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GOAT CLIENT HANDOUT 2023

Feeding:

- **Colostrum** - A kid should receive 1oz of colostrum per pound of body weight 3 times within the first 24 hours of life. Colostrum should be clean and high quality.

- **Milk** – Goat kids naturally nurse from their mothers many times throughout the day, and if the doe allows, may nurse for up to a year. If rejected by its mother or orphaned or sold at a young age, you may find yourself in need of bottle feeding the kids with milk or milk replacer. For larger goat breeds, by one week of age, the kid should be fed 1 liter of milk per day. By 3 weeks of age, they should be drinking 1.5-2 liters of milk per day. This should be distributed throughout 3-4 feedings per day. Grass, hay, and water can be offered free choice while bottle feeding, and the kid can be weaned from milk at 8-12 weeks of age.

- **Grain** – Generally speaking, unless the goat is a production animal (meat, milk, kids, etc), grain should be limited in its diet. Goats that are considered pets, with the goal of keeping them around for a long time, should not be receiving grain. Due to the high level of protein in grain, crystals can form in the urinary tract and cause a urethral blockage. In males, this is often a surgical emergency and could result in death. Too much grain, “grain overload”, is commonly caused by goats breaking into the feed room and gorging on grain. This leads to ruminal acidosis and ruminal bloat, and is often a medical emergency as well. Grain can be provided to goats being raised for slaughter and for females who are nursing. Nursing does can receive 1 pound of grain twice daily to maintain body condition. If it is indeed necessary to provide grain to your goats make sure that the storage room where the grain is located is secure.

- **Hay** - Goats are ruminants which require large quantities of roughage, in the form of grass hay, in their diets. Goats should be fed free choice hay. They should never run out. Timothy and orchard grass are good grass varieties of hay for goats. The first large stomach, the rumen, requires long stem hay for fiber source to keep the microbial population happy and to keep the pH in the stomach from getting too low (acidic). Alfalfa is not recommended as a feedstuff to be fed to goats, except high milk producing does, as it is too high in protein and calcium for the normal goat. Hay should be fed in a feeder that prevents loose hay from falling on the ground and being stepped/defecated on. This will help lessen the GI parasite load.

- **Treats** – Goats, because of the rumen, are sensitive to simple carbohydrates. Goat treats should be kept to a minimum. Goats should never be fed simple carbs like bread and crackers. Simple carbohydrates can lead to acidosis and bloat, which can be severe.

Minerals:

- **Selenium** – The Northeast US is deficient in Selenium, and a lack of sufficient Selenium can lead to a condition called “White Muscle Disease”, which affects the heart, diaphragm, and skeletal muscles of the animal. Signs of White Muscle Disease include being down, difficulty rising, a stiff-legged gait, and death. To prevent this from occurring, goats should always have access to loose minerals or a mineral block that has “Selenium” listed as one of its ingredients. An injectable called “Bo-Se” can also be used to supplement selenium.



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● **Sodium Bicarb** – It is important to keep a goat’s rumen at the appropriate pH level. If the rumen becomes too acidic, often from too much grain or disruption of normal gut flora, the goat can get ruminal acidosis. To prevent ruminal acidosis from occurring, free choice baking soda (sodium bicarbonate) can be left out for the goats to consume as needed. This will aid in raising the pH back to an appropriate level.

Vaccines:

- **CD+T** - This vaccine covers for **Tetanus (Clostridial Tetani)** and **Enterotoxemia (Clostridial Perfringens)**.
- This vaccine should be given at 3 months of age and booster given at 4 months. It is then repeated yearly thereafter.
- **Rabies** - A rabies vaccine should be given at 3 months and repeated yearly thereafter.

Hoof Care: Depending on the activity levels of the goats and natural wear of the hooves, a goat may need their hooves trimmed every 2-4 months. During a hoof trim, the toe is shortened, the overgrown walls of the hoof are removed, additionally the sole may need to be pared down. With proper instruction, owners can learn to trim their goats’ hooves, but we are happy to provide that service as well! This allows us to take a comprehensive look at the health of the hooves and detect any issues. Lameness is often localized to the hoof, so proper care is important.

Housing: Goats are natural climbers and very much enjoy investigating their environment. Their housing should involve a secure shelter, as well as room to roam around outside.

● **Shelter** – A roof with at least 3 walls should be provided for goats to protect them from the elements. Straw is a good bedding source, as it can maintain heat throughout the winters. Straw is also the preferred bedding material if your goat happens to undergo some sort of surgery (castration, disbudding/dehorning, c-section, etc). Sawdust and wood shavings are other common bedding materials. Make sure to keep the floor of the shelter clean and dry.

● **Pen** – Goats should have plenty of space to roam around. They enjoy jumping and climbing, so adding in different types of “obstacle courses”, especially at various heights, can help to keep your goat mentally stimulated. Proper fencing is also important. Whether woven wire, electric, or wooden boards are used, make sure that they are secure and there are no spots where the goat could get a leg or head caught.

Parasites/Deworming:

Key concepts: “Keep the feed and the feet separate”

● **Barber pole worms** – Medically referred to as *Haemonchus contortus*, the “Barber pole worm” is a GI parasite that commonly affects goats. When picked up from the environment, the worm makes its way to the abomasum (the true stomach), and sucks the animal’s blood, causing them to become anemic. With a heavy enough worm burden, severe anemia can occur, leading to weakness, the inability to rise, and sometimes death. Regularly checking the goat’s mucous membrane color on the inner eyelid and comparing it to the FAMACHA scores is crucial. A dark pink to pink color is ideal (scores 1-2). Light pink is borderline (score 3). Very light pink and white (scores 4-5) are dangerous levels and must seek veterinary attention immediately. A common dewormer used to treat this condition is Cydectin.



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● **Coccidia** – If a young goat has diarrhea, it is Coccidia until proven otherwise. Coccidia is a protozoal parasite that causes poor growth, weight loss, and diarrhea/loss of normal fecal pellet formation. Medicated feeds which contain coccidiostats can aid in preventing clinical signs. However, if diarrhea occurs, it is important to submit a fecal sample so we can determine if it truly is Coccidia. Common treatments used are: Albon or Corid.

● **Tapeworms** – Tapeworms are often the parasites visibly seen in the goat's feces. They commonly look like moving grains of rice. Goats with tapeworms are typically young in age, and may show poor growth or have a pot-bellied appearance. With a heavy enough burden, these parasites can cause constipation or complete obstruction, causing severe abdominal pain. Common dewormers used: fenbendazole or albendazole

● **Lice** – Lice are a very common external parasite that goats are affected by. The first sign an owner may notice is general itchiness - goats may be seen rubbing their necks, shoulders, and back on the fence or using their horns to scratch. Patches of hair loss may also be seen. Although small, if one looks closely at these itchy goats, lice can be seen moving on the goat's skin and hair. It is worth noting, lice are species specific, so humans are not able to contract goat lice. Common treatments used: Ultra-Boss and Ivermectin.

Dehorning:

Dehorning (disbudding) should be done at a very young age in goats. The horn base is very wide in goats and grows very quickly. The recommended age for disbudding is **5-10 days old**. Much older than this, the procedure requires much more extensive techniques to remove the horns, and the wound will typically double in size, with much more pain and risk of infection, and prolonged healing time. At several days old, we are usually able to do a simple disbudding. This procedure leaves a (relatively) small wound which most goat kids tolerate well and heal from quickly. When we dehorn, we use heavy sedation/anesthesia. We spray the wound with an antiseptic spray. Depending on the size of the wound, we may prescribe antibiotics and pain medication.

Aftercare: Most kids that have a simple disbudding done recover within an hour from anesthesia, and quickly return to normal behavior and eating. There may be a day or two that they are head shy/less aggressively eating, but by the third day they should be almost back to normal behavior. For all dehorning procedures, we recommend using straw or hay for bedding material, because sawdust and shavings can cling to the disbudding site and may cause infections. If the procedure is more extensive, we may follow up with antibiotics and pain medication on a case by case basis. Watch the site for signs of infection: heat, swelling, foul yellow discharge, lack of appetite, etc.

Castration/Spaying:

Castration in goats should be delayed until they are 5-6 months old, to help prevent formation of urinary calculi. At this age, they will be too big to band, and surgery is recommended. We provide heavy sedation/anesthesia, perform a surgical castration, and place dissolvable stitches around the testicular cords. The surgery site is left open for drainage. Aftercare includes reducing exposure to flies, wound spray, and bedding with long stem hay or straw for 2 weeks. Monitor the castration site, as it is left open to heal from the inside out. Watch for signs of infection such as excessive swelling, foul discharge, reluctance to walk, and reduced appetite. Often, we will give a penicillin injection at the time of the procedure, and we always provide a tetanus vaccine. We often prescribe pain medication for several days afterwards. They should be kept inside in a small stall/pen for 24 hours to encourage clotting. After that, movement should be encouraged to allow for drainage.



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Special Considerations for Male Goats:

Feeding recommendations for goats with special considerations for male goats.

- **Forages:** Goats require large quantities of roughage in the form of grass hay. Timothy and orchard grass are good grass types of hay for goats. The first large stomach, the rumen, requires long stem hay for fiber source to keep the microbial population happy and to keep the pH in the stomach from getting too low (acidic). Most of the goat's diet should be in the form of dry grass hay. They will also do well with browsing and grazing in the warming months. Alfalfa is not recommended as a feedstuff for goats due to its higher nutrient content and calcium content. Goats, because of the rumen, are sensitive to simple carbohydrates. Goat treats should be kept to a minimum. Goats should never be fed simple carbs like bread and crackers. Simple carbohydrates can lead to acidosis and bloat, which can be severe.

- **No Grain:** Grain feeding is only recommended if the goats fall into certain categories: Growing (the first 9 or so months of life), pregnant, lactating, and geriatric/thin due to old age. Grain can quickly cause obesity or bloat in goats but more importantly, can cause urinary calculi (stones) which cause urinary obstruction. This is a common and life-threatening condition we see in male goats. When grain feeding is necessary, no more than one percent of body weight should be fed. For example, a 20lb goat should get no more than 0.2lb grain, which is roughly $\frac{1}{4}$ cup daily.

Male goats:

Male goats, especially castrated males are at increased risk of urinary outflow obstruction (stones). The reason for this is that the urethra (urine outflow tract) is extremely narrow, long, and not easily expandable. A solid calculi of only 2mm diameter is enough to cause a physical outflow obstruction which is referred to as a blocked goat. This is a very frustrating condition for owners, which is difficult to manage, and often requires extensive, costly surgery with limited success. The best tactic is to try to prevent these stones from forming through proper diet management. Calcium to phosphorus ratio in the diet is important, and ideally should be 2.5:1. Feeding concentrated feeds is the major factor affecting this ratio and the most important contributing factor in urine stone formation. We recommend feeding young male goats pelleted feeds containing ammonium chloride, or supplementing ammonium chloride in the water source (1tsp per 2 gal water per goat per day). This product lowers the pH of the urine and helps prevent some stones. Keep the young males on the pelleted grains only while they are growing, and then stop grain feeding. As long as good forages (grass and hay) are available, they should be able to maintain body weight. If you feel your male goat needs to put on some body condition, judicious amounts of cracked corn will be an added energy (carbohydrate) source without added proteins found in regular pelleted grains.

Delayed castration: Another tactic to try to prevent urinary blockage is to delay castration in males to 5-6 months old. The effect of testosterone works to widen the urethra somewhat, making it more likely that small stones can pass.

Castrating at this age and level of development requires a surgical castration, and owners must be aware that the males will be fertile for a brief time before they are castrated.

- **Minerals:**

Minerals should be supplemented to balance the diet and help keep the calcium:phosphorus ratio high. We recommend a loose goat-specific mineral that contains selenium to be made available free choice. The selenium is very important, because it must be supplemented in the northeast, because it is not found in grass or hay in this region.



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● **Bicarb:**

Sodium bicarbonate (baking soda) can be made available free choice as an antacid for goats, to help prevent ruminal acidosis and bloat.

Before Purchasing a Goat - The 4 Diseases to Look Out For:

1. Caseous Lymphadenitis: CLA is a contagious bacterial disease that affects goats. The most characteristic clinical sign is enlarged abscessed lymph nodes, often found on the head or neck. The material in these abscesses is highly contagious when drained, and is often spread from animal to animal via clippers, milking stands, feeders, scratching posts, etc. When an abscess is identified, although not curative, it is best to drain and clean under controlled conditions. If an active CLA abscess is present, that animal may be denied inter-state travel or admittance to a show. To prevent exposure to your herd, it is best to test any new animals for the presence of CLA.

2. Caprine Arthritis Encephalitis: CAE is a chronic and progressive viral disease that exhibits most commonly in goats as arthritis, but also pneumonia, neurologic dysfunction, hardening of the udder, decreased milk production, and weight loss. Transmission can occur from close contact with infected animals and via kids ingesting milk and colostrum from their infected dam. This disease has no cure. If endemic in the herd, removing kids from their dams immediately after birth and feeding them heat-treated goat colostrum while keeping them separated can help prevent exposure to the young stock. Testing before acquiring new animals is key to preventing this from affecting your herd.

3. Foot Rot: Foot rot is a condition that affects the hooves of ruminants. The bacterial pathogen can be introduced into the foot via trauma or puncture wounds, and is most commonly seen during the warmer, rainy months. Lameness is often the first sign noticed, with the goat becoming so painful that they walk on their knees or refuse to get up. Taking a closer look at the hoof may reveal a swollen coronary band, pus at the coronary band and between the toes, a distinctive necrotic odor, or separation of the hoof from the foot itself. Treatment is accomplished by foot wraps, antibiotics, and NSAIDs. Because foot rot is very contagious, identification in one animal warrants examination of the rest of the herd, and if endemic, regular use of footbaths may be necessary for control.

4. Parasite Resistance: Parasites are the number one killer of goats. When a goat presents with diarrhea, weight loss, anemia, bottle jaw, poor hair coat, failure to thrive, and more, gastrointestinal parasites are often a common culprit. Submitting fecal samples prior to deworming is recommended to determine if parasites are present and if at high enough numbers to be causing issues. To combat a high parasite load, dewormers are often prescribed, but over time, resistance to these medications can occur, especially if not used appropriately. And once loaded with parasites that are now resistant to our common dewormers, treatment and control becomes a more serious challenge. A goat with a chronically high parasite load risks bringing resistant parasites onto the farm. So when purchasing any new goats, it is important to submit fecal samples and quarantine the newcomers.