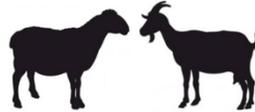


Small Ruminant Update



Quarterly Newsletter

Vol. 1 No.2

Summer 2021

Reducing the Use of Antiparasitic Drugs with FAMACHA© System

Lorena F. Carmona and Diwakar Vyas

Gastrointestinal parasites are one of the major challenges faced every day by producers. Internal parasites can affect sheep performance and welfare, and in severe cases result in death of the animal. For many years, farmers have tried to combat this problem using commercial antiparasitic drugs, however, the overuse of these products makes them less effective as parasites create resistance against these drugs.

For improving the efficacy of antiparasitic drugs, we should only treat animals that need it instead of treating the entire flock. Selective deworming lowers the drug use and impedes the development of drug resistant gastrointestinal parasites. The use of FAMACHA© systems allows small ruminant producers to make deworming decisions, especially against barber pole worm (*Haemonchus contortus*) (Figure 1). FAMACHA© system stands out because of its simplicity and minimal requirement of materials.



Figure 1. Barber pole worm (Bordelands Research Institute)

Barber pole worm is the most economically important parasite affecting small ruminants in tropical and temperate farming areas and is the most common cause of anemia during grazing season. These worms cause laceration in the animal's stomach (abomasum) and have ability to suck up to 0.03 ml of blood per day, which induces rapid anemia and eventually the death of the animal.

FAMACHA © card matches the ocular mucus membranes color with the laminated color chart in the card (Figure 2 and 3) showing 5 categories from Level 1 “no anemic” to level 5 “severe anemic”. Animals scoring 1 or 2

should not be treated, with the exception if there are other signs of parasite infestation (visible worms, diarrhea, bottle jaw, low body condition, dull coat, and lethargy). Animals with score 3 need not need to be dewormed, unless, they are lamb/kid, the herd is in poor body condition, the health of the herd is concerning or more than 10% of the animals have FAMACHA© 4 or 5. Animals with score 4 or 5 should always be treated. FAMACHA© system can be performed every 2 weeks or 1 per month, depending on the season and the number of animals with severe anemia.

For more information about how to obtain the FAMACHA © card, please visit: <https://www.wormx.info/>



Figure 1. FAMACHA© card

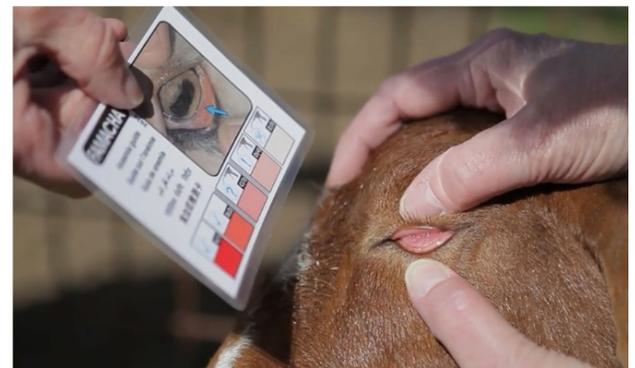


Figure 2. Using FAMACHA © card (The University of Rhode Island)

Diwakar Vyas is an Assistant Professor at the Department of Animal Sciences.

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Facilities to Meet your Small Ruminant Production Needs

Paulette Tomlinson

Many times, we make animal purchases without really thinking about what we need in terms of facilities! Owning sheep or goats comes with not only the responsibility of making sure they have enough room to roam or grass and browse to eat, but also facilities to manage and handle the animals.

This article is not going to answer all your questions about facilities to build or obtain, but rather to provide some “things” to think about when deciding either to purchase animals or planning for future expansion.

Minimum Facility Recommendations

Perimeter fence

This seems laughable that anyone would buy animals and not have a perimeter fence to at least keep them on their own property, but this is a minimum! Make sure it's in good repair - no escapes!

Small coral or holding pen

You will want to be able to separate animals or hold all the animals to keep a check on their health, primarily. But there could be times you will need to provide extra feed supplementation and having a small area that allows the animals to mingle with you can make them much calmer when needing to provide health treatments.

Lane and/or chute

This may not be absolutely necessary if you only have a few sheep or goats, but it can certainly make life a lot easier. Working the animals through a lane allows easier access to each animal without you or them getting hurt. A lane could be as simple as using a panel to tighten up a space along a straight span of fence.

Types of Operations

Minimum requirements are great to understand where to begin, however there is one more thing to consider -what type of operation do you have or plan to have? It is critical to knowing what facilities you might require depending on your type of operation.

For example: dairy vs typical production

In this situation a dairy will require extra equipment, a room where the milk can be stored, not to mention a place that is clean and secure for the goats or sheep to be milked (a parlor). Those are many more requirements than the typical operation of producing kids or lambs for sale. This type of operation will still require the minimum, but you may also want an area set aside for the females to kid or lamb in. You may provide separate pens for each female and her offspring and weaning pens.

You can make it as simple or complex as you like in either operation but the more productive, typically the more input that will be required for facilities.

A Few More Considerations

Shelter is probably one of the first things we do consider with any livestock operation. Everyone thinks about having a barn on their farm! But a shelter does not have to be a barn! For small ruminants there are a multitude of possibilities! A sheet of tin leaning up against a tree and a goat can find refuge from the rain. But it may not last if the wind blows!

When considering shelter for small ruminants think about your long-term goals of your operation and where you want animals located in regard to other permanent structures like your house. Just like in the previous example you might need to leave some room for expansion if your operation grows or if other production opportunities arise.



*From
simple to
complex
structures*

Space Requirements

Goats and sheep have basically the same space requirements since they are obviously similar in size. The table below provides information for sheep, but it can be used for goats as well.

Recommended housing space (square feet) for sheep and lambs

	Dirt lot	Open shed	Confinement (dirt floor)	Confinement (slatted floors)
Bred ewe	20	8	12-16	8-10
Ewe with lambs	25	12	16-20	10-12
Ram	20	8	20-30	14-20
Feeder lamb	15-20	6	8-10	4-6

Source: Midwest Plan Service, Sheep Housing and Equipment Handbook, 1982

These are the minimum requirements; you can always have more space if you have money and land available!

Paulette Tomlinson is the Livestock and Forage Agent at Columbia County. Contact her at (386) 758-1030 ext. 1503 or by email: apt@ufl.edu

Goat Meat: Nutrition Facts & Food Safety

Annie Sheldon Wallau

Goat meat is a versatile lean red meat that can be used as a healthy alternative in a variety of recipes. It is naturally lean and lower in calories, fat, and cholesterol than beef and other proteins. A 3-ounce serving of cooked, roasted goat meat contains 122 calories, 23 grams protein, and 2.6 grams fat. Goat meat is naturally high in HDL cholesterol (the good cholesterol) and low in LDL cholesterol (the bad kind of cholesterol).

Kid meat lends itself to all recipes for lamb: chops, leg or shoulder, crown roasts, rack or saddle, and kebabs. Ground goat can be substituted in any recipe calling for ground beef or ground pork. The meat of adult goats is almost always braised (roasted or simmered with a small amount of liquid in a tightly covered pan) or stewed because of its relative toughness, but in stews, it is flavorful and tender.

Store ground goat meat only one or two days in the refrigerator before either cooking or freezing it. Roasts, steaks, and chops can be kept refrigerated three to five days before cooking. After cooking, keep refrigerated three to four days. For best quality, cooked meat and raw ground meat can be frozen and used within three to four months. Raw steaks, roasts, and chops can be kept frozen six to nine months. However, any frozen meat is safe indefinitely. Only the quality (flavor, texture, moistness) decreases during longer storage.

Cook ground goat meat to 160 °F (71.1 °C) as measured with a food thermometer. Cook all raw goat beef steaks, chops, and roasts to a minimum internal temperature of 145 °F (62.8 °C) as measured with a food thermometer before removing meat from the heat source. For safety and quality, allow meat to rest for at least three minutes before carving or consuming.

GOAT MEAT COMPARISON					
Goat meat is 50% – 65% lower in fat than similarly prepared beef but has a similar protein content. The USDA has also reported that saturated fat in cooked goat meat is 40% less than that of chicken, even with the skin removed.					
3 oz. cooked (Roasted)	Calories	Fat	Saturated Fat	Protein	Iron
Goat	122	2.6 g	0.8 g	23 g	3.3 mg
Beef	245	16 g	6.8 g	23 g	2.9 mg
Pork	310	24 g	8.7 g	21 g	2.7 mg
Lamb	235	16 g	7.3 g	22 g	1.4 mg
Chicken	120	3.5 g	1.1 g	21 g	1.5 mg
Source: USDA Handbook #8, 1989, Nutritive value foods, Home and Garden Bulletin #72, USDA, Washington DC, US. Government Printing Office 198					

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Managing Heat Stress in Small Ruminants

Izabella Toledo

Heat index, which include the measurement of temperature plus relative humidity is the most accurate way to determine heat stress during the hottest months of the year.

Goats and sheep tend to tolerate heat better than other livestock species; however, they still need extra care to be comfortable, healthy and productive during periods of extreme heat. Young and older animals as well as those with poor nutritional status and health issues are more susceptible to the effects of heat stress.

Water

Plenty of fresh, clean, cool water is essential to prevent heat stress in livestock. In periods of extreme heat and high humidity, it may be necessary to provide goats and sheep with extra fresh, clean, cool water. On average, small ruminants drink 1-2 gallons of water per day, but, during the hottest months of the year, they will drink about 20% more water, especially dairy breeds producing milk, and younger animals.

Shade

Access to shaded areas is another important factor to be considered when managing livestock during hot weather days! When small ruminants are outside, mature trees and/or simple shade structures made with shade cloths, mesh fabric, tarps,

canvas or sheet metal provide good shade and shelter. When animals are housed in barns, the key is to have good ventilation and air movement. Cooling systems consisted of fans and soakers are also recommended.

Handling, Nutrition, Productivity and Health

Avoid handling, working and transporting animals during the hottest times of the day during the summer. If needed, work with them during early morning or late evening.

Nutritional adjustments are also recommended during the summer. More nutrient-dense diets are usually preferred to decrease the amount of heat produced by the animals during digestion. Also, during the summer, sheep and goats will decrease grazing time during the hot times of the day and will graze mostly during early mornings and late evenings.

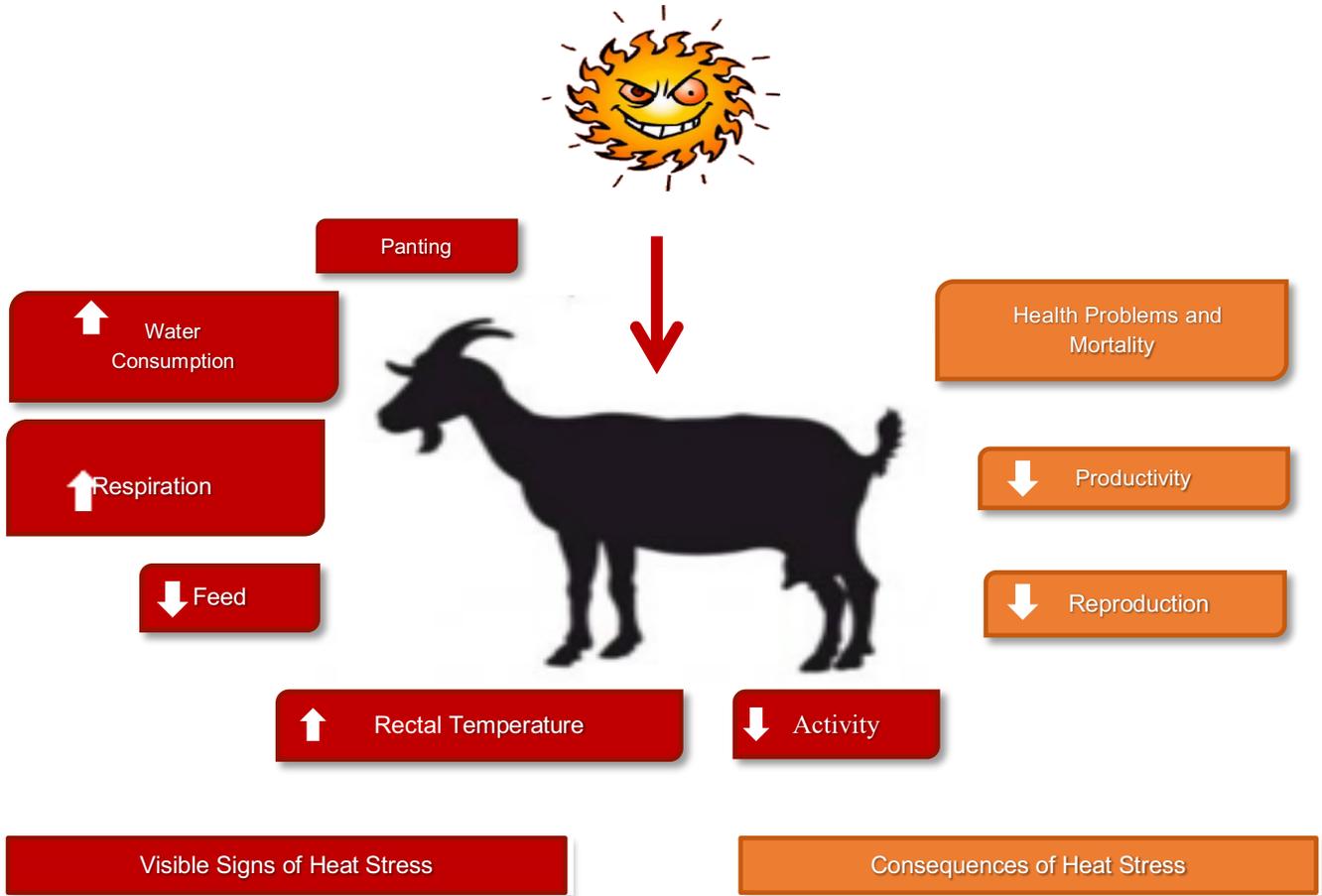
Productivity, reproduction and health are also affected by prolonged exposure to heat.

Heat Stress

It is important to be able to recognize signs of heat stress to avoid heat exhaustion or stroke. Signs include continual panting, increased and rapid respiration, decreases in activity and increases in rectal temperature (over 105°F). If rectal temperature exceeds 107°F, death may occur. If you suspect that your goat or sheep is in heat stress, you should move the animal to a cool shaded area with good air circulation, offer plenty of fresh, cool water, and if necessary, carefully spray water and use ice to help decrease the body temperature. If the animal becomes dehydrated due to exposure to extreme heat, administration of fluids may be necessary.

During the summer, it is important to frequently check livestock for signs of distress!

During the hottest months of the year, goats and sheep should be able to stay healthy, productive and maintain normal body temperature if they have shade and plenty of water available at all times!



Rotational Grazing Strategies for Small Ruminants

Alicia Halbritter

Continuous grazing is when livestock always have access to the entire forage system. Continuous is by far the easiest system to manage and requires fewer initial inputs but could have costly impacts. Rotational grazing, or allowing livestock to only access part of a forage system at a time, does require more inputs like fences, water, feed bunks, manpower, management decisions, etc. However, rotational grazing has the potential to increase forage production, increase nutrient distribution, reduce overgrazing, and allow for increased stocking rates. Switching to a rotational grazing system could potentially reduce supplemental feed costs, reduce the need for fertilizer, increase desirable forage growth while suppressing growth of weeds, and allow ranch managers to inspect the herd more often for possible health problems which could increase herd health.

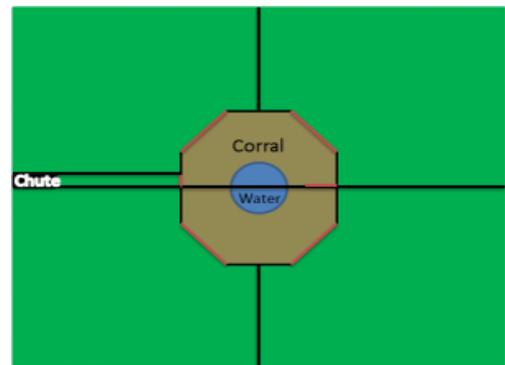
Rotational grazing is a management system that allows us to move animals from pasture to pasture to maximize utilization of forages and encourage desirable plant growth. Young, tender growth is more palatable and nutritious for animals therefore it is better to develop an operational plan that allows for the most grazing on new growth, without stressing the pasture.

*When converting to a rotational grazing management style you should first take a look at what you have available and what your goals are for the operation. Are you looking to increase your stocking rate? Reduce supplemental feeding? Or simply manage your available resources better?

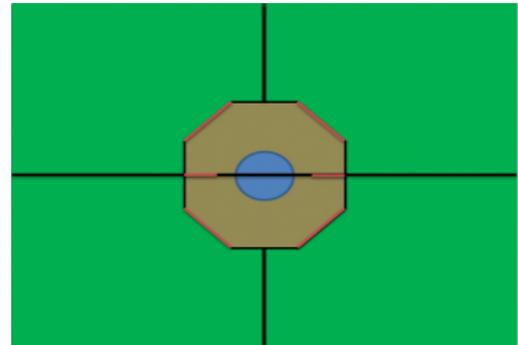
*Your plan should include the cost of additional fencing (permanent or temporary), additional feed/water troughs, as well as the number of livestock in the system. Next, determine how you will design your paddocks, how big they will be, and how long livestock will stay in one area. Most grasses do well with 21 days of rest after being grazed to the recommended stubble height. The minimum stubble height for Bahia is 2 inches and Bermuda is 3-4 inches.

*Fencing can be permanent, such as metal t-post or wooden posts with field fence, or temporary fencing which is typically an electric system. Temporary fencing often must be moved, which can make pasture utilization more adaptable to your needs but also requires more labor to move and maintain.

*There are many types of grazing management systems and not all types will work in every ranch situation. The main limiting factors are budget and manpower, both of which are hard to overcome. Contact me to talk about possible options for your operation that can increase the production of your herd and in turn increase your profits! More info here: <http://edis.ifas.ufl.edu/ag268>



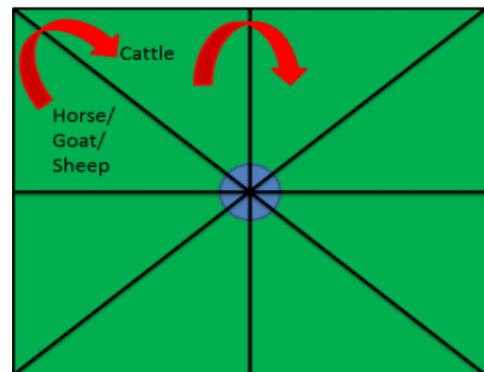
This grazing system also incorporates a corral and watering trough but also has a livestock chute for easy working/loading.



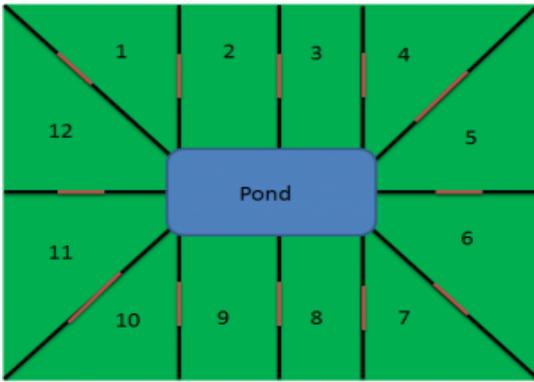
This style incorporates a corral and watering system in the middle of the grazing system. Livestock would spend around 7 days in each quadrant, giving you about 21 days of rest between grazing events.



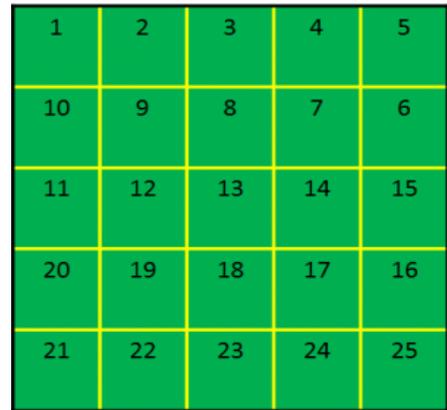
In order to use less inputs, you could use a style similar to this. The black represents permanent fencing, the yellow, temporary fencing. Livestock start on one side and you move the temporary fencing forward every so often. Once livestock reach the end of the pasture, you bring them back to the front and start over. In the end this is less effective since livestock still have access to previously grazed land. This does not allow for a true rest period.



Have multiple types of livestock? Help break up parasite life cycles by grazing one species after the other. The rest period in between will lower the viable egg count and will allow the grass time for regrowth.



This style is centered around a pond or watering source. This will eliminate having to purchase separate watering devices for each paddock. The red lines depict gates. Livestock would spend 2 days or so in each paddock, leaving 22 days rest period.



This style requires the most inputs as each paddock would need access to a watering system. Yellow lines could represent permanent or temporary fencing. Livestock would spend 1 day in each paddock, leaving 24 days of rest between grazing events.

Alicia Halbritter is the Agriculture & Natural Resources Agent Baker County. Contact her at 904-259-3520 or by email: aliciah1221@ufl.edu

Prepare for the Breeding Season: Sheep Flock Considerations

Cassidy Dossin

We have made it to the dead of summer and sheep producers across the state are likely looking forward to some cool weather relief to the intense Florida heat. Fall is the breeding season for sheep, which are short-day breeders. This means that most sheep will begin estrous cycling when day length shortens, a breeding season typically spanning from September to January. Even though the summer heat and constant rainstorms we're currently dealing with may make fall seem far-off, flock managers should keep in mind some helpful management practices ahead of time to ensure preparedness for the breeding season, the cornerstone of a flock's profitability.

Body Condition

Body condition score (BCS) can be used to assess sheep body fatness, allowing a producer to take note of whether their sheep are too fat or too thin. Sheep BCS is evaluated on a scale of 1 to 5, 1 being extremely thin or emaciated, and 5 being extremely fat. BCS is evaluated typically through a visual appraisal, but can be supplemented or substituted with palpation, especially in heavy fleeced breeds. Ideally, sheep should be a score of 3 throughout the year, especially going into breeding season and before lambing.

A 3 BCS score means the sheep's spine is not visible, the loin and leg are adequately filled out with muscle, and the hip bones are well covered with muscle and a thin layer of fat. The ribs will not be noticeably visible but can be felt with some pressure on a sheep scored as a 3.



Image caption: Sheep with a BCS score 3 will have full leg and loin muscles and fat covering the ribs but lack extra fat pockets in the chest and dock area.

Image caption: Sheep with a BCS of 1 will show the spine and ribs clearly and have protruding hip bones. Image by Melanie Barkley, Penn State Extension.



Sheep with a 1 or 2 BCS are not receiving sufficient nutrition and may not begin cycling. Sheep that are too fat, with a BCS of 5, may also have decreased fertility. An over-conditioned flock indicates that they are receiving excess supplementation, and the producer may be able to save money by readjusting the nutrition program. Body condition scoring allows flock managers to make culling decisions and adjust the feeding program to ensure a healthy, fertile flock heading into the breeding season.

Flushing

Flushing is the practice of increasing the plane of nutrition for ewes 2 to 3 weeks before the breeding season and 2 to 4 weeks into the breeding season. Flushing has shown to improve the lamb crop by 10-20% through increasing the number of ovulations in ewes and increasing survival of lamb embryos, resulting in more twin births. Response to flushing is greatest in mature ewes with moderate to below average BCS, 2 to 3. Flushing response is lowest in overweight and severely underweight ewes.

Producers can increase the plane of nutrition to flush their flocks in a variety of ways. To flush a flock, total digestible nutrients (TDN) or energy needs to be increased in the ewe's diet, and a smaller increase in crude protein (CP) can be beneficial as well. Corn is a high-energy feedstuff with 10% CP and can be a great supplementation for flushing at around 1 pound per ewe per day. Good quality hay, other grains, and turning the flock out to high quality pastures are also flushing options that a producer can choose from; flushing is a great tactic for breeding season prep that can be altered to fit into any operation. Start your flushing plan early on to be prepared for the breeding season.

Ram Breeding Soundness Exams

The goal of a breeding soundness exam (BSE) is to assess and classify a ram's potential breeding ability. The process includes an evaluation of the animal's physical condition and conformational fitness as well as an assessment of the semen to predict fertility. The data collected from the physical and semen evaluation are used to classify the ram into 4 categories: excellent, satisfactory, questionable, and unsatisfactory. BSEs can be conducted by your veterinarian and should be done annually.

The physical exam of the BSE includes observation of the eyes, feet, legs, prepuce, and penis for any defects that could hinder breeding. The testes and epididymis should be palpated to check for abnormalities and scrotal circumference (SC) will be measured. SC is a good indication of a ram's breeding capability and endurance; adult rams with a SC of less than 33 cm and ram lambs with a SC of less than 30 cm typically will not be approved as acceptable breeders. In the visual evaluation, rams should be checked for lameness, body condition, correct feet and legs, and any other defects which may interfere with the breeding process. It's helpful to check rams for conformational issues early on and cull problems that can't be fixed, saving you from going through the extra time and money of completing the BSE with the semen evaluation.

The semen evaluation requires a microscope and should be conducted in a controlled environment. Sperm motility and mobility will be measured and will contribute to the BSE score; however, proper sample collection and storage is critical to an accurate measurement. The stress of the ram is also a huge contributing factor to sperm motility and mobility. Heat, transport, and housing at sales can all contribute to poor semen evaluation temporarily. Rams can be re-tested in 4 to 8 weeks if the BSE is poor.

The breeding season is critical for sheep producers and all livestock managers alike. With fall just around the corner, flock managers should begin preparations by ensuring ewes are in ideal body condition, developing a plan for flushing the flock closer to breeding time, and having rams evaluated for breeding soundness.

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

Mastitis in Nursed Ewes and Does

Brittany N. Diehl

What Is Mastitis?

Mastitis is inflammation of the mammary gland, most commonly due to a bacterial infection.

When does mastitis most commonly occur?

First few weeks after lambing/kidding and at the time of weaning.

Signs of Mastitis:

Subclinical Mastitis

*Difficult to identify, however, it is quite common, especially during late lactation. Udder may be firm or hot and lambs/kids of affected doe/ewes may have poor growth rates with occasional deaths.

Clinical mastitis

Infection rapidly progresses over several days. The ewe/doe will likely become depressed and may prevent her lambs/kids from suckling due to pain. The ewe/doe may develop a fever and stop eating.

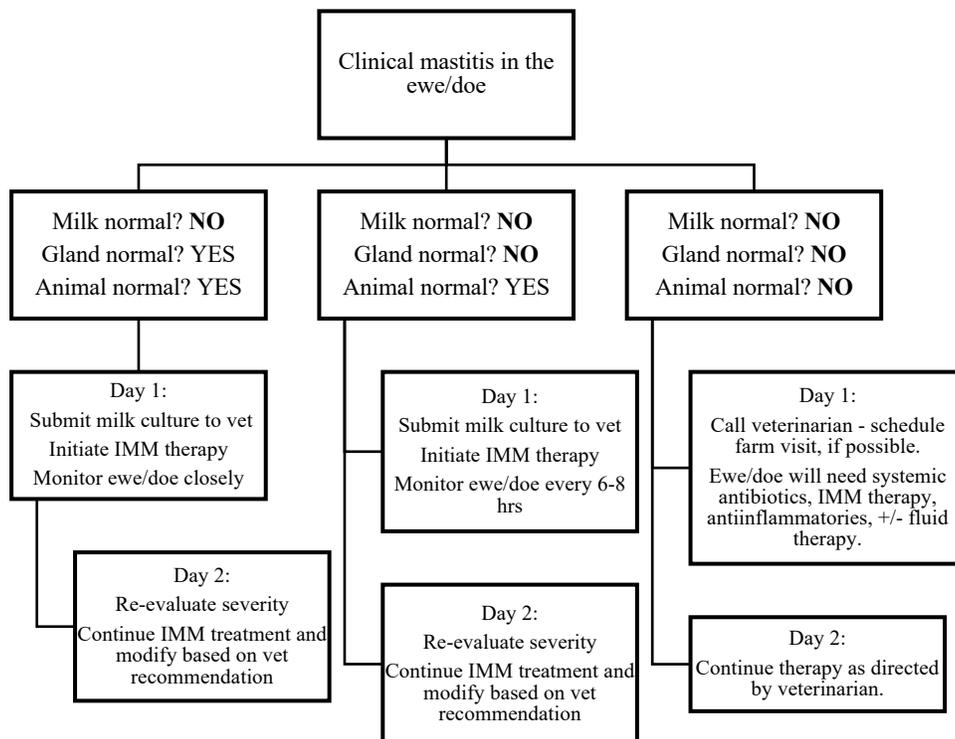
Lambs/kids will likely need to be supplemented milk due to a lack of milk from the ewe/doe. If the ewe's/doe's mastitis is not observed early, lambs/kids may also have poor growth rates and occasional deaths.

What's next if you think your ewe/doe has mastitis?

Clinical mastitis typically occurs < 5% per year, but problem herds may have clinical mastitis rates of 30-50%.

Self-cure rates are often 35-67% during the dry period in the ewe/doe.

Clinical signs of mastitis in the ewe/doe may include depression and lethargy, udder may appear asymmetric, firm or hard, hot to the touch and milk may appear watery, bloody, and have clots or flakes.



IMM = intra-mammary therapy

****If any of the above occurs while the ewe/doe is lactating – be sure to supplement the lamb/kid(s) with milk.**

Intra-Mammary Therapy

Be sure to clean the teat properly with alcohol swabs, prior administration of the therapy. ToDAY® (cephapirin sodium) is available at the local farm store, but other products should be obtained from your veterinarian!

Prevention is KEY!

Always keep bedding areas clean and dry, pay close attention to stocking density and provide proper ventilation.

Dry-Off

The dry period permits udder involution and colostrum development for the next lactation cycle and it is a good time to treat mastitis by implementing dry off therapy. To prevent mastitis during this period, generally, it is considered better to dry-off ewes/does abruptly, rather than gradually decreasing milking frequency.

When is it recommended to cull an ewe/doe due to mastitis issues?

Ewe/doe who has intra-mammary infections that persist through the dry period, ewe/doe that has multiple cases of mastitis that seems to reoccur or ewe/doe that do not resolve the mastitis, despite treatment.

Brittany N. Diehl is a resident at the UF Food Animal Reproduction and Medicine Service. Contact her by email: bn.diehl@ufl.edu

UPCOMING EVENTS

UF | **IFAS Extension**
UNIVERSITY of FLORIDA



NORTH FLORIDA
LIVESTOCK AGENTS GROUP

SAVE THE DATE!!

2021 Small Ruminant Workshop- October 23rd

UF Beef Teaching Unit South, Gainesville-FL

*Please check the UF Small Ruminant website for updates and more information about this event.

<https://animal.ifas.ufl.edu/smallruminant/>



October 2, 2021 University of Florida Ram Test Sale

We are excited to announce the inaugural UF Ram Test Sale!

The **UF Ram Test & Sale** is designed to evaluate rams for growth performance and parasite resistance under standardized environmental conditions. Our goal is to provide a source of high-quality, performance tested rams, with proven parasite resistance. This year, we received 41 consignments to the Ram Test, and we will be offering the highest performing individuals for your consideration at live auction on October 2, 2021. Please join us for educational programs, lunch, and fellowship prior to the sale. We hope to see you there!

- Animals will be available for viewing at **8:00am**.
- Extension programming and lunch provided.
- Rams will be available for sale at **1:00pm**.

Sale Location:

UF Beef Teaching Unit South
3721 SW 23rd St.
Gainesville, FL 32608

For full program details visit our website: animal.ufl.edu/smallruminant/ramtest

Contact Jesse Savell with any questions:
sanspur@ufl.edu (352)494-3397

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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

For the latest on small ruminants and to have access to previous newsletters, please visit the UF Small Ruminant Website:

<https://animal.ifas.ufl.edu/smallruminant/>



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