



Gastrointestinal Parasite Management in Florida-Humid Subtropical Climates

Brittany N. Diehl

Internal GI parasite management, primarily of *Haemonchus contortus* (barber pole worm), is the most common management challenge for small ruminant producers. Challenges with these parasites heighten in the warmer, more humid months of the year. These parasites thrive in hot, humid climates. It is our goal to manage these parasites to avoid further development of resistance to dewormers and prolong the efficacy of the dewormers we do have.

Sheep and goats will always have some level of parasite burden, as animals raised in confinement or on pasture-based systems are continuously being exposed to GI parasites. There are certain times in an animal's life that they may become more sensitive to the burden of parasites and intervention may be necessary.

Examples of this include:

- 1) Young lambs/kids with stressed or weakened immune systems.
 - a. At the time of weaning or when concurrent disease may be present.
- 2) Periparturient (around the time of birth) rise in ewes/does.
 - a. This weakened immunity results in a release of parasites in the environment and on pasture.

3) Certain breeds or certain animals within a breed may be more resistant to GI parasites than others.

- a. Those that are less resistant are likely to contribute to the majority of illness associated with parasitism and cause an increased amount of pasture parasite contamination.
- b. In most herds/flocks, 20% of the animals carry approximately 70-80% of the parasite burden.

Haemonchus contortus has a lifecycle of approximately 21 days. The lifecycle begins with the larvae in the infective stage (L3) of development. Optimal conditions for the L3 larvae is in warm, wet conditions (i.e., Florida for much of the year). The L3 larvae can survive on pasture for up to 90-180 days depending on weather conditions.

Having a strategy in place to recognize and **prevent** parasitic infections is the key.

- 1) **Regular assessment** of animals
 - a. Develop a schedule – in the hot, humid months (spring, summer) this could be as often as every 2 weeks.
- 2) Performing **individual FAMACHA scoring** on each animal in the herd/flock. Record individual animals' scores.
- 3) Perform **fecal egg counts (FEC)** on animals with elevated FAMACHA scores (3-5 score). Record individual animals' FEC.



4) Only deworm those that need it – not the entire herd/flock.

a. Parameters used for deworming should be established based on the animals in your herd/flock, specifically.

b. Typically, advise using a system which combines FAMACHA score and FEC to determine who needs to be dewormed.

* Use only one class of dewormer to treat animals. The practice of using multiple dewormers is not recommended in general circumstances. In cases where multiple dewormers are to be utilized, please contact your veterinarian.

c. Using the method of selective, targeted deworming allows for refugia to be maintained. Refugia is the population of parasitic worms that are left untreated and are as a result susceptible to dewormers. This process allows for the sensitive parasite population to be maintained and thus slow the resistance process.

5) Utilize data collected (FAMACHA scores and FEC) over time to aid in culling decisions.

a. Animals who consistently have elevated FAMACHA scores and FEC (i.e., high parasite burden) should be culled from the herd/flock.

Proper dewormer assessment allows you to utilize an effective dewormer against the GI parasites on your farm.

- Once you know who to treat based on FAMACHA scores and FEC data, using an effective dewormer is important to prevent resistance and aid in effective treatment of parasitized animals.
- There are a few ways to determine which dewormer is effective on your farm.

1) The DrenchRite® Assay

a. Used to detect drug resistance to *Haemonchus contortus* parasites in your flock/herd. Visit <https://www.wormx.info> for more information.

2) A fecal egg count reduction test (FECRT)

a. Performed by collecting fecal samples from animals, deworming those animals with one class of dewormer, and then taking another fecal sample from those animals 10-14 days later. The measurement of reduction between the two samples allows you to determine the effectiveness of your dewormer.

There are a number of other management strategies that can be used to mitigate the internal parasite population on your farm. Effective pasture rotation techniques are another important strategy. Allowing pasture to rest stops further parasite deposition and allows for new growth of forage, which lowers the risk of infective larvae being consumed by your sheep/goats. Using good rotational grazing techniques and selective, targeted deworming strategies provide significant impact on decreasing the parasite burden in your herd/flock.

Dr. Brittany Diehl is a Resident at the Food Animal Reproduction & Medicine Service at the UF College of Veterinary Medicine..

Contact them by email at: bn.diehl@ufl.edu



Lambing and Kidding Season

Cassidy Dossin

With spring around the corner, sheep and goat producers are anxious for newborns to hit the ground. For many small ruminant producers, lambing and kidding season is the most anticipated time of the year. Not only it is exciting for new lambs and kids to join the farm, but the success of lambing and kidding is imperative for the financial practicability of the operation. To ensure a successful season and profitable year, small ruminant producers should be prepared, know what is normal or abnormal, and know when it is necessary to interfere to ensure survival of the dam and newborn.

Have a Plan

The key to lambing and kidding preparations is having a plan. To start, it is best to have a relationship with a veterinarian early on, so the vet can learn about your operation and animal needs, and be available when you call them for urgent assistance, which is most likely to occur during the lambing and kidding season. In case of emergency, have the number of your vet within reach.

You will also want to have some equipment on hand. Make sure you are considering this before the start of the season, so necessary equipment can be tested or bought before it is needed. In general, you'll want to have a stock of gloves, antimicrobial soap, halters, towels, lube, a head snare, syringes and needles, and other supplies. Newborn care and processing may require bottles, heat lamps, an esophageal tube, iodine, ear tags, an elastrator with bands, and more. However, this is not an exhaustive list. Consult your veterinarian for guidance to build your inventory of equipment.

Many sheep and goat producers opt to place the female and her newborn in a small pen by themselves, called a jug, to bond for a few days. Have these jugs set up and ready to go as you enter the lambing and kidding season; they should be about 4 feet by 4 feet or 5 feet by 5 feet.



Small Ruminant Update



Impending Lambing/Kidding

As a ewe or doe gets closer to when she will give birth, she will likely exhibit several signs to suggest newborns are coming soon. However, there is significant variation in these behaviors between flocks, herds, and even individuals in the same farm. Young and first-time females will likely be more nervous and restless as they get closer to birth. Keep the closest eye on these females as they are more susceptible to dystocia (abnormal or difficult birth), and may need assistance.

Typically, the earliest sign will be the udder beginning to fill with colostrum about a month before parturition. Colostrum is the first milk, containing antibodies that help to protect newborn lambs and kids, and it is essential for newborn development.

Several hours before lambing or kidding, the ewe or doe may become restless, isolate herself from the rest of the group, and refuse feed. The muscles around the hips will begin to relax and appear as if they are sinking. The vulva will swell and may change color from a light pink to a dark pink in lighter skinned animals. The ewe or doe may paw at the ground and appear to make a nest. She may make soft, short vocalizations different from the normal cry of a sheep or goat. At this point, the udder will be full and tight.

Just before birth, mucus will be discharged from the vulva. The water bag protruding from the vulva will be the first sign the female is in labor. However, occasionally the water bag will break and all you will see is fluid, which can be easy to miss.

Once parturition has started, allow the ewe or doe to complete the process undisturbed in the location she has chosen until all lambs and kids are born in the case of multiple births. Do not interrupt the process by moving or disturbing her unless necessary.



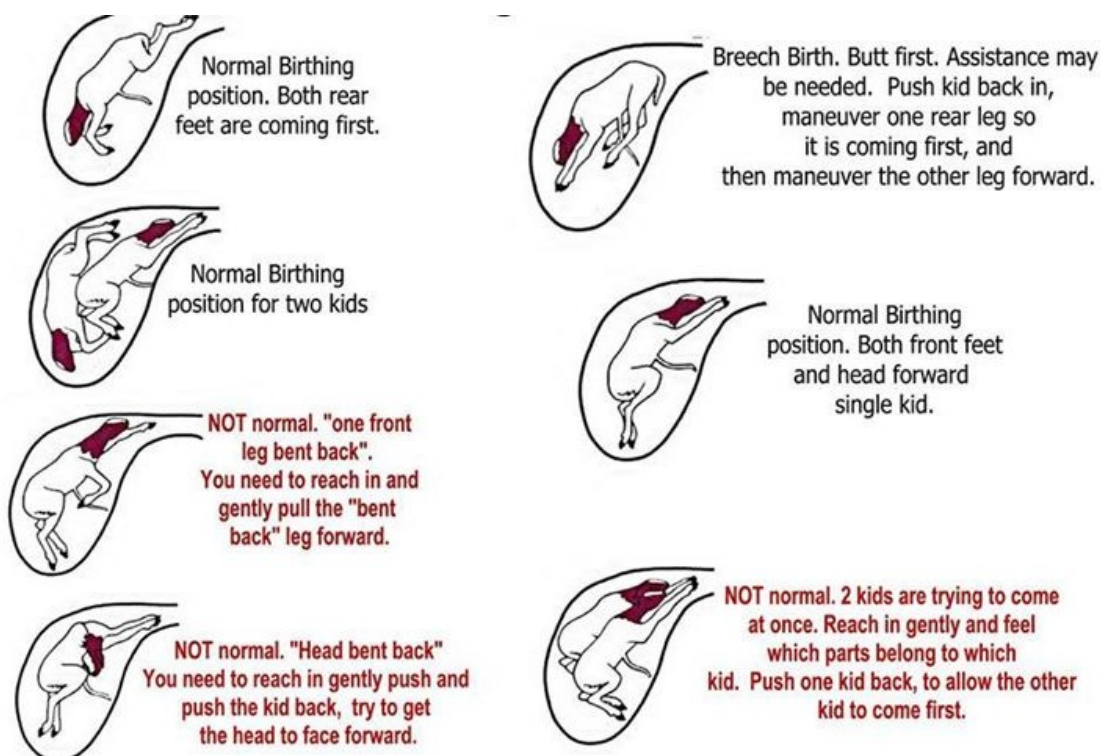
Small Ruminant Update



Normal vs. Abnormal Parturition

Producers should know the signs of a normal and abnormal birth so that steps to assist the female can proceed quickly if the process goes wrong, giving the best chance of survival to the dam and newborn. The front feet and nose of the newborn should appear from the vulva within 30 minutes after the start of contractions and arrival of the water bag. Following the appearance of the feet, delivery should proceed relatively quickly. Intervention may be needed if no progress has been made for 30 minutes. The fluids surrounding the newborn during delivery should be clear or have a slightly yellow tint; a dark yellow or brown fluid indicates a stressful delivery.

The birthing progress could stop for a variety of reasons, including an exhausted female, the lamb or kid may be locked by the female's pelvis, one or more legs is back, the head is back, tangled twins or triplets, or a breech (backward delivery). If there is a problem, use an OB glove and gently palpate to identify the issue. Use gentle and slow movements to avoid any unnecessary stress or damage. Often, the female can be assisted by gently adjusting the lamb or kid's position and slowly but firmly pulling the front legs down and out. The vet should be contacted if you are not able or comfortable to assist further or if the cervix is not dilated.



Lamb and Kid Processing

Once the lambs and kids are born, the mother should begin licking the newborn and encouraging them to stand and nurse. After the dam has had the chance to rest briefly, the udder and teats should be checked to ensure she has milk, and the navel of the newborns should be dipped in an iodine solution to prevent infection.

Lambs and kids should be processed quickly, between 24 and 48 hours after birth, to limit stress. Non-breeding males should be castrated, and wool-type sheep should have their tails docked (an important practice for lifelong hygiene). Identification early on is critical for proper management. Ear-tagging should be a part of the newborn processing and proper records should be kept.

Cassidy Dossin is the Agriculture & Natural Resources Agent at Clay County.
Contact her at (904) 284-6355 or by email: cdossin@ufl.edu

Small Ruminant Update



How Much Space Does a Doe Need?

Izabella Toledo

Goats are active animals and like to explore different types of environments. It is important to not overstock pastures and allow the renew of forages to decrease the presence of parasites. To produce 70% of your herd's forage, you will need an acre for 1-3 goats (3-9 goats/hectare). The exact stocking density is variable and depends on the forage yield, soil, climate, season, and length of forage growth. Each goat needs from 4.4 to 7.7lbs (2-3.5kg) of dry matter per day.



Minimum Space Requirements

Goats need enough space to rest, exercise, explore and feed in comfort.

A dry, well ventilated enclosed area to lie down, enough feeding stations and a varied environment to explore are important for health and welfare needs of goats!

Overall, guidelines for minimum space requirements for does are around 16 sq. ft. (1.5 m²) per doe for resting in the barn plus 25–50 sq. ft. (2.3–4.6 m²) per doe in an activity area.

Feeding stations measuring 16 inches (40 cm) are recommended for each doe, with more than one feeding place per head. Space may vary according to breed and life stage requirements.

Below is a table that shows the range of recommended space allowances per head.

Space Requirements for Does	
Barn	16-32 sq. ft (1.5- 3 m ²)
Activity Area	25-50 sq. ft. (2.3-4.6 m ²)
Feed Rack	16-55 inches (40-140 cm)
Pasture	0.3+ acre (0.1+ hectare)

*It is important to understand that the space requirements for kids and bucks are not the same as the ones described for does.

Dr. Izabella Toledo is the Dairy Regional Specialized Agent of the Northeast District

Contact her at: izatol@ufl.edu

Small Ruminant Update



Recipe Corner

Goat Stew



Ingredients

- 1lb (500g) of goat meet with bones cut into large chunks
- 1/4 cup vinegar
- 1/4 soy sauce
- 4 cloves of garlic, crushed
- 1tablespoon of vegetable oil
- 1 onion, chopped
- 1 red bell pepper, cut into 1 inch squares
- 1 cup of tomato sauce
- 2 cups of beef stock

- 1 potato and 2 carrots, peeled and cut into large chunks
- 1/4 cup of green peas
- 1/2 teaspoon of salt
- 1/4 teaspoon of pepper
- 1 pinch of cayenne pepper

Instructions

1. Mix goat meat with vinegar, soy sauce, and garlic in a large bowl. Cover and refrigerate. For best flavor, marinate at least 6 hours.
2. Remove meat from marinate and pat dry with paper towels; reserve marinade and garlic separately.
3. Heat oil in a large por over medium-high heat and cook meat in hot oil until browned (10-15 min). Transfer meat to a plate. Reserve drippings in the pot.
4. Add onion, bell pepper, and reserved garlic to drippings. Cook and stir over medium heat until onion is translucent (about 5 min). Pour in tomato sauce and cook until slightly thickened (about 5 min).
5. Return meat to the sauce. Pour in beef stock and reserved marinade. Bring to a boil. Reduce heat to low, cover the pot, and simmer until meat is partially tender (30-40 min).
6. Stir in potato, carrots, and peas. Season with salt, black and cayenne peppers. Simmer until goat meat is very tender and potato and carrots are cooked through (20-30 min).
7. Enjoy!



Upcoming Events

UF/IFAS EXTENSION
FAMACHA TRAINING
FRIDAY, APRIL 14TH
9AM - 12PM

**GET CERTIFIED
AND YOUR OWN
FAMACHA CARD!**



 **UF SHEEP UNIT**
2250 Shealy Dr.
Gainesville, FL 32608

REGISTER ONLINE:

<https://tinyurl.com/famachaUFIFAS>

\$25 per person



The **FAMACHA score** is a method of measuring anemia in small ruminants infected with Barber Pole Worms. Scores can be used to inform de-worming protocols and prevent parasitic resistance from developing in herds and flocks. This course will include classroom instruction, test for certification, and hands-on training and practice with live animals.

Registration includes:

- classroom instruction and certification exam
- hands-on training
- Q&A session
- FAMACHA certification and card

Contact Dr. Izabella Toledo with any questions at izatoleufl.edu or (386) 294-1279.



Bring home an official FAMACHA card to use on your operation.

ALL SHEEP AND GOAT PRODUCERS NEED THIS TRAINING!

UF | IFAS Extension
UNIVERSITY of FLORIDA



**NORTH FLORIDA
LIVESTOCK AGENTS GROUP**



An Equal Opportunity Institution. The University of Florida is committed to providing universal access to all of our events. For disability accommodations such as sign language interpreters and listening devices, please contact us at least 1 week in advance. Advance notice is necessary to arrange for some accessibility needs.

Small Ruminant Update



Upcoming Events

SMALL RUMINANT CONNECTIONS *DINNER & DISCUSSION*

Thursday, May 18th

6:00 - 7:00pm

MEET • GREET • EAT

 AT THE DUVAL
COUNTY
EXTENSION
OFFICE

1010 N McDuff Ave
Jacksonville, FL 32254

Sheep and goat producers across North Florida are invited for an evening of food, fellowship, and education. Come learn, eat, and meet producers like you!

FOR FREE!

UF | IFAS Extension
UNIVERSITY of FLORIDA

An Equal Opportunity Institution. The University of Florida is committed to providing universal access to all of our events. For disability accommodations such as sign language interpreters and listening devices, please contact us at least 1 week in advance. Advance notice is necessary to arrange for some accessibility needs.



The UF Small Ruminant Update Newsletter is published quarterly by the IFAS/ UF Extension, as an educational and informational service. Please address any questions to Izabella Toledo, the Dairy Regional Specialized Agent of the Northeast District and Editor of the Small Ruminant Update Newsletter. E-mail: izatol@ufl.edu