GOATS & SHEEP: WHAT YOU NEED TO KNOW

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WHAT IS A SMALL RUMINANT???

Little Cows?
OR
Sheep and goats?
FIRST LESSON!

Ruminants include cattle, sheep, goats, buffalo, deer, elk, and camels. These animals have a digestive system that is uniquely different from our own. Instead of one compartment to the stomach they have four. Of the four compartments the rumen is the largest section and the main digestive center. The rumen is filled with billions of tiny microorganisms that are able to break down grass and other coarse vegetation. Partially chewed fiber goes into the large rumen where it is stored and broken down into balls of “cud”. Once full, the animal will rest and “chew his cud”. The cud is then swallowed once again where it will pass into the next three compartments—the reticulum, the omasum and the true stomach, the abomasum.

SO, SHEEP AND GOATS ARE SMALL RUMINANTS!

REMEMBER-There is as much difference within breeds/species as between breeds/species.

HOWEVER, MOST INFORMATION ON SHEEP AND GOATS IS RELATIVE TO BOTH SPECIES.
Sheep BREEDS can be wool or hair, dairy, etc.
Goat BREEDS can be meat or fiber, dairy, etc.

MAJOR DIFFERENCE: SHEEP AND GOATS

Sheep graze.
    Goats browse.
Goats require copper in the diet.
    Sheep tolerate little copper in the diet.
(As a rule of thumb SHEEP NEED NO MORE THAN 4-8 PPM IN THE DIET)
SHEEP, GOATS, AND COPPER

HAIR Sheep ARE MORE TOLERANT OF COPPER THAN WOOL SHEEP

Do not feed swine or poultry feed to sheep. They contain high levels of copper by design.

Carefully investigate copper levels in beef or dairy products before feeding to sheep. Some of them will have high levels of copper, while others will not.

Communicate with feed company representatives or country elevators supplying feed. It is important that mixers are clean, augers clean, and feed delivery trucks clean before handling sheep feeds, especially if they mix and handle swine feeds.

Test feeds and forages for levels of copper, molybdenum and sulfur.

Avoid grazing sheep on pastures where swine or poultry waste is applied.

Consider adding molybdenum to the diet at a rate of 3 ppm.

SHEEP, GOATS, AND COPPER

GOATS REQUIRE some COPPER IN THEIR DIET

Always use a sheep mineral for sheep and a goat mineral for goats.

If sheep and goats are running together, use sheep mineral to be safe.

Sheep and goats do require minerals.

Keep a good quality mineral out full time for optimum reproductive and nutritional health in sheep and goats.
SHEEP AND GOATS ARE PRETTY MUCH THE SAME ANIMAL WITH BOTH BEING SMALL RUMINANTS, AND THEREFORE CAN BE MANAGED IN PRETTY MUCH THE SAME FASHION. THERE ARE SMALL DIFFERENCES IN COPPER LEVELS, AS WELL AS GRAZING AND BROWZING PREFERENCES.

HAIR SHEEP 101

What is a Hair Sheep?
Any breed or cross breed of sheep that is devoid of wool. Primarily used in the production of meat!
HAIR SHEEP..

Most breeds originated or trace origins back to Africa
- Dry desert types-South Africa
- Tropical types-Caribbean/West Africa
Increasing numbers in the U.S. and MS
  Decrease in wool value and increase in meat value
  Production efficiency and ease of care

BREEDS..

- Droper (black and white)-ideal terminal sires
- Katahdin-ideal maternal females
- Barbados Black Belly
- St. Croix
- Damara
- Crosses with hair and wool breeds
HAIR COMPARED TO WOOL...

Popularity is due to:
No shearing
Little/no docking of tails
High level of reproduction
Parasite resistance
Heat and humidity tolerance
Ideal for small lifestyle farms

MAJOR DIFFERENCES TO WOOL SHEEP

Fatten different from wool lambs
  More like goats: from inside-out
More resistant to parasites
  Less expense and ideally suited
to pasture based production
Studies show they produce a lean
meat with little or no mutton taste
SHEEP AND GOAT NUTRITION, HEALTH, REPRODUCTION, ETC.

1. Lessons learned in meat goat production will apply to hair sheep as well
2. There is evidence that hair sheep MIGHT be more hardy and resistant to common problems associated with goats
3. The market FOR HAIR SHEEP will continue to expand in the future

SO.....MOST MANAGEMENT PRACTICES ARE THE SAME FOR BOTH HAIR SHEEP AND MEAT GOATS
LET'S LOOK AT MEAT GOAT (HAIR SHEEP) MANAGEMENT, NUTRITION, & REPRODUCTION....WITH OUR PRIMARY CONCENTRATION ON MEAT GOATS

MEAT GOAT (HAIR SHEEP) 101

What is a MEAT GOAT?
Any breed or cross breed of goat that is primarily used in the production of meat!
Just like Hair Sheep!
TYPES OF MEAT GOATS

- Boer cross is the most popular and well known in the U.S.
- Kiko cross goats are gaining in popularity
- Spanish type goats are making a comeback

GOAT MANAGEMENT COVERS THE RAISING AND CARING FOR GOATS INCLUDING:

- Feeding
- Health Management
- Breeding
- Processing kids
- Facilities
HOW MANY GOATS CAN I RAISE?

Depends on management and resources.

- Quantity, Quality, Type of Labor
- Quantity, Distribution, Management of Capital and Land
- Own or Borrowed Money!

THERE IS REALLY NO “BEST” WAY TO RAISE GOATS (SHEEP). EXCEPT! THE MOST ECONOMICAL WAY POSSIBLE!

DO YOU WORK FOR THE GOATS?
DO THE GOATS WORK FOR YOU?
What factors are most important to insure a successful goat enterprise?

- Nutrition
- Reproduction
- Health
- Facilities
- Marketing

NUTRITION...

Is the Highest Cost Associated with Production!
NUTRITION.
WHAT DO I FEED MY GOATS?

- Ideally, roughage (pasture grasses, browse, and/or hay) should comprise a majority of the diet.
- Goats are selective grazers and prefer browsing to grazing when given a choice.
- Forage diets tend to cause fewer digestive problems.
- Browse diets cause fewer parasite problems.

DOE NUTRITION.

Define the stage of production and feed accordingly:
- Dry
- Breeding
- Early Gestation
- Late gestation
- Lactation
**DRY PERIOD..**

- Period between weaning and breeding
- Lowest nutrient requirements
  - Good quality pasture should meet most requirement needs
  - Regain weight lost during lactation
    - Need 2% of body weight
    - Need minerals free choice - salt, Ca, P
  - No pasture? Grass Hay and .5-1.5# 16% CP pelleted (preferred) ration

**BREEDING PERIOD..**

- Increase feed intake 2 - 3 weeks prior to breeding – Known as “Flushing”
  - Increase ovulation rate 5 - 10%
- Flushing
  - 1#/Hd/Day of Corn
  - Monitor body condition score to avoid under or over conditioned goats
    - Too fat or too thin
    - Best at BCS 2 - Greater response
**EARLY GESTATION..**

- First 100 days (Gestation is 150 Days!)
- Similar to dry feeding
- Very little fetal growth
- Take advantage of forage
- Monitor body condition score

**LATE GESTATION..**

- Last 50 days (gestation time 150 days)
- Most critical time – 70% of fetal growth
  - Poor nutrition costs production
    - Low birth weights, mothering ability, low milk production, ketosis
- Utilize pasture and supplement feeding
  - Need 4 - 4.5% of body weight
  - 2# - 4# good quality hay + 2# corn
**LACTATION..**

- Doe nutrition is the key to early kid growth
- Lactation peaks at 2 - 4 weeks
- Utilize pasture
- Feed at 4 - 5% body weight
  - 3# - 4# good hay + 3# - 4# grain

**BUCK NUTRITION..**

- Utilize pasture when available
- Monitor body condition 3-4 weeks prior to breeding
  - 4# of hay + 2# of grain
- Monitor body condition during breeding
**REPRODUCTION: EQUALS ECONOMIC SUCCESS!**

- Estrous cycle is 18 - 21 days
- Short day breeders (Oct. - Dec.)
- Flushing
  - ½ - 1# per head per day of corn
  - Deworm prior
  - Turn on to new pasture
- Monitor BCS (1 - 5)
  - BCS of 2 for best results

**REPRODUCTION..**

- **Accelerated Kidding**
  - 3 crops in 2 years
  - High input
- **BSE on Bucks**
  - Semen, libido, testicles, health
  - Trim feet
  - Good body condition
REPRODUCTION...

- The Buck effect
- Synchronizing
- Controlled breeding season
- Efficient management of facilities

WHEN TO BREED....

Annual kidding
- Age at puberty averages 6 to 10 months (affected by breed, season, and nutrition)
- Can breed doelings when they reach 2/3 of their mature weight
- Goats are seasonal in their breeding habits
  - Seasonality is affected by breed and individual
  - Pros and cons to different kidding seasons: winter, spring, and fall
HOW MANY BABIES DO GOATS USUALLY HAVE?

- Normal range from 1 to 5
  - Twins are the most common
  - Triplets frequent (less in sheep)
  - Yearlings often have a single
  - 4-5 kids is a rare occurrence
- Reproductive rate is affected by breed, age, season, and nutrition
- Genetics of reproduction
  - Number of offspring determined primarily by doe (number of eggs ovulated sets upper potential)
  - Sex of offspring determined primarily by buck

SHOULD I CASTRATE MY BUCK KIDS?

Yes, if . . .

- You don’t sell or separate buck kids from their dams and female siblings by the time they are three months old
- Your market discounts intact males
- You want better growth rates in late summer and fall

IF NOT, DON’T WORRY ABOUT IT!

There should be an economic benefit to expend the time, expense and effort
MEAT GOAT
HEALTH & DISEASE, PARASITES, AND FACILITIES

HEALTH..

- Diseases and Problems
  - Ketosis
  - Overeating
  - Parasites (worms)
  - Coccidia
  - Foot rot or scald
  - Pinkeye
  - General sickness
HEALTH.. MOST IMPORTANT THE LAST TRIMESTER

- Ketosis
  - Feeding management
- Overeating/Tetanus-Vaccinate (CD/T) 2-4 weeks prior to kidding
  - Gives immunity to the kids
- Vitamin E and Selenium (if needed)
- Deworm – offset post kidding rise in parasites (check dewormer for abortion possibility)

HEALTH KIDDING TIME

- Kid in clean areas
- Dip – Snip – Strip
  - Iodine navel
  - Trim navel
  - Inspect udder
- May give 1ml BoSe if needed
- See that kid gets colostrum
HEALTH..

KIDS 1 TO 4 WEEKS OF AGE

- Disbud (7 - 10 days) if of economic value
- Castrate (after 8 weeks to help prevent urinary calculi) if of economic value
- Vaccinate with CD/T (14 – 28 days) ALWAYS!
- Watch for scours
  - E-coli
  - Coccidia

MOST COMMON HEALTH PROBLEM FOR GOATS IN THE SOUTHERN U.S.

Internal Parasites
- Barber Pole Worm (Most Common)
- Coccidia
- Tapeworm
- Lung Worm
- Liver Fluke
- Meningeal Worm
HEALTH...

Deworming for the Barber Pole Worm

- Establish a program
- Check fecal samples
- Use FAMACHA
  - Deworm only when needed
  - Rotate wormers yearly or when there is no response
    - Rotate between “Families” or classes of products
  - Give orally over the tongue

THE FAMACHA© SYSTEM

FOR ASSESSING ANEMIA AND BARBER POLE WORM INFECTION IN SMALL RUMINANTS

<table>
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<th>Color</th>
<th>PCV (hematocrit)</th>
<th>Deworming recommendation</th>
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<td>1</td>
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<td>≥ 28</td>
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<tr>
<td>2</td>
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<td>23-27</td>
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<tr>
<td>3</td>
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<td>18-22</td>
<td>?</td>
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<td>4</td>
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<td>13-17</td>
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<tr>
<td>5</td>
<td>White</td>
<td>&lt; 12</td>
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The FAMACHA© system should be used as part of an integrated parasite management program that employs other best management practices.
HEALTH..

Use Strategic Deworming
- Hold feed - leave in pen (12-48 hours)
- Rotate to clean pastures
- Do not under dose
  - Metabolism is 2.5-3.0 times that of larger species
  - Rule of thumb – Use at 2.5 X cattle rate
  - Calculate rate based on the heaviest doe

Always select animals with resistance to parasites for replacements

CONTROLLING INTERNAL PARASITES

Pasture rest/rotation
Multi-species grazing
Browsing instead of grazing
Manage grazing height (above 4”)
Use alternative forages
Genetic selection for resistance within/between breeds
CONTROLLING INTERNAL PARASITES

Use selective deworming
Not everyone, not every month

Use proper drug rate
2-3 TIMES CATTLE DOSE!

Use fecal testing to determine effectiveness

**DRUG RESISTANCE IS A MAJOR ISSUE!**

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CONTROLLING INTERNAL PARASITES

Tapeworm-
Lung Worm-
Liver Fluke-
Meningeal Worm-

All are minor problems with good herd health management!
THE TAKE HOME MESSAGE!!!

Deworming

Establish a program
Check fecal samples
Use FAMACHA
Deworm only when needed
Rotate wormers ONLY when there is no response, then change class of product
Give orally OVER the tongue
Use the proper rate to avoid resistance!

HEALTH..
DIGESTIVE PROBLEMS

- There can be many different causes of diarrhea (scours) in goats
  - Infectious  
    bacterial, viral, protozoa  
  - Non-infectious  
    nutrition, management, stress
- Most digestive problems (bloat, acidosis) are caused by diet changes, usually sudden

Know what you’re dealing with and treat symptoms accordingly
WHAT ABOUT COCCIDIA?
**IS A SERIOUS PROBLEM IN KID GOATS**

- A single-cell protozoa that can damage the lining of small intestines and cause diarrhea
- Is species and site-specific
  - Use Prevention Options
    - Good sanitation
    - Proper stocking/penning rates
    - Use coccidiostats
      - Such as Bovatec®, Rumensin®, and Deccox® in mineral/feeds
      - Corid in water
    - Treat with Corid or sulfa drugs

***Rumensin®, Bovatec®, and Deccox® are toxic to horses, donkeys, and mules.***

HOOF PROBLEMS

- Foot Rot
  - Damage to the hoof
- Foot Scald
  - Irritation between the toes of the hoof
- Foot scald can occur seasonally
- Primarily in wet conditions
- Both foot scald and rot are inherited traits
  - Cull animals that are regularly infected!
RESPIRATORY PROBLEMS

Pneumonia
- Wet, dirty pens
- Poor circulation
- Dry, dusty pens
- Stress

Normal body temperature is usually 102-103°F
RESPIRATORY SYMPTOMS
COUGHING, NASAL DISCHARGE, CONGESTION,
WHEEZING, SNEEZING, FEVER-NOT ALWAYS INFECTIOUS!

Infectious Pneumonia
Usually a secondary infection caused by:
Viruses-Bacteria-Parasites

Non-infectious
Usually caused by:
Lungworms-Nasal bots-Poor ventilation-Dusty feed

QUICK HITS
URINARY CALCULI
CAUSES
Diet, water, genetics
Improper Ca:P ratio (2:1 recommended)
Stones usually lodge in the bend of the urinary tract know as the sigmoid flexure, or at the tip of the tract called the filiform; either situation prevents urination
URINARY CALCULI

SYMPTOMS
Restlessness, getting up and down
Straining to urinate
Pawing the ground
Tail twitching
Looking at abdomen
Vocalizations of pain and discomfort
Final stages; grinding of teeth

URINARY CALCULI

TREATMENT
Treatment for Urinary Calculi should be done by experienced veterinarians
In most cases the tip of the urinary tract must be removed
Blockage must be removed with a catheter
URINARY CALCULI

PREVENTION

Use a proper, balanced feed ration
Use a ration containing ammonium chloride or ammonium sulfate
Provide free choice mineral
Provide clean, fresh water
Know your water (pH) source!

OVEREATING AND TETANUS

Prevention

Vaccinate for clostridium perfringens and tetanus (CD&T)
Give a booster 2 weeks later
Booster young goats every 1-2 months
If you didn’t see the goat vaccinated, do it yourself!
OVEREATING AND TETANUS

TREATMENT

Usually the first sign of overeating is death

For tetanus, can inject tetanus antitoxin if diagnosed early, but not likely to help

Both overeating and tetanus will kill small ruminants!

If you didn’t see the animal vaccinated, do it yourself!!!

OTHER DISEASES OF CONCERN

Caseous Lymphadenitis (CL)
- Internal and lymph node abscesses
- Chronic, highly contagious

Treatment
- Formalin injected at 12:00 into abscess
- Drain, clean, and destroy any liquid leakage by burning
OTHER DISEASES OF CONCERN

Caprine Arthritic Encephalitis (CAE)

Colostrum is primary mode of transmission

OTHER DISEASES OF CONCERN

- **Johne’s Disease**
  - May be more common than we think
  - Is a digestive (wasting) type

- **Scrapie**
  - A federal regulatory issue that imposes USDA ID requirements
  - Is a neurological, wasting type
FEDERAL SCRAPIE PROGRAM

- Mississippi is included in the federal eradication program
- Premise I.D. is required for small ruminant operations
- Scrapie tags are required to market small ruminants
  - Tags and applicator are free from USDA
  - Contact:
    Charles Garrity
    Animal Identification Coordinator
    USDA/APHIS
    601-807-8085

FACILITIES..

- Corrals should be 5-6 feet tall
  - Use net wire or 4 X 4 welded wire
- Chutes
  - 12” wide, with smooth sides, slightly curved
    - Well lighted
    - Movement uphill
FACILITIES...

Sheds
- Allow 5 sq. ft. per animal
- Need two sides minimum

Kidding area
- Can use jugs or hutches

FENCING...

- Net Wire
  - 12” vs 6” wire; at least 48” tall
  - Barbed wire on top and bottom
- Electric Fencing
  - High maintenance
  - Good for temporary or rotation systems
- Combination of net and electric is best

If you can throw water through it, a goat can go through it!
Never discount good Fencing systems!
PREDATORS...

- Dogs, coyotes, feral hogs
- Fencing is your best deterrent
- Consider guard animals
  - Dogs, llamas, donkeys
- Use night penning
- Kid in protected areas
- Consider traps, snares, and hunting

If you have coyotes, but don’t have losses, do not kill them
New coyotes with a taste for goat may move into the area

ALWAYS COVER YOUR BACKSIDE!

KNOW HOW TO SURVIVE IF THINGS START GOING WRONG…

KNOW YOUR LIMITS…
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livestock/goats and sheep
For more information
Budgets-publications-videos-power points

QUESTIONS?