Supplies to have nearby consist of a lamb puller or twine, bulb syringe, towels and naval dip.

**When to Assist with Lambing and Kidding**
- If the process is taking too long due to dam exhaustion or size of baby
- If there is any type of dystocia
- If the dam dies during parturition
- When one is pulled, the entire litter must be pulled in the case of multiples

**Lamb Pullers**
- Conventional
- Twine: slipknot on each end to put on front feet

**When to call the Veterinarian [know your limitations!]**
- Any time that you are unsure of how to proceed
- If you cannot get the lamb into proper position for delivery
- If the lamb is too large to pull out
- If the lamb is dead inside of the ewe and is too large to be pulled out
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

PARTURITION – continued

Dystocia After care

In the interest of time and urgency, care is more aggressive with multiples than singles. In other words, there should be no waiting to tube feed obviously weak babies – it’s best to treat all babies the same in this respect so that no one baby gets left behind in care or left unnoticed. When dystocia occurs, after care of the lamb / kid will always occur and sometimes that is also the case with the dam. Often, the baby is born unconscious, not breathing or without a heartbeat. Often the dam is exhausted and cannot stand to allow nursing. If the baby is not breathing but is conscious, creating a sneeze may trigger a breathing response. If the baby is not breathing and is unconscious, swinging it by its hind legs then dipping it quickly in and out of a bucket of water may stimulate a gasping response. Compressions can be performed on a baby without a heartbeat. When the baby is conscious, it should be placed at the head of its dam as soon as possible so that the bonding process can begin. Care should be taken to assist the dam in drying off the newborn and rubbing it with a towel to stimulate circulation and survivability. The newborn should be encouraged to stand and move about as soon as possible, as should the dam. Time should be taken to see if the newborn can stand and nurse on its own. If the newborn gives any indication of being too weak or slow for this to occur or hasn’t nursed within an hour, there should be no hesitation in tube feeding. Tube feeding provides energy, a laxative and assists in the newborn’s thermoregulation abilities so that it doesn’t suffer hypothermia and death.

NOTE: THE GOAL IS TO INSERT THE TUBE INTO THE ESOPHAGUS, NOT THE TRACHEA. If fluid is passed into the trachea and lungs, the newborn will drown. If the tube enters the trachea (windpipe), the animal may cough, gag, and react violently. An animal that has swallowed the tube can still bleat and cry but an animal that has inhaled the tube cannot make these noises. It is unusual for the tube to enter the trachea and it will not go as far in as it does into the esophagus and stomach.
**PARTURITION - continued**

**Dystocia Immediate After Care**

In order to tube feed the newborn/s, the dam should be milked enough to provide what each baby needs. The newborn should be provided with enough colostrum (mother’s milk) - a 12lb baby needs approximately 8oz total - to sustain it for several hours while it recovers from its difficult birth. Adding “Nutri-drench” to the bottle provides the newborn with energy, vitamins and minerals that it may be lacking. 4 – 6oz of colostrum is a good amount for the first tube feeding and if the newborn/s continue/s to exhibit difficulty in nursing, tube feeding should be repeated 4 – 6 hours later (depending on the amount given). A 12lb lamb should never be fed more than 8oz per feeding due to the lack of stomach capacity.

The dam and newborn/s should be housed in a jug with no drafts with the heating lamp on. If there are triplets, a larger jug should be used for the new family to avoid the mother accidentally stepping on or laying on the newborns.

**Dystocia After Care**

The new family should be checked on often and encouraged to get up between feedings, if they are able. Sometimes, the newborn needs time to rest and recover between feedings. Allow time in between checks and feedings for the dam and newborn to bond.

Healthy lambs/kids rest in a sternal position with their head tucked back – laying flat on its side or with its head back indicates a problem.

Watch a lamb/kid when it first gets up – stretching upon standing indicates a healthy, well-fed and well-nourished lamb.
~ STANDARD OPERATING PROCEDURE ~

Reproduction & Parturition

Assisting with Lambing / Kidding:

**Tools**
- Towels
- Lamb / Kid Puller
- Twine
- Bulb Syringe
- Knife

**Preparation**
- Make sure ewe / doe is restrained
- Wash your hands and arms with soap
- If possible, clean the ewe off – especially if there is diarrhea present
- Put on either obstetric gloves or Nitrile gloves
- Place lubricant on one glove (that will be entering the uterus)

**Rules of Pulling a Lamb / Kid**
- Allow the ewe to be in whatever position that she wants (standing or laying down)
- Do not pull unless the head is fully in the birth canal
  - Grasping the back of the head to guide it forward is helpful
- Do not pull a forward fetus unless both legs and head are forward
- It’s ok to pull a lamb out backwards
- Keep even pressure and try to pull harder as the dam has contractions
- If dam is standing, pull slightly downward – toward the ground
- If dam is laying on her side, pull slightly downward – toward dam’s feet

**Asses Situation**
- Glove up and lubricate the glove
- Fingers together and hand slightly cupped
- Gently enter through the vulva and into the birth canal with lubricated gloved hand
- If the baby’s head is protruding, gently sweep your hand back and forth while you push into the birth canal slowly
- As your hand goes further into the birth canal toward the uterus, find the head and each limb to determine what the orientation is of each
Reproduction & Parturition
Assisting with Lambing / Kidding:

Normal Presentation – Large Lamb / Kid
- Restrain Ewe / Doe
- Hold onto front legs of lamb / kid and guide head
- Keep steady pressure and pull slightly harder with contractions
- Once the head is out, clear the amniotic sac away from the nose and mouth while maintaining constant pressure
- Once you are confident that both front limbs and head are out far enough to maintain control, pull one leg at a time to bring the shoulder forward and elbow out
- Pull the lamb / kid the rest of the way out and follow Dystocia After Care protocol
- Proceed to pulling out the next lamb / kid

Breech (hind feet first)
- Restrain Ewe / Doe
- A lamb / kid can be pulled out backwards
- Hold onto back legs of lamb / kid
- Keep steady pressure and pull slightly harder with contractions
- Pull the lamb / kid all of the way out and follow Dystocia After Care protocol
- Proceed to pulling out the next lamb / kid
~ STANDARD OPERATING PROCEDURE ~

Reproduction & Parturition

Assisting with Lambing / Kidding:

Dystocia

- Restrain Ewe / Doe
- Assess the situation
- Work slowly to maneuver and position limbs and head properly
- You may need to push the baby further into the uterus in order to maneuver
- If you have feet showing but the head is back
  - Tie twine onto the feet
  - Push the baby back and pull nose forward
  - Pull on twine to guide feet out while holding the head straight and guiding it out simultaneously
  - Resume pulling the baby out

- Multiples:
  - Before pulling, make sure you have limbs & head from the same baby
  - Push other babies out of the way in order to work on one at a time
  - Position each one into the proper presentation (or backwards)
  - Pull each baby out with the same care and revive each one as it emerges

- Follow Dystocia After Care protocol on all babies
~ STANDARD OPERATING PROCEDURE ~

Reproduction & Parturition

Resuscitating a Newborn Lamb or Kid:

**Resuscitation**

1. Grasp the newborn’s hind limbs firmly, and swing the newborn lamb back and forth two-to-three times to force fluids down and out the nose. This also causes the internal organs to put pressure on the lungs to force fluids out and on the heart to help get it beating (NOTE: when swinging, make sure to be aware of the location of your knee’s/leg position and ground to not hit the newborn on the head).

2. Check newborn for signs of breathing (rib cage moving up and down, breathe on your cheek, sputtering and coughing).

3. If newborn is not breathing, hang it upside down again and dip it quickly in and out of a bucket of water to emit a shocked, gasp response.

4. Once the newborn is breathing, open her mouth to make sure that the airway is not obstructed in any way.

5. Using a bulb syringe, suction out any fluid from the inside of the mouth and nostrils of the newborn.

6. Suction the newborn again as needed.

7. Continue to hold the newborn in a slight downward position and rub the lamb vigorously with a towel (this will stimulate the lamb’s circulation and to continue breathing).

8. Give the newborn to its dam to help clean and warm it up and in order to begin the bonding process.

**Hypothermia**

1. Fill a sink with warm water

2. Submerge the lamb in the water bath with its head propped up

3. Rub lamb and keep submerged as long as it takes for the lamb to start struggling to get up

4. Change the water often to make sure it stays warm

5. Tube feed newborn with 4oz of warm colostrum mixed with warm water

6. Dry lamb

7. Place revived newborn with its dam under a heat lamp
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

POST LAMBING/KIDDING CARE

Once the lamb or kid is born, it should be checked for overall health and thriveability: limbs, mouth and jaw should be checked for any deformities or injuries sustained during parturition; breathing should be monitored for any unusual sounds; eyes should be checked for any deformities or injuries sustained during parturition. Entropion is a hereditary disorder where the eyelids roll inward causing the eyelashes to rub on the eye and create ulcerations. Some cases of entropion improve without intervention, however, in most cases, the lamb or kid needs veterinary care.

Unthrifty newborns should be brought to the attention of the Livestock Technician for proper care and potential veterinarian care. If the Livestock Technician is not available, the Farm Manager should be notified. If neither the Livestock Technician nor Farm Manager are available and the situation with the newborn is critical, the veterinarian should be called for consultation and possible treatment.

If parturition is uneventful, the dam and newborn/s should be left alone to bond. Staff should stay nearby to help dry the newborn/s, if necessary, and get them to a jug as soon as possible. Care should be taken to be quiet and calm in order to reduce stressing the animals during the bonding process.

Sometimes newborns inhale birthing fluids which can cause trouble with breathing and/or pneumonia, therefore, newborns should have the fluid removed with a bulb syringe. The bulb syringe should be squeezed then the tip of the syringe should be gently placed into the nostril and in the corners of the mouth whereupon the bulb should be released to suck any fluid out. Never squeeze the bulb when it is in the nostrils or mouth as this will force fluid further in. If the newborn is coughing or having trouble breathing, tickling its nostril with a piece of string or straw will emit a sneeze and sometimes force fluid out.

Regardless of the care being given, if possible, the newborn should be within reach of its dam. She should be allowed to clean her baby and emit bonding recognition noises. The newborns should be observed for standing and nursing. If the lamb/kid does not seem to be getting any milk, unplug the ewe's/doe's teat by breaking the waxy plug on the end of the teat and strip it of several squirts of colostrum. If the ewe/dam is not able to feed the lamb/kid, it will need to become bottle fed or grafted to another dam as an orphan. Bottle fed young should remain with their dams.
MANAGEMENT PRACTICES (REPRODUCTION & PARTURITION)

POST LAMBING/KIDDING CARE – continued

Once it is clear that parturition is over for any particular dam and it is determined that all newborns are healthy, the new family should be placed into a jug, where they will remain for approximately 3 days. Twins may be placed into the permanent jugs, however, larger litters should be placed in larger pens to avoid suffocation or crushing by the mother when she lays down to rest. The jug should have ample straw bedding, a clean, working waterer, a hay feeder and the heat lamp turned on. The ewe should be fed as much orchard grass as she wants.

COLOSTRUM 101:

- Colostrum is the "first milk" that a dam produces after parturition and contains a high level of several nutrients that are important for lamb/kid health and performance. Also present, is a high level of antibodies against a variety of infectious agents that the infant does not carry because antibodies in the dam’s bloodstream do not cross the placenta.

- It is critical that newborns receive colostrum during the first 24 hours of life in order to ensure adequate absorption of colostral antibodies. Antibodies are large protein molecules that can cross the intestinal wall and enter the bloodstream of the newborn only during the first 24 - 36 hours of life. Absorption of these antibodies is most efficient up to 6 hours after birth.

- It is recommended that lambs/kids receive 10 percent of their body weight in colostrum by 24 hours after birth. This means that a 10 lb. lamb should consume 1 lb. (16 ounces) of colostrum by 24 hours of age. Ideally, they should consume half of this within 4 to 8 hours of birth. A 60 cc syringe holds 2 ounces of colostrum.

- All lambs/kids need colostrum. While it is possible for lambs to survive without colostrum in a relatively disease-free environment, the likelihood of disease and death is higher in lambs that do not receive colostrum. The ideal colostrum source for supplemental feeding of lambs/kids is from healthy dams in one’s own flock.

- Older dams have had greater exposure to infectious agents and usually have a higher concentration of antibodies in their colostrum.
Reproduction & Parturition

Post Parturition Care:

- **Remove the amniotic membrane from the mouth or nose of the newborn**
  - Make sure that the muzzle and head of the newborn is completely free of the membrane and/or any moisture
  - Use a towel to wipe the head and muzzle firmly to dry it as much as possible

- **Remove any fluids from airways**
  - Use a bulb syringe to remove birthing fluids from the newborn’s nose and mouth
  - Use a piece of string or straw to tickle inside the nostril to emit a sneezing response

- **Allow dam to bond with newborn**
  - Make sure newborn is within reach of the dam
  - Dam should be allowed to clean her newborn
  - Dam will emit low grumbling noises for bonding recognition – avoid talking or making excessive noise during this process

- **Assist in drying and stimulating newborn**
  - Staff may assist the dam in drying the newborn
  - Use a towel to vigorously rub the newborn

- **Umbilical Cord Treatment**
  - Place a seven percent iodine solution in a small plastic jar with a wide mouth
  - The dam should have taken care of the umbilical cord, but if she has not, tie the umbilical cord and using a pair of scissors, cut below the tie
  - Hold the newborn tightly and place the jar with the iodine solution so that the umbilical cord is submerged. Press the container against the lamb’s body.
Reproduction & Parturition

**Tube Feeding:**

- Measure: Mouth to Last Rib

- Inserting Stomach Tube & Administering Colostrum

- Stomach Tube Removal
Reproduction & Parturition

Tube Feeding:

- **Warm Stomach Tube and Syringe**
  - Run hot water over and through the tube and Syringe
  - Warming up the equipment makes the tube more pliable and keeps the colostrum from being cooled off

- **Measure Stomach Tube Against Newborn’s Body**
  - Place the tube alongside the newborn’s body
    - The mouth of the tube at the animal’s mouth
    - The end of the tube at its last rib - where the stomach is located
    - Note how far the tube will have to be inserted to reach the last rib
  - It is possible for the tube to not be inserted far enough, but it can’t go too far

- **Hold the Newborn**
  - Sit somewhere balanced and comfortable and up off the ground (bale of hay, bucket)
  - Drape the newborn over your thigh so that the front legs are hanging over your thigh and the back legs are hanging down toward the ground. Or,
  - Hold the newborn between your knees – facing away from you – with the back legs hanging down toward the ground.
  - Never tube feed an animal on its side – it may inhale the fluid and drown

- **Insert the Stomach Tube**
  - Hold the animal so its head is in a normal position.
  - Slowly insert the tube into the corner of the animal’s mouth.
  - Gently advance the tube toward the side and the back of the animal’s mouth (there is no need to use pressure or force).
  - The animal may swallow the tube but sometimes they fight.
  - You can see the swallowing motion if you watch carefully
  - **NOTE:** **THE GOAL IS TO INSERT THE TUBE INTO THE ESOPHAGUS, NOT THE TRACHEA.**
~ STANDARD OPERATING PROCEDURE ~

Reproduction & Parturition

Tube Feeding:

Administer Colostrum

- **DO NOT** microwave colostrum (this will destroy its beneficial antibodies) – colostrum should be warmed up by placing its container into another container of hot water.
- Once the feeding tube has been fully inserted into the animal, attach a 60cc syringe to the mouth of the feeding tube.
- Fill the syringe with warm colostrum and allow the fluid to trickle in via gravity (DO NOT force the fluid in with a plunger as this risks stomach rupture or could cause fluid to enter the lungs).
- Thick colostrum may not flow freely and it may need to be diluted with milk replacer or water.
- Avoid allowing air to enter the tube and stomach by pinching the tube shut after the colostrum has exited the syringe.
- After the fluid has been administered, detach the syringe and crimp off or plug the end of the tube as it is withdrawn from the animal. This prevents the newborn from inhaling any fluid as the tube is withdrawn.

How Much and How Often to Feed the Newborn

- Ideally, a 12lb newborn should be fed 8oz of colostrum as soon as possible
- The goal should be to tube feed the newborn only once in hopes that it will be able to stand and nurse by itself.
- In the event that there is not enough colostrum, smaller feedings can be spread out over the next 6 hours, however, emphasis should be placed on providing adequate colostrum as soon as possible.

Sanitation

- To disinfect tube feeding equipment, rinse well immediately after use. Wash thoroughly with warm, soapy water to remove all debris.
- Dilute one ounce of bleach with 21 ounces of water and submerge all equipment in this solution for two minutes.
- Remove, rinse well, air dry and store in a clean place. Wash your hands well before and after tube feeding.
TRANSPORTATION

Transportation of sheep and goats to and from farms, ranches, feedlots, auctions, sales facilities and processing facilities is a routine operation at Shone Farm.

Animals are transported in stock trailers or crates. In preparation for shipping, sheep and goats are brought out of the pasture and into the Porter Livestock facilities. The sheep and goats should be housed in pens of suitable size for the number of animals. Pen/s should have fresh drinking water and the animals shall be fed hay two times per day for the duration of their confinement.

A visual check of all vehicles (trucks and trailers) should be conducted prior to hauling any animals.

The trailer interior shall be inspected for cleanliness and bee/wasp nests. Any debris, stinging insects and insect nests found inside the trailer shall be removed before loading. The inside of the trailer shall be inspected for any damage or loose, swinging dividers and the floor shall be free of holes or rotten wood. Tire condition (inflation, wear and damage) shall be inspected as well as all lights on the trucks and trailers used. The hitch and ball shall be inspected for any damage and for proper use of grease. The electric plug connection shall be inspected for condition and any debris lodged inside.

Once the trailer is attached to the truck a test of the breaks and break controller should be conducted by applying the truck brakes and observing if the brakes on the trailer lock up or have little or no affect in stopping the load. The brakes should be adjusted so that the burden is not solely on the truck, but rather, the trailer should start braking first.

Trailers and trucks hauling animals shall not be overcrowded – animals need adequate space to allow them to stand up again if they should fall or slip during loading, unloading or transit.

If a crate is use to haul animals, it should be checked before using to ensure that door sides and bottoms are in good condition. Once inspected, load the crate into the back of a pickup truck and secure it to the bed in such a way that it does not move around during transport. Use straw bedding for the crate to ensure a clean comfortable environment for the animal(s)
Proper loading techniques, facilities and tools are important in preventing injuries and minimizing handling stress while loading animals. Position of the truck as close to the loading area as possible and regardless of what tools and equipment are used for loading and transportation; handle the animals in a way that ensures their safety and welfare and the handler’s safety throughout all phases of transport. Communication is the key to safely loading animal when multiple staff and students are involved. Start by moving them quietly and patiently in order to prevent injuries to the animals and personnel. When given the opportunity, most animals will follow their instinctual herding urge to move through alleys and chutes that lead into the truck or trailer. Sick or injured animals may require special handling. This may include separate loading, transportation and care to prevent additional stress or injury.

While hauling animals, the driver should take special care to provide as smooth a ride as possible; avoid sudden starts, stops and sharp turns, and pay special attention to speed limits. Animals shall be transported in the minimum amount of time in order to keep transportation stress to a minimum. (See Glossary under Transportation) Stops during transit should be planned so that the animals can be checked to ensure that they are standing and uninjured.

Upon arrival at their destination, the animals should be unloaded quietly and calmly. Once unloaded, the animals should be checked for injury or illness. After transport, animals should be rested and provided access to feed and water before being processed or put in pastures or pens with other animals.

A federal law: 28-Hour Rule (Title 49 U.S. Code Section 80502) and portions of the California Food and Agricultural Code (Section 16908) limit maximum transit time to 28 consecutive hours without unloading the animals for food, water and rest. The maximum period of time allowed for transporting livestock should be determined with consideration for: the animal’s fitness to travel; environmental conditions; vehicle design; road conditions and handling stress.
GLOSSARY

CLOSED RANGE (Fence In): It is the responsibility of the sheep/goat owner to keep their animals contained and enclosed, however, if animals break through a fence, the degree of liability of the owner is usually based on normal husbandry practices and if the owner used a “lawful fence”. California Food and Agricultural Code section 17121 describes a “Lawful Fence” as “any fence which is good, strong, substantial and sufficient to prevent the ingress and egress of livestock. Any kind of wire or other fence of height, strength and capacity equal to or greater than the wire fence herein described is a good and substantial fence within the meaning of this article.

PROHIBITED FEEDSTUFFS: The FDA prohibited the use of protein derived from mammalian tissue in ruminant feed in August, 1997. Exceptions include milk, blood, porcine and equine products. As a result, Feed manufacturers are required to label any feed containing this type of protein with “Do not feed to cattle or other ruminants”.

STRESS:

1) Behavioral Stress: This is best described as unusual behavior in sheep & goats as a result of stress. One or more of the signs are as follows:
   - Abnormal Posture
   - Off feed or poor appetite
   - Restlessness
   - Dull or depressed attitude
   - Very quiet
   - Lameness or alteration of gait
   - Self- isolation from the flock/herd or pen mates
   - Lack of ruminating
   - Elevated respiration
   - Fear
   - Anxiety

In order to eliminate or minimize behavioral stress in everyday living for sheep & goats, there should be adequate food, water, enough area to sleep and lay down and the ability to rest and ruminate. At Shone Farm we use handling and restraint methods which minimize fear and anxiety within the flock/herd and individual animals.
2) **Physical Stress:** Factors that affect or that may contribute to physical stress include availability of space, maintenance (safety, cleanliness), flooring, restraint (pen, chutes, head gates, halters) and injuries.

3) **Disease Stress:** This may be described as stress that results from the onset of and spread of illness or disease. The response of the animal’s immune system will determine if they will succumb to or survive an illness. If the immune system is compromised due to another stressor, the likelihood of survival is diminished.

4) **Thermal Stress:** Animals interact and react to heat in 4 different ways: Evaporation, Conduction, Convection and Radiation. When the animal’s heat gain becomes greater than its ability to create heat loss, the animal will store the increased heat in the form of increased body core temperature. A sheep/goat’s response to heat involves changes in behavior, performance, immediate environment and physiology. Heat stress can be kept to a minimum by creating an environment that can manage heat load, animal behavior and thermal stress and by observing sheep & goats often and noticing when there needs to be a change made to the environment. Sheep do not do well with sudden shifts in environmental temperatures (this often causes respiratory problems), therefore, shearing them after weather patterns are fairly stable is the preference at Shone Farm.

5) **Behavioral, Physiological and Performance responses to heat stress:** The initial response that sheep & goats have to heat is through behavior modification. They will seek out cooler areas and feeding, drinking, standing, lying, locomotive, aggressive and elimination habits (behavior) will change. Grazing and browsing patterns in sheep & goats are influenced by heat, therefore, those kept on pasture may exhibit nocturnal patterns. There will be minimal grazing/browsing during the hot, daytime hours and more during dusk and dawn. During the day, it is common for them to be idle and/or laying in the shade. This does not mean an animal is in distress. Consumption of water by sheep & goats will increase in a hot environment and this will aid in heat loss via sweating and respiration. An increased core temperature will result in a higher rectal temperature and respiration rate (allowing more evaporative heat loss via upper respiratory
passages). An animal that is unable to lower and regulate its temperature overnight is considered a critical situation. An overheated animal will have limited productivity ability and because the heat will continue to increase, the animal will suffer from stress and maybe even death. Reducing an animal’s Dry Matter Intake (DMI) will decrease its core body temperature, therefore, if water intake isn’t sufficient enough to lower temperature, sheep will reduce food intake.
Sheep & Goats

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Livestock Guidelines
Management Guidelines
Sheep & Goats

Sheep & Goats

Rough Draft: Attention Leonard Diggs

Company profile

- Sheep & Goats are raised at Shone Farm to assist and enhance the value of a student’s experience by helping to facilitate the practical portion of classes as well as for customer sales and processing for sales.

- The number of animals kept on the premises is based on class needs, customer needs and the needs of Shone Farm regarding reproduction and processing for consumption and sales.

- Shone Farm has approximately 100 acres of grazing land for Sheep and other livestock: Irrigated acres = 60 and Dry acres = 40