

Goats 101

Presented by Maegan Perdue, University of Maryland Extension
Small Ruminant Seminar Video: <https://go.umd.edu/MDSmallRuminantYouTube>

Nutrient Management

- Does your state have a nutrient management plans?
 - Check with your extension office - they should be able to help
- Have a plan for dealing with mortalities and manure!
- Register herd through National Scrapie Eradication Program
 - She didn't elaborate on what this is or why it's necessary
 - Register here:
<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/sheep-and-goat-health/scrapie-tags/id>

What to know before buying:

- Ideal to buy 2-3 goats from same herd as this makes their transition easier
- ***If you purchase from an auction - have a lot of medication on hand
 - Often, even healthy animals can pick up parasites/disease when they go to auction
- Make sure you have a good hay source
- Make sure you have a veterinarian willing to work on small ruminants - in some areas they are hard to find!
- Supplies:
 - Feed and feeders
 - Water troughs or buckets
 - Hay and hay feeders/racks
 - Hoof trimmers
 - Syringes and needles
 - Thermometer
 - Access to dewormer and antibiotics
 - collars/halters and leads
 - Basic milking supplies (even if not doing dairy goats)

The bad about goats:

- They are susceptible to: barber pole worm, meningeal worm, and pneumonia

The good about goats:

- They need minimal equipment: hoof trimmers, collar/halter, and thermometer (she mentioned thermometer many times!)
 - What is the normal temperature for a goat? Google search: 101.5-103.5 degrees F
- Blood samples for pregnancy tests are cheap

Breeds

- She went over many types of meat and dairy breeds. I took brief notes on the meat goats we may be considering
- Kiko - hardy breed; almost seem parasite resistant
- Boer - great muscles; parasite susceptible
- Myotonic - muscular

Housing

- Needs to be draft free - can't just be pallets! (Can use pallets to build the structure and then cover the gaps)

Fencing

- Use a BIG gate - big enough to fit a tractor!
- Should have a permanent perimeter/boundary fence; can couple with interior electric fencing.
- For a permanent fence: can use welded wire combined with electric strand
- Need to train them to electric (can get caught in it initially; run into it instead of away the first time)
- Can use lambing jugs
- Dog kennels - they may tare it up pushing on it

Transportation

- Often can hire a trailer for occasional use
- Goat cages work too

Production System (meat goats)

- Reliable market
- Know your market - wethers or bucks?
 - Ethnic market? Religious holidays?
- Can sell through: direct sales, auction, on-farm slaughter

Types of meat goat farms

- Kids produced on farm and sold for meat
 - 365 days/year commitment
- "Finishing" - purchase groups of kids, feed, and resell
 - Often purchase bottle bucks from dairies
 - Seasonal commitment
- Meat goats sell very well in Maryland! (where the presenter is from)

Acquiring Goats

- Where to buy:
 - Auctions
 - Very risky because of disease and stress
 - Social media (facebook groups - illegal to sell on FB, but often things are "up for discussion;" craigslist)

- Breeders - look for breed association directories for breeds you are interested in
- Ask your Ag. Agent at your county extension office about local farms
- You can't eat spots!
 - Spotted goats are very pretty and often cost more, but are not any more functional
- Know the breed standards
- Inquire if animals have been tested for CAE, CL or John's (should have years of negative tests)
- Anatomy
 - Good structure
 - Any abnormalities?
- Kids are usually available in spring
- Recommends that we purchase older "culls" from nice herds
 - Can help build a good herd quickly, especially if does are already bred
- Bring goats into herds in pairs
- Start small with 3-5 goats
 - These are your test goats!
 - Goats need a buddy, so get 3 in case something happens to 1 of them
- Retain best doe kids and use them as your breeding does
- Change buck every other year
- Get scrapie flock numbers and tags
 - <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/sheep-and-goat-health/scrapie-tags/id>
- Start clean and stay clean (parasites)

Q & A

- What plants are bad for goats?
 - Many ornamentals; dogbane, nightshades (horsenettle), many others; pitted fruit trees
 - Keep animals where they belong and take good care of pasture
- Goats may not appreciate being kept with pigs
- Quarantine
 - 3-4 weeks from rest of herd
 - no contact with other goats (not even noses through the fence); far away!
 - Dry lots are good; not another pasture
 - Take care of quarantined animal last (best practice is to wear disposable boot covers)
 - Deworm
 - Do a fecal analysis before and after deworming
- Have any abscess tested for CL
- Deworming
 - FAMACHA - test to show parasite load in goats/sheeps
 - Shows if they're anemic
 - Determines if you need to deworm

- <https://www.sheepandgoat.com/online-famacha-certification>
- Deworm only the goats that need it; do combination treatments every time you treat

Small Ruminants: Raising 'Em

Presenter: Charlie Sasscer - University of Maryland Extension, Prince George County

Standard Production Breeding::

- Rams/bucks are added with ewes/does in the middle of October for March-April lambing/kidding
- They are short day breeders (high fertility in fall)
- Estrus cycle = 21 days

Fall Grazing - hopefully can graze until Christmas; then winter housing and feeding hay

If bred in fall - start adding grain in late February

4 weeks prior to lambing/kidding - vaccinate

Goat gestation is approximately 150 days

Jugging:

- 5x5 pen for doe and kids (ewes and lambs)
- Navel cord shortened, weighted and ear tagged; sometimes tail docked and castrated
- Jugging helps create a bond
- Say in jug-inn for 1-3 days
- If born on pasture, not usually jugged
- 4 goats and their kids in larger pen for 1-2 weeks
- Does with triplets - pen separately

Vaccination and pre-weaning health: 6-8 weeks

90 days old - weight taken; does moved to different pen; buck kids separated from doe kids

Kids grazed until reached desired weight or sent straight to market

Does:

- Graze to retain condition
- Cull does with poor reproductive performance
- Replacement does bred at about 7 months; may be kept in separate groups

Q&A

- Vaccines: CD & T of CDT (Clostridium perfringens type C + D and tetanus)
- Keep bucks as far away from does as possible (out of sight is best)
- How long to keep buck with does for breeding depends on how long or short you want your kidding window.

Small Ruminants - Keeping Them Healthy

Presenter: Susan Schoenian, University of Maryland Extension, Sheep and Goats Specialist

Biosecurity

- Management practices to prevent introduction or spread of disease-causing agents
 - Isolation! At least 2 weeks; up to 1-2 months
 - Not only new animals; anytime animals return home from being shown, etc.
 - Trim and inspect hooves; soak or spray with zinc sulfate
 - Give combination dewormer treatment and perform fecal egg count to prevent introduction of drug-resistant worms
 - Vet-client relationship is absolutely essential for getting “extra-label” medication
- Langston University has quality assurance program for goats:
 - Take the course here:
<http://www.luresext.edu/?q=content/introduction-meat-goat-quality-assurance-program-and-haccp>

Vaccinations:

- Only recommended vaccinations is 3- and 8- way clostridial vaccinations
 - 2 ml dose for CDT
 - 5 ml initial dose for Covexin-8
- Vaccinate pregnant females approximately 4-6 weeks prior to birthing
- Vaccinate lambs/kids at 6-8 weeks and 10-12 weeks of age
- Vaccinate orphaned kids earlier and more frequent
- Withdrawal period for clostridial vaccinations is 21 days
- Do's and Don'ts:
 - Use appropriately sized needles
 - Inject subcutaneously in loose skin neck region, over ribs, or behind shoulder
 - Change needles frequently
 - Don't draw vaccine with used needle
 - Use entire contents when opened
 - Dispose of sharps properly
 - 21 day withdrawal period

Hoof Diseases

- Foot Scald
 - Problem in high rainfall areas (>30 in.)
 - Red, irritated skin in the interdigital area between the toes
 - Facilitator of foot rot
- Foot Rot
 - One of the costliest diseases in the goat industry
 - Highly contagious
 - Infection of the hoof
 - Controlling and eradicating it:

- Causative organisms only live in the soil outside of the animal for 2 weeks
 - Examine all feet and sort animals into 2 groups (exposed & infected)
 - Trim hooves and soak feet in 20% zinc sulfate (Or spray individual hooves)
 - Put animals on clean ground
 - Repeat procedure every 2 weeks
 - Vaccination and antibiotic therapy can speed up eradication
 - Cull animals that do not respond to treatment

Respiratory Disease

- Can be caused by viral, bacterial, or parasites
- Treat with antibiotics and antiinflammatory drugs
- Prevent with vaccinations and good husbandry practices

Common Nutritional (metabolic) Problems

- Acidosis
 - Caused by the over consumption of concentrates
 - Build-up of lactic acid in rumen
 - Decrease in rumen pH
 - Treat with antacids
 - Prevent with good feeding practices (roughage in diet)
- Enterotoxemia (overeating disease)
 - Proliferation of toxins caused by sudden change in diet
 - Treat with anti-toxins and antibiotics
 - Prevent with vaccinations and good feeding practices

Bloat:

- Frothy (primary) Pasture Bloat
 - Associated with consumption of leguminous forage
 - Can also occur with high starch levels (fresh spring forage) and finely ground grains
 - Treatment:
 - Break down froth with mineral or cooking oil and pass a stomach tube
 - Trocharization of the rumen for late stage bloat
- Free Gas (secondary) Grain Bloat
 - Associated with grain feeding
 - Treatment:
 - Pass stomach tube
 - Treat with antacids
- Abomasal
 - Associated with artificial rearing of kids (bottle fed)
 - Prevent with proper milk feeding
 - Treat with sodium bicarbonate and antibiotics

- Clostridial vaccinations

Scrapie

- Fatal, degenerative disease affecting the central nervous system of sheep/goats
 - In same family of disease as mad cow and chronic wasting diseases
- Spread via placenta and placental fluids
- 2-5 year incubation period
- Low prevalence in US due to eradication efforts
- Scrapie eradication program includes mandatory ID of most sheep/goats when they leave farm of origin (1-866-USDA-TAG)
- Report and/or test scrapie-suspect animals

Pregnancy Related Diseases

- Pregnancy Toxemia (ketosis)
 - Low blood sugar
 - Caused by insufficient intake of energy during late pregnancy
 - Does carrying multiples most at risk
 - Treat with oral, SQ, or IV glucose
 - May need to induce parturition
- Milk Fever
 - Low blood calcium
 - Caused by insufficient intake of calcium during late pregnancy
 - Can also be caused by too much calcium in late gestation diet
 - Treat with oral, SQ or IV calcium borogluconate

Coccidia

- Single cell parasite that affects the small intestines
- Species (host) specific
- Not all strains pathogenic
- Causes diarrhea
- Threat with amprolium and sulfa antibiotics

Barber Pole Worm

- Control:
 - management/husbandry
 - Host immunity
 - Short duration grazing
 - Long rest periods
 - Minimum grazing heights
 - Mixed species grazing
 - Alternative forage
 - Browsing
 - Removing a hay or grain crop
 - Genetic selection

- Dewormers
 - Proper use
 - Maintain refugia: worms in refuge not exposed to dewormers
 - Targeted selective treatment or non-treatment (only treat those with highest need)
 - Only treating animals that require deworming or would benefit the most from treatment
 - Reduces deworming
 - Increases refugia: worms in refuge; still susceptible to dewormer(s)
 - Three decision making tools
 - FAMACHA eye anemia system
 - Five Point Check
 - Performance indicators
 - Copper Oxide Wire Particles (COWP)
 - Proved to have effect against barber pole worms
 - May improve efficacy of dewormer when used in combination
 - Tiny metal rods (less potential for copper toxicity compared to copper sulfate)
 - Available as a supplement for goats (2, 4 g) and cattle (12.5 and 25 g)
 - Can repackage into smaller doses for sheep/goats
 - Selectively treat
 - Kids: 0.5-1g
 - Mature goats: 1-2 g
 - Know copper status of your farm

Bioworma

- Feed-through fungus that traps and kills roundworm larvae in the manure
- No effect on animal
- Significantly reduces pasture contamination
- Feed when temperatures are over 40 degrees F to most susceptible (periparturient female and kids)

Small Ruminants - Feeding Them

Jeff Smeler - Washington County, MD, University of Maryland Extension

Guidelines on Feeding the Flock:

- The amount of hay in each ration is the amount the animal must eat, not necessarily the amount you put in the feeder
 - You must take into account any wasted feed and adjust accordingly
- TDN - Total Digestible Nutrients - calculation to estimate energy in feed
- Hay types
 - Alfalfa hay: crude protein content of 17%
 - Clover hay: crude protein content of 15%
 - Mixed hay: 50/50 grass/legume with 13% crude protein
 - Grass hay: 10% crude protein
 - Timothy hay - not good for sheep (what about goats?)
- Grain types
 - Corn - coarsely cracked
 - Barley - whole
 - Commercial feed - complete feed prepared at feed mill
- All rations are the amount to be fed daily
- Always change feed gradually
- Flock should always have access to a **loose** trace mineral salt formulated for goats in a covered feeder
- A good pasture has lime applied as needed and is fertilized every year
- Several distinct feeding periods based on production cycles

Maintenance (dry period, not production-phase; pets)

- During this period, the goal is to maintain body weight and condition
- 1.5% - 2% of body weight (dry matter intake)
- Pasture or 2 ½ to 4 pounds of grass hay
- No grain feeding necessary

Flushing (2 weeks before and 2-4 weeks into breeding season)

- The body condition affects the number of eggs she will ovulate
- Ovulation rate sets the upper potential for litter size
- The goal of flushing is to improve the body condition by getting them to gain weight
 - Increase the nutritional plane
 - Increase ovulation rates = higher kidding percentages
- Later in the breeding season, flushing may help improve embryo survival
- Does already in good body condition usually don't respond to flushing (BCS >3) (BCS = Body Composition Score)
 - Body Composition Score based on a 5 point scale
 - See handout from Jeff Semler
- Free access to pasture or 2 ½ to 4 pounds of grass hay plus
 - ½ to 1 pound of corn or barley per day

- Move to high quality, but non-legume pasture

Early to Mid-Gestation (First 15 weeks)

- The goal is to maintain body condition of mature females and increase condition of young females
- Nutrient requirements are only slightly above maintenance
- Young females should be fed separately from mature females (in ideal production system)
 - In addition to gestating, they are still growing and have higher nutritional requirements
- Free access to pasture or 2 ½ to 4 pounds of grass hay
- Grain feeding not necessary unless forage is exceptionally poor or females are under conditioned

Late Gestation (Last 6 weeks)

- Most critical period for female nutrition
- Does will gain weight during this phase of production
- 70% of fetal growth occurs during this period
- Mammary tissue is also developing
- Proper nutrition is necessary to prevent pregnancy toxemia (ketosis) and milk fever (low blood calcium)
- Nutrition affects the birth weights
- Higher mortality among small and large lambs/kids
- Oversized fetuses increase dystocia (birthing difficulties)
- Aim for a BCS of 3.0-3.5
- Young females should be fed separately from mature females
- Feed 4-5 pounds of a grass or mixed hay pulse
 - ½ to 1 pound of grain per day
 - 1.5 to 1.75 pounds of grain per day if expected kidding percentage is above 200%
 - 1 pound of grain for each fetus the doe is carrying
 - 1 pound of 16% crude protein ration if forage quality is low (meat goat does)
- Include Bovatec, Rumensin, or Deccox in feed or mineral to reduce coccidia in environment and to aid in the prevention of abortion caused by toxoplasmosis

Kidding

- There is no reason to push feed on does that have just given birth to their offspring
 - Too much feed early may increase the milk flow beyond what the babies can consume
- Does that have been properly fed in late gestation usually produce more than enough colostrum for their offspring
 - Collect and freeze the colostrum from single-bearing females
- Provide plenty of fresh, clean water
- Feed forage only for the first few day parturition

- Take a week to get the doe onto full feed

Early Lactation (First 6-8 weeks)

- Does have their highest nutritional requirements, especially if nursing multiple offspring
- Ideally, separate lactating females into production groups (singles, twins, triplets) and feed according to the number of offspring they are nursing
- Feed 4 to 7 pounds of hay pulse
 - 1 pound of grain per kid being nursed
 - Limit roughage intake of does nursing triplets
 - 1 pound of a 16% CP ration if forage quality is low (meat goat does)

Weaning

- A BCS of 2.0-2.5 is not uncommon at the time of weaning
- If early weaning, proper feeding management is necessary to prevent mastitis (udder infection)
 - Feed low protein and energy feed 5 to 10 days before weaning
 - Feed low protein and energy feed 3 to 5 days after weaning
 - Wean “cold turkey”

Kids

- Growing kids have the highest protein requirements (percentage-wise)
- Energy needs depend largely upon desired growth rates and genetic potential for growth
- Maximum growth is not always the most profitable goal
 - Replacement females should not be fed for maximum gain because excess fat will be deposited in the mammary tissue reducing future milk potential
- Feeding Kids
 - Free access to high quality pasture plus free choice goat minerals
 - Protein supplementation when pasture quality is poor (and to improve the resistance to barber pole worm)
 - Free choice hay plus ½ pound of grain per day
 - Increase grain to 1 to 1 ½ pounds if forage is poor quality
 - Include Rumensin, or Deccox in feed or mineral to reduce coccidiosis
 - Weanlings and yearlings: 1 pound of a 16% CP grain if forage quality is low

Bucks

- There is a tendency to overlook the nutrition of bucks
- Aim for a BCS of 3.0 to 3.5 at the start of breeding season
- Do not allow males to get fat
- Feeding bucks
 - Free access to pasture or hay pulse 1 pound of grain per day
 - Pasture or 4 to 7 pounds of average quality hay
 - Increase feed 4 to 6 weeks prior to breeding season, if necessary
 - Males may require 1 to 2 pounds of grain per head during breeding season

Protein levels

- 40-70 pound kids = 16% CP
- 70 pounds and up = 14% CP
- Old crop kids = 12% CP
- 16% CP after weaning; 19% if kids are weaned early

Q&A

- Second cutting hay better than first; if labeled "horse," generally more expensive
 - Ask hay seller for forage analysis
- How to evaluate field for quality
 - Bare spaces?
 - Learn to identify grasses
 - University of Wisconsin
 - Southern Forages
 - Dense: forbs, grass, or legume?
 - Add bluegrass to overseed mix
- Hay is usually cheaper than hay pellets
 - Leafy hay = better
 - Stemy = more fiber - not as good
 - Legumes in it = good
 - vetch/alfalfa, flowers - not as good
 - Seed heads = more mature hay
 - Should test hay!

Small Ruminants - Marketing Them

Presenter: Susan Schoenian, Sheep and Goat Specialist, University of Maryland Extension

Marketing Categories: meat, fiber, dairy, vegetation control, agritourism

Meat

- Marketing Alternatives
 - Public auction
 - Electronic auction
 - Marketing cooperatives
 - Abattoir (slaughterhouse)

New Holland, PA - one of the most influential auctions in the US

- Check market reports!

Selling to Auction

- Pros
 - Convenient, especially nearby auctions
 - Can sell almost any sheep or goat
 - May have special sales prior to major holidays
 - Auctions are bonded; guaranteed payment
 - Price discovery - supply meets demand
- Cons
 - Selling fees can be high
 - Transportation costs can be high
 - Shrink can be high
 - Price not known ahead of time
 - Prices can be volatile, especially at small volume auctions
- Auction tips:
 - Selling approximately 1 week before holiday
 - Goat does go up around holidays, but not as much as lamb
 - Goat is consumed year round
 - Know how to read a sales report!
 - Optimal weight for your production system/profit
 - Optimal condition (flesh, fat, sex, tails)
 - Aim for highest net prices/profit
 - Selling lower off the farm may be better than time/effort to take to auction for higher price

Direct Marketing

- Pros
 - You set price
 - No selling fees or commission

- Greater income/profit potential
- Connection with customers
- Cons
 - Scheduling slaughter
 - High slaughter and processing costs
 - Time consuming
- Slaughter Options for Direct marketing
 - 4 levels of inspection
 - Federal (USDA) Inspection
 - Can sell anywhere
 - Slaughterhouse directory: fsis.usda.gov
 - Highest level of inspection
 - State Inspections
 - Generally can't sell across state lines
 - About half of states don't have state meat inspection
 - Custom Exempt
 - Sell a live animal and customer picks up meat from butcher
 - Meat cannot be sold, traded, or given away
 - Some custom exempt establishments only process - do not slaughter animals (deer)
 - Personal Exemption
 - Slaughter for personal use; may not be sold
 - On-farm slaughter
 - A person may purchase livestock and slaughter it on-site, so long as seller doesn't participate in the slaughter and/or processing
 - Some states may prohibit this
- Tips for direct marketing
 - Know what your animals are worth
 - Calculate your total costs
 - Know what you customers want
 - Provide good customer service

Get Paid to Graze

- Goats best for controlling brush and browse
- Usually, dry females are used
- High health standard for animals - may need health papers and rabies vaccinations
- Need trailer to transport animals
- Consider all costs when deciding on jobs
- Solar grazing
 - Good for sheep, but goats are not recommended
 - ASGA - solargrazing.org