2025-2026
Citrus County Fair
Goat
Skill-a-thon Study Guide

Citrus County Goat Skill-A-Thon

A "Skill-A-Thon" is an excellent method of involving FFA and 4-H members in challenging, learn-by-doing activities. This program of helping youth develop both their life skills and poultry project skills is designed as a series of mini-learning stations. Use this guide to prepare for the skill-a-thon at the county fair.

OBJECTIVES:
1. To provide a learning laboratory which will enhance knowledge of the poultry industry.
2. To help youth feel more comfortable communicating with an adult.
3. To gain self-confidence and skills in one-on-one communication.
4. To develop responsibility for completing a project.
5. To develop critical thinking and problem-solving skills.
6. To provide additional opportunities to recognize youth for their accomplishments.

To have FUN!

TOPICS:
The topics are specific for each of the Fair's age groups for skill-a-thons.
Age as of September 1st, 2025:

J: Junior (8-10 yrs)
I: Intermediate (11-13 yrs)
S: Senior (14 yrs and up)

1. Breeds of Meat Goats **(J, I, S)**
2. Goat nutrition **(J, I, S)**
    A. Some Feeding Guidelines **(I, S)**
3. Nutritional Disorders **(S)**
4. Hoof Trimming **(I, S)**
5. Body Condition Scoring **(I, S)**
6. Sheep & Goat Parasites **(I, S)**
7. Dairy Goat Facts **(S)**
8. Goat Cheese **(I, S)**
9. Preventative Healthcare **(I, S)**

BREEDS AND REPRODUCTIVE MANAGEMENT OF MEAT GOATS

J, I, S

By
Basil Bactawar, UF/IFAS Duval County Extension Service

The meat goat business is growing, and it is fueled by a growing demand for goat meat by an ethnic population in Florida. When someone becomes interested in goat production or wishes to select a breed for his or her farm, one of the key questions is which breed is the best for meat production. Each breed has its advantages and disadvantages depending on the local conditions where it is grown. Selecting a breed is based on the growers' preference and management ability.

SPANISH MEAT GOAT

It is believed that the Spanish meat goat came from Spain to the USA through Mexico. It is known as the wood goat in Florida. The size of this meat goat varies with climate and terrain. They have horns and the color of their coats consist of a variety of colors and pattern. They have small udders and feet. These anatomical characteristics make them very good range animals. The buck weighs about 100 lbs. but can weigh up to 180 lbs. The does weigh an average of 70 lbs. and can weigh up to 120 lbs. They breed out of season.

BOER BREED - GOAT

This breed originated in South Africa but was imported from New Zealand to the USA in the 1990's. They have heavy muscle and reported daily weight gain ranges from 0.3 lbs. to 0.4 lbs. per day. The adult male weighs about 250 lbs. and the female about 140 lbs. The yearling male weighs an average of 100 lbs. and the yearling female approximately 80lbs. They have a non-determinate breeding season. Research in New Zealand reported that nutrition has a greater effect than light/dark cycle to Boer goat to breed out of season. The kidding percentage is approximately 200 percent.

KIKO BREED - GOAT

This breed was imported from New Zealand in the 1990's into the USA. Their coats are generally white but can be any color from white to black. They have large frames and are known to mature early. In developing the breed, the does were selected for their hardiness under range conditions with no kidding assistance, their mothering ability and their ability to have twins annually. They are generally well suited for meat goat production under humid and subtropical conditions. On average, the does wean approximately 1.6 to 1.8 kids with an average litter weight of 62 to 67 lbs. at 90 days old. This breed is generally more resistant to internal parasites, especially the barber pole worm, than the other breeds.

MYOTONIC GOAT

Photo Courtesy of Langston University

This breed is indigenous to the USA, but its ancestors can be traced back to four goats that came from Nova Scotia. It is also known as the "faint goat," and the "Fall-Down Goat." It is a muscular animal with heavy rumps and deep chests. It has a variety of colors with the most common ones being black and white. It breeds out of season, and does produce two kidding's per year in many herds. It produces good crossbred offspring's with the Boer breed.

GOAT NUTRITION

J, I, S

Goats are ruminants and their diets consist of forages and brushes including weeds such as blackberries, pigweeds, honey suckle, and kudzu. Goats have narrow and deep mouths. This anatomical feature allows the goat to selectively harvest soft and leafy tissues and woody shrubs. The deep mouth enables it to strip leaves and harvest the highest quality parts of the plants. This adaptability makes the goat well suited for year round grazing.

The nutrient requirements for goats vary with the animal's body weight, sex, the stage of pregnancy and lactation. Physical activities and stress influence these requirements. The nutrient requirements for goats include:

ENERGY

PROTEIN

MINERALS

VITAMINS

WATER

ENERGY is supplied by forage, browse and grains. Inadequate feed intake, poor quality feed and forage can have a negative effect on productivity through reduced growth and reproductive efficiency. Additionally, it can lead to reduced milk production. Kids that depend on the doe's milk for growth can be negatively affected. Diseases and parasite infestation are closely linked to inadequate energy intake. The provision of the required levels of energy in goats is important to maintain a healthy herd.

PROTEIN constitutes the building blocks for cells. If the level of protein in the goat's diet is inadequate, then fetal development can be affected. Furthermore, it could lead to reduced growth and milk production.

VITAMINS - ruminants produce vitamin K and all the B vitamins in the rumen. Vitamin A is likely to be deficient during times of drought when forage is not available.

WATER is a necessary nutrient and should be provided fresh, clean and available at all times. The lack of water can reduce intake. Daily consumption of water ranges from one quart to one and half gallon per head per day. Periodically scrub and sanitize watering bowls to keep them free from contamination, microbes, parasites and algae.

SOME FEEDING GUIDELINES

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The goal of feeding is to foster good health for maximum production. It is essential to keep an eye on costs to stay within a reasonable budget.

Feed constitute cost about 60-70% of the cost of production.

It is important to pay attention to prices and low cost alternative grains. Proper feeding of goats is the best defense against diseases. The question that always arises is how much grain and hay to feed. As mentioned above, it depends on the sex of the animal, the body weight and whether the goats are pregnant, lactating or dry.

How long should it take for goats to consume hay and grain?

> **Hay and grain offered to goats should be consumed in about 20 minutes.**
>
> **If the animals are taking longer than 20 minutes to consume the feed provided, then they are probably being overfed.**

On average, and adult animal should be fed five lbs. of high quality feed and hay per day. Milking does should be fed an additional pound of grain/day for every quart of milk produced. Goats may reduce their feed intake if the grains are moldy. It is essential to buy good quality grains. Grains not dried properly or stored under damp or wet conditions in high temperatures can lead to mold growth.

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NUTRITIONAL DISORDERS

Prevention is better than curing an illness. The following are some conditions that can develop from poor nutrition and feeding practices:

BLOAT

Gas is a natural by-product of digestive fermentation in the rumen, and it is expelled continuously as the goat belches. Bloat occurs when gas is trapped in the rumen. It is a life-threatening condition.

Frothy bloat is usually caused by grazing lush pasture or legume pastures. Foam forms in the rumen with tiny bubbles that are impossible for a goat to belch up. The rumen expands with foam.

Dry bloat is usually caused by indigestion from eating too much grain. In this type of bloat, gas forms in pockets and is trapped in the upper portions of the rumen.

To prevent bloat, feed high quality hay before allowing them to eat new, green moist grass. It is advisable to feed hay first before grains in the morning.

ACIDOSIS

Fiber (e.g. hay or silage) is important in the diet because it stimulates the goat to chew, thereby producing alkaline saliva which serves to control the level of acidity in the rumen.

The rumen microflora (bacteria) can only handle gradual changes in forage. If the variety or type of grain changes too quickly, then lactic acidosis will develop. This lowers the pH of the rumen. The acid gets absorbed into the body creating general acidosis. It is advisable to avoid sudden or too much offering of grain to goats.

LAMINITIS/FOUNDER

Laminitis is the term used to describe the initial outbreak of the disease when the laminae become inflamed and break down, releasing its hold on the bones in the hoof.

Over-feeding a high-energy diet or feeding a concentrated grain diet with low-to-no-roughage sets the stage for this illness. The signs are lameness, reluctance to move, fever and all 4 feet are hot to the touch. It can be partially cause by complication of other diseases. The approach to prevent this disease is to feed balanced rations with no sudden or drastic change in diet.

MILK FEVER

Milk fever usually occurs around kidding time.

The noticeable symptom of this disease is dragging of the hind foot. Caused by feed rich in calcium. The best way to prevent milk fever is to lower calcium intake during the last 30 days of pregnancy. In most herds, this can be done by eliminating legume hays from the doe's diet.

ENTEROTOXAEMIA

This condition is called over-eating disease. The normal intestinal microflora (bacteria) may contain the bacteria *Clostridium perfringens* Type D. Excessive consumption of grain or young succulent forage can cause bacteria to multiply and produce a toxin that leads to sudden death. Control of this disease is vaccination of the breeding female as well as the kid. Avoid feeding high grain diets or allowing goats to graze lush pastures.

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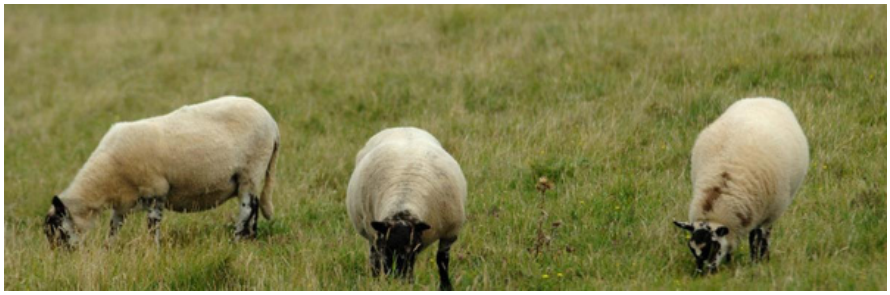
HOOF TRIMMING

A quick guide to trimming small ruminant hooves



HERD HEALTH

Trimming your small ruminant's hooves is important for their overall wellbeing. It can impact their performance, disease resistance and welfare. As part of a herd health routine hooves should be checked for disease and excess growth often. Animals exhibiting chronic hoof disease or excessive abnormal hoof growth should be culled. Maintaining hooves allows for better air flow reducing the changes of bacteria that can cause infection. Trimming helps prevent lameness and promote proper hoof growth in young animals.

TRIMMING PROCESS

Once you have all the proper tools and have practiced your restraint method, you can begin the trimming process. Grasp one leg by the pastern (ankle) and bend it back. Make sure the animal isn't over reaching and calm. With the point of closed shears, scrape away any debris. Pry open and snip off the outer hoof wall flap folded under the hoof. Trim down until you see the white sole. You will then see a growth ring parallel to the hairline. Trim away ragged edges of inner hoof wall between the two halves of the hoof. Trim the soft heel, one tiny slice at a time until the heel is the same level as the toe. Stop trimming if you begin to see pink. This means you are close to the foot's blood supply. If bleeding occurs, sprinkle the area with blood shop powder.

THE ESSENTIALS

WHEN TO TRIM

The frequency and timing of trimming varies based on multiple factors. The type of terrain, age, level of activity, nutritional level and genetics all come into play. Typically rocky and harder areas will wear down hooves faster meaning less trimming. Small ruminants in soft pastures will need trimming more frequently. If an animal has trouble walking, it is time to check its hooves.

PROPER EQUIPMENT

- Hoof shears or trimmers
- Hoof knife, straight vs. curved
- Brush
- File or Hoof Rasp/Plane
- Spray bottle and gloves

RESTRAINT TECHNIQUES

There are a variety of restraint techniques to utilize. It is best to practice before actually trimming. Standing against a fence or on a stand or work platform can work for goats. Sheep can be tipped onto their rump or use a deck chair. Laslty, a tilt table or "squeeze" that is manual or automatic can work.

find source , 2016

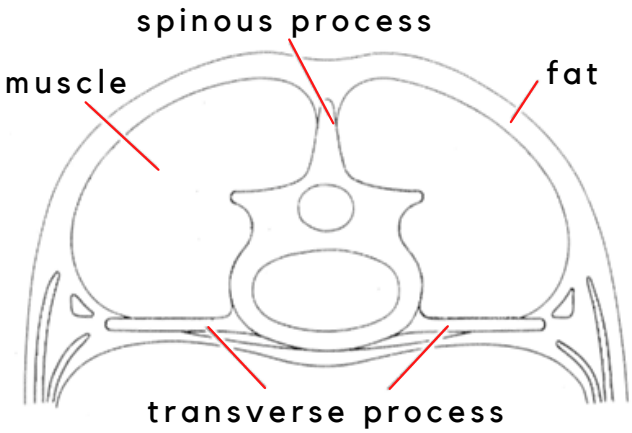
DOCUMENT PRODUCED BY: JUSTINA DACEY & IZABELLA TOLEDO

SMALL RUMINANT I, S

BODY CONDITION SCORING

WHAT IS BCS?

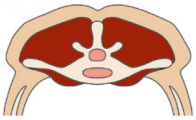
Body condition scoring is an important practice on a small ruminant operation to assess the nutritional status and fat cover of a flock or herd. BCS is conducted on a scale of 1 to 5, 1 being severely under-conditioned and 5 being very overweight.



HANDLING

Handling the animal is necessary to get an accurate score, especially when dealing with wool. Handle the sheep or goat along the backbone and behind the last rib over the loin. Feel for the prominence of the spinous process and transverse process and over the loin to make your estimate. Place your fingers underneath the transverse process to check for the extent of fat cover.

THE SCALE

	HOW IT HANDLES	WHAT IT MEANS
1.0 -	The spinous process and transverse process are sharp and obvious. The loin is thin with no fat cover. Individual ribs are easily felt.	 Extremely thin, emaciated
2.0 -	The spinous process and transverse process are prominent but smooth. The loin is moderately thick with very little fat cover. Individual ribs can be felt.	 Extremely thin — **Needs additional supplementation to have better odds of becoming bred.**
3.0 -	The spinous process and transverse process are smooth and rounded. The transverse processes are only felt with pressure.The loin is full with moderate fat cover. You can not feel between the ribs.	 Ideal — **Ideal condition for successfully getting bred and maintaining condition through lactation.**
4.0 -	The backbone can only be felt as a line down the back. The transverse processes can not be felt. The loin is full and rounded, with a thick fat covering.	 Overconditioned — **May still become bred, but producer can save money by reducing supplementation.**
5.0 -	Neither the backbone nor transverse processes can be seen or felt even with pressure. There is a dimple along the back where the backbone should be. The loin full and covered in a very thick fat layer.	 Extremely overconditioned — **Producer has large opportunity to increase profits by cutting back supplementation.**

THIN EWES ARE BAD NEWS

Some amount of fat on all animals is essential for insulation and energy stores. Very thin ewes and does will have decreased fertility, increased disease or internal parasite incidence, decreased milk production, and increased overall operating costs.

Lactation is the most energy expensive stage for small ruminants. Ewes and does can drop 0.5 or more in BCS during lactation, so it's best to score your flock or herd ahead of time. Ewes and does should be scored at breeding to make nutritional preparations for lambing and kidding season.

WHAT'S THE HARM IN OVER-CONDITIONED?

Fat is expensive to put on and expensive to maintain. Excess fat on a herd or flock constitutes an unproductive expense in feed. Using BCS to inform nutritional management on the small ruminant operation can potentially save the producer's profits.

I, S RECOMMENDED RANGES

Ewes and Does

Production Stage	Optimum BCS
Breeding	2.5 to 3.5
Prior to wintering and lambing/kidding	3.0 to 3.5
Weaning	2.5 to 3.5

Rams and Bucks

Prior to breeding season	3.0 to 3.5

FACTORS AFFECTING BCS

Nutrition
Level of Production
Stage of Production
Age
Health

A dairy goat with a BCS of 5.0. The spinous process and transverse processes are covered in fat, not able to be seen or felt. The hip and pin bones are poorly defined. A thick layer of fat covers the ribs.

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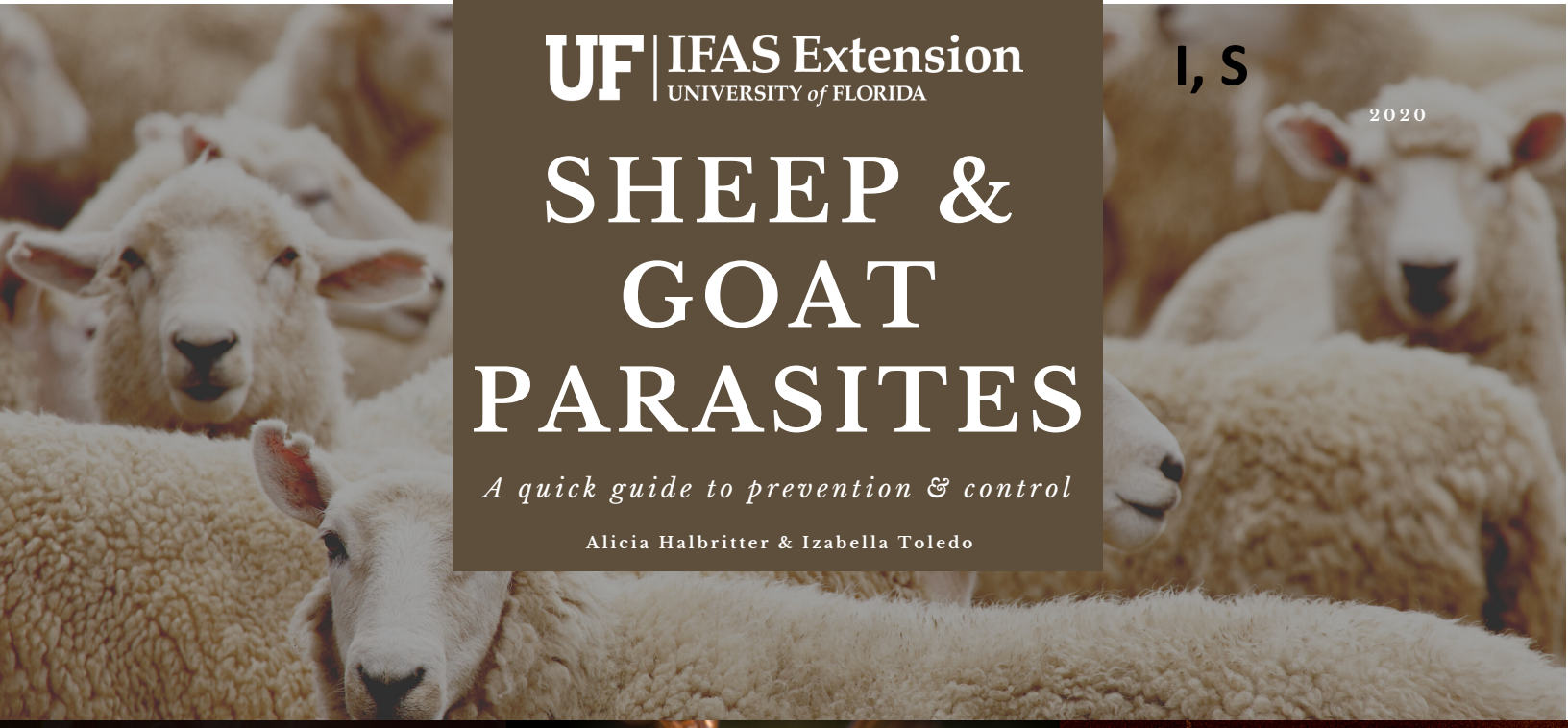
NORTH FLORIDA LIVESTOCK AGENTS GROUP



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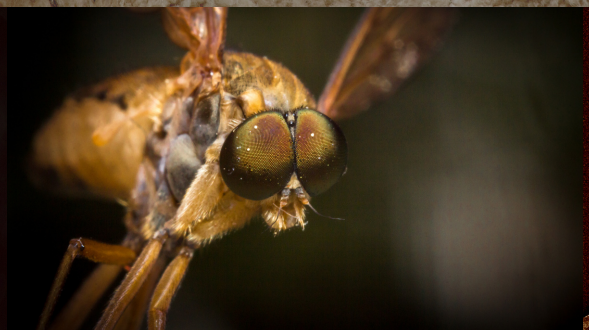
SHEEP & GOAT PARASITES

A quick guide to prevention & control

Alicia Halbritter & Izabella Toledo



LICE

Lice are a blood sucking and skin feeding external pest. There are nine species of lice that can affect sheep/goat in Florida. Animals affected with lice will exhibit excessive scratching and potentially hair loss. Insecticides will not control louse eggs. Usually, it is necessary to perform two treatments, 14 days apart, to control lice.

FLIES

Flies can be an irritant to animals, especially on the legs and face. However, the most notable fly issue with sheep and goats is the Nose Bot Fly. This biting fly infests and lays their eggs in the nostrils. The fly larvae will travel up the nostril and feed on mucous membranes. Currently, an ivermectin oral drench is the only available treatment.

MITES/FLEAS

Mites and fleas cause irritation and itching on the skin. Scab mites and sticktight fleas are the most common of this pest type to infect sheep and goats. Infestations can usually be seen around the face and ears. Due to the life cycle of these pests, retreatment is often necessary for more complete control.

For external parasite product recommendations visit: https://www.veterinaryentomology.org/

INTERNAL PARASITES

All grazing animals are susceptible to internal parasite infections. Barber pole worms, the most common stomach worm of sheep and goats, are blood-sucking parasites that can cause anemia, weight loss, and lethargy in infected animals. Level of infection in your herd can easily be determined using fecal egg counts or the FAMACHA system, which estimates anemia levels using the inner eyelid.

Internal parasite infections can be mildly prevented using proper grazing management strategies. Allowing a rest period before re-grazing an area can kill of parasite loads and reduce your herds chance of infection. If infection does occur and treatment is deemed necessary, an oral drench dewormer will be required. Injectible dewormers are not generally recommneded for small ruminants. Pour-on dewormers should not be used as they do not absorb properly through wool/hair. Always consult your veterinarian to determine the best treatment methods.

DAIRY GOAT FACTS

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* In the United States, dairy goats are found in every state. According to the USDA, as of January 1, 2020, there are 440,000 milk goats in U.S.
* Florida milk herd consist of 9,000 goats (NASS 2020).
* Overall, 10.0 percent of U.S. goat operations focus primarily on dairy production.

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BREEDS

Alpine

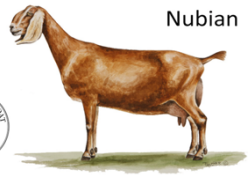
*Hardy, adaptable, thrives in any climate

LaMancha

* Calm, produces well in various climates and conditions

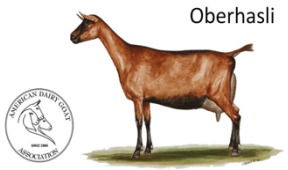
Nigerian Dwarf

* Small, produces milk with high butterfat



Nubian

* Produce milk with high butterfat and protein



Oberhasli

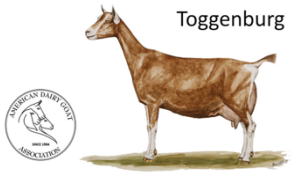
* Calm disposition

Saanen

* High milk production and calm

Sable

* High milk production and calm



Toggenburg

* One of the first purebred imported to U.S.

MILK

Uses

* Goat milk is used for drinking and also to make cheese, yogurt, ice cream, butter, and beauty products.
* Because of its unique nutritional and biochemical properties, goat milk is preferred by people with cow milk allergies and gastrointestinal disorders.

Production

* Milk Production ranges from 1,200-2,600 pounds per doe per year depending on feeding, genetics and other management practices.
* Lactation average is 284 days.

Dry Period

* Does should have at least a 60-day dry period to allow their mammary systems to prepare for the next lactation.
* Does that do not have a long enough dry period will have a lower milk production in the next lactation cycle.

Quality

* The key to producing quality milk is a sanitary environment, properly cleaned and maintained milking equipment/supplies, following proper milking procedures and milking does with healthy udders.
* Two major parameters monitored as indicators of goat milk quality are somatic cell counts (SCCs) and bacterial levels in milk.
* In general, milking young goats before old goats and milking goats without mastitis before milking goats with mastitis is recommended to reduce new infections and improve milk quality.

Milking Procedures

* The production of high-quality milk depends on routinely following the proper milking procedures.

. Three methods are generally used to milk dairy goats:
* By hand, collecting milk in a bucket;
* By using a milking machine and collecting the milk in a bucket;
* By milking machines in a parlor, collecting milk directly intoa pipe system and bulk tank.

Nutrition Facts in One Cup of Goat Milk (8 ounces)

Calories	**170**
Protein (g)	**9**
Fat (g)	**10**
Carbs (g)	**11**
Lactose	**11**
Calcium	**330**

13

Izabella Toledo, UF/IFAS Dairy Extension, Northeast District
Justina Dacey, Natural Resources & Agriculture, UF/IFAS Nassau County

GOAT CHEESE

The average dairy goat produces a gallon or more of milk per day, once kids are weaned, making Goat Cheese is an alternative way to avoid storage and spoilage of large amounts of milk!

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How is Cheese Made?

Cheese is fermented milk made by separating the **solids (curds)** from the **liquid (whey).**

Goat cheeses may be soft and fresh or hard and aged. The more whey used during the cheese making process, the softer and moister the cheese will be. For dryer, harder cheese, remove more whey by using different techniques such as cutting, stirring, heating, pressing, salting and/or aging the curd. Dryer, harder cheeses will have longer shelf life.

Ingredients Used for Making Goat Cheese

Cheese may be made by using either raw or pasteurized milk. Commercial cheesemakers have to use pasteurized milk for any cheese that will age for less than 60 days.

Besides milk, culture, rennet and salt are the main ingredients to make cheese. The amount of ingredients and variations in time, temperature and techniques will determine the type of cheese. Some simple cheeses, like whole milk ricotta, for example, is made by just adding vinegar or lemon to milk. The acidity promoted by the lemon juice or the vinegar break apart the protein structure of the milk once it has reached a specific temperature.

Equipment Needed for Making Goat Cheese

- Stainless steel pots
- Slotted spoon or skimmer
- Measuring cup and measuring spoons
- Thermometer
- Fine woven cheesecloth
- Strainer
- Curd knife or spatula

*For pressed and aged cheeses, you will also need cheese molds, cheese press and an aging refrigerator.

***Goat cheese recipes** can be found online:
https://backyardgoats.iamcountryside.com/home-dairy/7-easy-recipes-for-making-goat-cheese/

Types of Cheese Made from Goat Milk

Any cheese can be made from goat milk!

Most common cheeses include Chévre, Feta, Humbolt Fog, Goat Gouda, Goat Brie, Drunken Goat, among others.

Izabella Toledo, UF/IFAS Northeast District Dairy Extension

Animal caretakers are responsible for providing safe, secure, and healthy environments. This section will focus on providing healthy environments. In Florida, hot temperatures are commonplace. So, maintaining a healthy environment requires a knowledge of heat and heat management. If not managed, too much heat results in heat stress. This can lead to reduced feed intake and weight loss, poor breeding efficiency, changes in behavior, and in extreme cases death can occur.

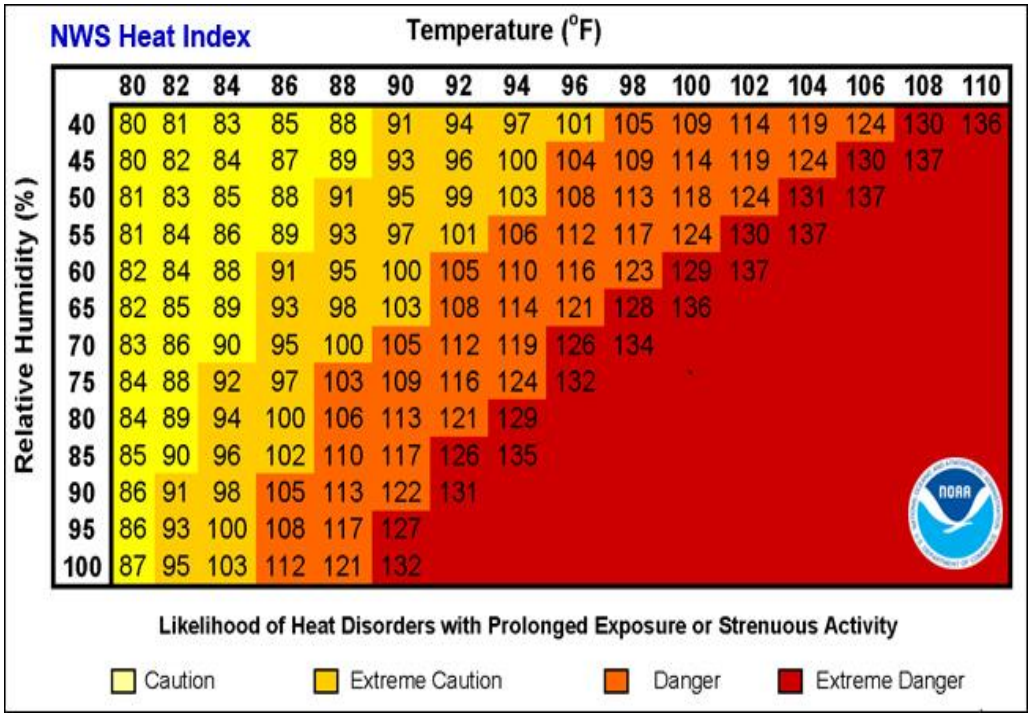
HEAT AND HEAT STRESS

High temperatures are uncomfortable and can be stressful for livestock. Heat stress increases when combined with humidity, wind speed, and solar radiation (sunlight).

HEAT INDEX

To predict the likelihood of heat stress, ranchers, livestock producers and exhibitors can use a heat index. A Heat Index combines temperature, humidity, wind speed, and solar radiation to determine the stress on an animal for the specific environmental. The National Weather Service (NWS) maintains the Heat Index used by weather stations across the nation to forecast heat conditions (Table 1).

Table 1. The Heat Index is a measure of temperature and relative humidity. This table can be accessed on-line at https://www.weather.gov/safety/heat-index



The Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH) have created a heat tool (OSHA-NIOSH Heat Safety Tool) available on the App Store or Google Play. It can be used to monitor local heat conditions and predict the likelihood of heat disorders.

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SIGNS OF HEAT STRESS IN LIVESTOCK

Livestock exhibitors know that it is in their best interest to keep livestock and poultry healthy and in good condition. Preventative healthcare seeks to identify potential issues before they become problems. Here are some of the symptoms indicating heat stress in livestock and poultry:

- Bunching in the shade
- Slobbering or excessive salvation
- Foam around the mouth
- Panting or open mouth breathing
- Lack of coordination
- Trembling

Temperature Range	
	°F
Poultry	105.0 - 107.0
Rabbit	101.0-103.0
Beef	100.5 - 103.0
Swine	101.5-102.5
Goat	101.5 -103.5
Sheep	101.5 -103.5

Goats, along with humans, cattle, swine, poultry, rabbits, and sheep, are HOMEOTHERMS meaning they can control body temperature within a range of temperatures. Goats are exposed to many heat sources. Goats sweat a little; however, they do have other ways of controlling temperature.

Figure 1. Goat heat transfer occurs by 3 primary modes. Conduction – transfer of heat to the ground, Convection – heat dissipation with air movement (heat loss from their horns), Evaporation – loss of moisture from respiratory tract (panting).

Assume it is mid-August, the air temperature is 95°F, there is no wind, humidity is 95%:

1. Should you be making plans to reduce heat stress?
2. If so, what can you do to reduce heat stress?