

A photograph of a person wearing a hat and a light-colored shirt, seen from behind, herding a large group of sheep in a grassy field. The sheep are clustered together, and the person is walking towards them. In the background, there is a dense line of trees under a slightly overcast sky.

# *2011 Tennessee Grazing/Browsing Planner*

*"Decisions based on goals, economics, environment and  
community"*

*Sponsored by: Tennessee Grazing Coalition*

### Body Condition Scoring (BCS) Guidelines

	Thin (1 – 3)			Moderate (4 – 6)			Heavy (7 – 9)		
Trait	1	2	3	4	5	6	7	8	9
Visible Ribs	All	All	Most	Some	Smooth	Smooth	None	None	None
Visible Spine	All	All	Most	Some	Smooth	Rounded	None	None	None
Sternum Cover	None	None	Minimal	Minimal	Moderate	Moderate	Smooth	Round	Round
Tail Head Cavity Fill	None	None	None	None	Minimal	Moderate	Smooth	Filling with Fat	Fat Filled
Muscle Loss	Atrophied	Emaciate	Wasting	Obvious	Minimal	None	None	None	None

- In general, if does are too thin (condition score 4 or less), they are likely to have trouble re-breeding and need improved browsing/grazing or a supplement.
- Does with BCS 5 need additional supplementation or high quality browse before breeding season and during the winter months.
- Does rating BCS 6 or 7 need minimal adjustment in nutritional management.
- Heavy goats, BCS 8 or 9 are too fat and prone to kidding and health problems.

### Recommended Minimum Levels on Mineral Supplement Tags for Forage-Based Goats

Element	Level
Calcium	11 to 13%
Phosphorus (min.)	8%
Salt	9 to 10%
Magnesium (min.)	1%
Manganese (min.)	3500 ppm
Copper*	1700 to 2100 ppm
Zinc (min.)	6000 ppm
Cobalt (min.)	40 ppm
Iodine (min.)	200 ppm
Selenium (min.)	80 ppm
Vitamin A (min.) IU/lb	500,000
Vitamin E (min.)	1,000 IU/lb

- Calculations based on 0.25 to 0.31 ounces consumed per head per day
- Free choice loose mineral supplementation is recommended year round
- Select a product with multiple sources of cobalt, zinc, manganese and copper
- A free choice seaweed product (kelp meal) is beneficial year-round and especially when grazing tall fescue
- Sulfur is generally in excess in TN and can be antagonistic to copper, zinc, iron and manganese absorption
- **\* Caution: high levels of copper are hazardous to wool sheep; hair sheep are more tolerable to copper**

## Gestation Table Based on 149 Days

Breeding Date	Birth Date	Breeding Date	Birth Date	Breeding Date	Birth Date
01-Jan	30-May	07-May	03-Oct	10-Sep	06-Feb
08-Jan	06-Jun	14-May	10-Oct	17-Sep	13-Feb
15-Jan	13-Jun	21-May	17-Oct	24-Sep	20-Feb
22-Jan	20-Jun	28-May	24-Oct	01-Oct	27-Feb
29-Jan	27-Jun	04-Jun	31-Oct	08-Oct	06-Mar
05-Feb	04-Jul	11-Jun	07-Nov	15-Oct	13-Mar
12-Feb	11-Jul	18-Jun	14-Nov	22-Oct	20-Mar
19-Feb	18-Jul	25-Jun	21-Nov	29-Oct	27-Mar
26-Feb	25-Jul	02-Jul	28-Nov	05-Nov	03-Apr
05-Mar	01-Aug	09-Jul	05-Dec	12-Nov	10-Apr
12-Mar	08-Aug	16-Jul	12-Dec	19-Nov	17-Apr
19-Mar	15-Aug	23-Jul	19-Dec	26-Nov	24-Apr
26-Mar	22-Aug	30-Jul	26-Dec	03-Dec	31-Apr
02-Apr	29-Aug	06-Aug	02-Jan	10-Dec	07-May
09-Apr	06-Sep	13-Aug	09-Jan	17-Dec	14-May
16-Apr	13-Sep	20-Aug	16-Jan	24-Dec	21-May
23-Apr	20-Sep	27-Aug	23-Jan	31-Dec	28-May
30-Apr	27-Sep	03-Sep	30-Jan		

# Months of 2011

## Water

- Install overflow pipe into drainageway
- To reduce freezing, 1/16" of water flow through overflow pipe
- Open water troughs are preferred, 12" – 18" in depth for safety
- Ball waterers (not recommended), set slight gap around balls, drain when not in use
- Frequent cleaning of troughs recommended

## Feeding - Assess hay quality and quantity

- Feed hay in remote areas, distributes manure
- Feed hay up off the ground in clean bunks or racks; hay rings are of minimal benefit
- Fermented feed can cause listeriosis
- Kids can be trampled around feeders
- Dispose of strings / netting from hay

## Herding

- Slow down, speak in a normal voice
- To get livestock to bunch up, zig zag back and forth at edge of flight (recognition) zone
- Edge of flight zone is when animal begins movement
- Ease in and out of flight zone, apply pressure then release pressure
- Good herding dogs use flight zone strategically
- Position yourself so the animal can see you and kids
- Movement draws movement
- Direct the lead animal not the rear animal
- Train animals to follow by feeding minimal grain or rotating to new area
- Cull flighty animals
- Funnel-type layout working facilities for easy flow into corral
- Adjacent paddock serves as catch pen (or purchase a trained Border Collie and keep your mouth shut)

## Shelter

- Goats in good body condition tolerate cold best
- Wet muddy goats are vulnerable to wind and cold
- Portable shelters are low cost and multi-use
- Hoop structures constructed with welded wire panels and tarp
- Re-fabricated tobacco, cotton, or silage wagons are excellent portable shelters
- Living barn is a small clearing facing east surrounded by trees, preferably cedar or evergreen
- Shelter is of less importance if goats are not kidding or nursing

## January

List goals for the year



A. Peischel, Cheatham Co.

**Body Condition Score of 5 or 6 going into winter is important for good health. Winter annuals like wheat, oats, cereal rye or ryegrass provide excellent winter forage. Stockpiled tall fescue provides cost effective grazing. Browse plants for winter are privet and honeysuckle, both invasive plants which should not be planted but utilized.**

## Livestock- See Gestation, Mineral, and BCS table

- 100 lb. goat eats ~4 lbs/day, 120 lbs/mo., 1440 lbs/yr
- Animal Unit Equivalent (AUE) = 5 sheep or 6 goats
- Safest time to kid with nature is March and/or April
- Birthing outside in winter, provide suitable shelter
- Important records: Birth status (single, twins or triplets), birth weight, birth date, weaning weight, weaning date and BCS of does and wean-offs and dam and sire numbers
- Monitor body condition trend: up, down, or stable

## Fencing- goats tend to go under instead of over

- Driven post are 70% tighter than hand tamped post
- Fence to improve stock flow and vegetation utilization
- Parallel permanent fences makes temporary cross fencing easier
- Electric fence - 3+ ground rods 6' or deeper or placed horizontal in shallow soil
- Add more ground rods until voltage on ground rods is less than 500 volts
- Temporary cross fencing can be 3-4 wire electric poly wire, wire spacing 7,8,8,12 (35" high). Electro-net wire is another option (42-48" high)

## Seeding- (Excellent month for tree planting too)

- Evaluate pasture - do you need more tannin containing forbs (chicory, annual lespedeza, plantain, sericea, multiflora rose, burdock)
- Renovate with forbs/legumes, broadcast/frost seed a mixture of 4 lbs. red clover, plus 8 lbs. of kobe lespedeza per acre. Alone/ac.: 8 lbs. red clover or 25 lbs. of kobe lespedeza or 1.5 to 6 lbs brassicas (turnips, kale, mustard). Sericea lespedeza is best seeded alone in May, planting Max Q novel endophyte fescue the following fall
- Tillage for annual crops reduces parasite loads on pasture
- No-till crops on steep erosive soils

## Kidding Preparation-

- Vaccination does 3 weeks before kidding with clostridium perfringens C and D with tetnus
- Check body condition score, desirable BCS 6 (see chart in front)
- Kidding box- record book, iodine, ear tags, weigh scale
- Emergency box- flashlight, AI sleeves, lube, milk bottle
- Prepare area for inclement weather and creeping area

## Feeding

- Feeding in the afternoon increases number of does kidding in the morning
- Feed 300' or more away from sensitive areas (i.e. drainage ways, water areas, depressions, erosion prone areas)
- Move feeders at least once a week to improve manure distribution, reduce coccidia, and prevent denuding an area
- Feed on weedy areas and spots of bermuda
- Heavy Use Area runoff into water can cause disease; provide clean water source for goats in troughs
- Determine fertilizer and seeding needs based on acreage, hay, feed and livestock needs

## February Prepare for Kidding



Fence woods separate from pasture to prevent overgrazing woodland  
Browse plants need a minimum rest of 90 days or more for re-growth

## Forage Fertility

- Soil test fields not tested in the last 3 years
- When stocking rate is high, fertility inputs become more important
- Plan fertility program, split nitrogen (N) and potash (K) applications for better forage distribution and utilization
- Expect a very high response to potash (K) and phosphorous (P) when soils test low in P or K
- In the growing season apply N to pulse growth
- Organic fertility sources (manure, rock phosphate, gypsum) slowly release nutrients

## Browsing/Grazing- Limit graze and/or fence out streams and other sensitive areas

- Slight trampling of soil 1/2" or less can encourage legumes and forbs
- No-tilled winter annuals support animals better
- Plan pasture utilization (water, fence, feed, mineral, shade)

## Trailing

- Trails typically form between feed, water, shelter and shade
- High density short duration grazing/browsing reduces trailing
- Access through a gate can magnify trailing problems
- For livestock flow, where possible, place gates in corners

## **Fertility** - manure distribution can replace most of the commercial fertilizer requirements

- Apply 0 to 60 pounds of nitrogen to hay fields with less than 30% legumes, vary rate depending on desired production, earliest date to effectively fertilize
- Typically best to apply fertilizer or manure to pasture in fall and for hay fertilizer is best applied in the spring
- Typically 1 actual pound of nitrogen will produce approximately 50 lbs. more forage
- Apply maintenance phosphorus and potassium using soil test recommendation guidelines

## **Livestock**

- Easily accessible high quality free choice loose mineral/vitamin supplement (see table pg. 1)
- Young learn from mother, exposing kids to forage or feed with mother improves intake
- Sea kelp (organic vitamin and mineral source) minimizes effect of fescue toxicity, helps maintain higher body condition score, helps lower body temperature and livestock shed off better. Best fed fresh and separate from mineral/vitamin mix
- Introduce new stock to new vegetation slowly
- Caution: Do not overfeed high starch feed (e.g. corn, barley)



*G. Brann, Macon Co.*

Climbing areas: rocks, down trees and raised expanded metal help wear down hoofs. Trees that have slight angle but extend well above the ground can be a hazard if goats fall or get pushed off.

**Grazing/Browsing-** leave residual height of five to six inch minimum stubble to help minimize internal parasite infestation. Browsing is preferred for goats; tannin containing species add additional protection (Sericea, Kobe and Korean annual lespedeza, Chicory, Arrowleaf/Berseem clover, Crownvetch)

- If rotation stopped during the winter, begin pasture rotation before forage gets ahead of goats
- Limit graze winter annuals (winter annuals cost less than hay)

## **Heavy Use Areas** - seed bermuda on heavily used areas

- Clean winter feeding areas and barns
- Spread manure and hay on rested pasture or hay fields 300' or more away from water areas
- Rest pastures a minimum of 70 days following manure application

## **Seeding or Renovation**

- Thoroughly clean and calibrate drill
- Drill or use light tillage (aerate, disk, or harrow) prior to broadcasting seed in March
- Smooth and re-seed hay feeding areas and heavy traffic areas
- Evaluate forage stands for reseeding
- Place small seed at 1/4 and no deeper than 1/2 inch deep
- Planting too deep is a common problem
- Plan up to 30% of pasture for warm season plantings such as native warm season grass (eastern gamagrass, big bluestem and indiagrass), but not switchgrass due to it possibly causing photo-sensitivity in goats
- Plan to seed or vegetatively establish bermudagrass in heavy use areas only



## Livestock- See Gestation, Body Condition Scoring and Mineral Tables

- Important to maintain free choice loose mineral/vitamin supplement and sea kelp meal in separate covered containers
- Breeding now will give September kids and reduce problems with high endophyte tall fescue
- Use best quality pastures during the breeding and kidding season
- Order of animals nutritional demands: maintenance, lactation, growth, breeding (doelings need higher level of nutrition to re-breed)

## Graze/Browse

- Rotate faster when growth is rapid
- Greater leaf area residual allows vegetation to capture sunlight for quicker re-growth
- Manage to prevent shading of desirable vegetation
- 8" forage height at turn in, aids in the reduction of internal parasitism
- Keep forages in a vegetative state to early reproductive stage
- Goats select higher quality plant parts at various times of year
- Selectivity depends on plant diversity, stock density, learned behavior, timing, and duration of stay



*G. Brann, Macon Co.*

Goats eat pastures from the top down, reducing or eliminating mowing.  
Goat preference is for 1) woody plants, 2) forbs, and 3) grasses.

## Paddock Layout

- Layout paddocks based on topography, vegetation, and animal behavior
- Minimize the number of herds for simplicity of grazing/browsing management
- 70+ days between grazing minimizes internal parasites; 6 months rest is ideal in dry summer, 12 months + for ideal reduction of internal parasites
- Locate water so paddocks can be subdivided
- Place valves on lateral water lines

## Animal Behavior

- Small pens are easier when sorting goats
- Zig zagging in front of the herd slows them down
- Best to move goats to a new location early in the day
- Livestock guardians are moved prior to or along with goats to new area
- Settle (calm) animals after moving them to a new area, allow to graze or browse area you want animals to settle in
- Apply pressure and release pressure to keep animals grazing/browsing in the desired area

## Handling Facility- best in well drained area

- Gathering Pen- Ideally situated adjacent to multiple fields. Can be electro-flexinet/portable panels/permanent. Designed to handle entire herd. Minimum of 30 sq.ft./doe
- Holding area- Designed half the size of the gathering pen with a 4' exit gate into funnel alley
- Funneling alley- four foot wide alley funnels to a 2' gate opening into a 8' x 8' crowd box or a circular tub
- Working area- Design crowd box or tub for 3-way sort
- Sorting pens- A minimum of 3 pens, goat panels work great
- Headgate optional: adjustable width, caution with squeeze

- Seeding-** Seed, sprig, or vegetatively establish warm season forages
- Typically 30% of the forage system should be in warm season forages
  - Bermuda is typically not a preferred forage but good for heavy use areas
  - Native warm season grass can't be grazed close and requires less fertilizer
  - Switchgrass can cause photo-sensitivity in goats and sheep

- Fertility-** earliest date to increase warm season forage fertility
- Over 32% of fertilizer is wasted if soil pH is 5.5 or lower, too many fields in TN are below the desirable pH of 6.5. Soil test!!!
  - Where a second cutting or grazing is expected on cool season grass fields, apply additional up to 45 lbs. nitrogen in early May

## May Inventory Vegetation



*A. Peischel, Cheatham Co.*

**Crossbreeding with dairy goats increases milk production, frame size and nutritional requirements are higher**

### **Grazing/Browsing**

- Continue to rotate fast to keep forage vegetative or in early reproductive stage, don't allow undesirables to go to seed
- Now is a good time to heavily graze/browse broomsedge fields for eradication

**Weed/Forb Management** - Goats are the ultimate in biological weed control

- Goat foraging preference varies according to past experience, plant species presence, exposure with mother and peers, stage of plant growth, and environmental conditions
- Weeds typically not consumed by goats due to toxins: perrilla mint, horsenettle, wingstem (see June for additional plants)
- Multi-species, high density grazing and browsing and duration of stay helps control weeds
- Small ruminants are excellent nutrient recyclers since they consume plants that are deep rooted, then deposit nutrient rich pelletized manure on the surface
- Goat manure analysis is 16-6-14/100 lbs. body weight and varies by feed source

**Forage Harvest**-watch for wildlife nesting in hay fields; cutting fields toward cover allows escape routes

- Due to cost, most producers should buy hay in lieu of harvesting it themselves
- Although blackberry, sericea, ragweed, lambsquarters and ironweed are good forage for goats, stems in hay decrease quality. Best to harvest forage in a vegetative state. Don't allow weeds/forbs to shade out desirable grasses, therefore, browse before haying
- Sericea lespedeza, harvest 12"-18" tall, cut 1 day and bale the next. Sericea is a natural dewormer for goats and sheep. Au-Grazer is the most improved variety and has a moderate tannin level. Sericea can be invasive spreading to other fields
- Take core forage samples from bales.
- Forage test recommendations: not only report energy and protein but supplementation needed to balance a ration for livestock
- Target percent Crude Protein (CP) of hay is 10 to 12% and Total Digestible Nutrients (TDN) = 50 to 54%

## Livestock– Continue to monitor parasites with fecal egg counts and FAMACHA

- Evaluate does and bucks; sell unsound and inferior animals
- If you supplement feed make sure troughs are clean
- Clipping pastures helps reduce eye problems

## Animal Behavior –Best to have biodiversity in forages

- Sericea and annual lespedeza, mulberry, multiflora rose, plantain; concentrated tannins improve animal health
- Introduce new animals to tall fescue slowly to prevent future avoidance behavior
- Best if plants containing concentrated tannins make up 3% of the goats diet

## Forage Harvest

- Standing hay (stockpiled forage) is higher quality and saves dollars
- No hay option: divide total pounds hay fed per year by the number of days fed by the pounds consumed per head per day. (i.e. 5,000 lbs total hay fed per year/120 days feeding / 3 lbs/hd/day = 14 head)
- In above example reducing number of head by 14 (35%), allows little to no hay be fed reducing cost significantly
- Purchasing hay is typically cheaper than harvesting hay
- Before baling hay check percent moisture (ideally 18% or less)
- Forage test hay cuttings and record quality and storage location
- Maturity of hay has more to do with quality than species
- Cool season grass hay harvested with full seed heads is typically suitable only for dry does without supplementation
- Protect hay from weather damage, store hay off the ground, out of the shade and covered
- If rolls are outside store end to end with 3' between rolls, up and down hill and cover
- Hay cut in the afternoon is a little higher quality than morning cut
- Monitor hay temperature: Safe 120°F to 140°F, Caution 140°F to 160°F and Danger/Fire 160°F or higher serious danger of catching fire

## June Internal Parasite Management



Kids learn grazing / browsing selectivity and behavior from their mother  
Browsing sericea lespedeza is a natural de-worming technique

## Grazing–grazing close will stimulate crabgrass, dallisgrass and forbs

- Maintain grazing height above 5" or 6" for reduced internal parasite infestation and re-growth
- Separate water, shade, feed and mineral/vitamin mix for better animal distribution
- Training livestock to gather in a confinement area prior to turn out can aid in leading livestock in the field
- Supplementing in different locations will aid in grazing, manure distribution, reduces internal parasitism, pugging
- Creep grazing kids is an excellent way to extend grazing of quality forage which increases average daily gain of kids and improves condition of does. Increased condition = improved conception rates
- High density grazing reduces clipping needs, increases biodiversity, improves manure distribution, and animal health
- Place weaned goats on rested "clean" grass/browse pasture that is 8" or taller

## Livestock

- Sort off last animals through the gate, these animals are most likely the ones needing attention
- Check for internal parasites in at least 25% of animals using FAMACHA and/or fecal analysis
- Place newly weaned animals on clean rested forage. Young animals require the highest quality forage

# July

## Warm Season Forage



*G. Brann Macon Co.*

Sheep/Goats (multi-species) forage/browse forbs, perennial and annual grasses

**Grazing** - Inventory grass and estimate how long forage will last in drought conditions

- ❖ Evaluate forage conditions and inventory findings
- ❖ Consider clipping noxious weeds that goats don't eat, prior to them going to seed will reduce those weeds as well as promote growth of desirable forage
- ❖ Most plants are eaten when animals are maintained at high animal density ~4000 lbs/ac (40-100 lb animals/ac). Don't graze below 5"
- ❖ Consider creep grazing / browsing allowing kids to forage ahead of does

**Native Grasses** - Primary nesting season for quail is April 15 through August 15

- ❖ Excellent nesting area for birds and other wildlife
- ❖ Minimum 45 day rest from grazing improves grass production and nesting
- ❖ Cost share programs are available for establishment of wildlife habitat
- ❖ Eastern gamagrass (a primitive corn), is a high yielding, lower input grass alternative to bermudagrass
- ❖ Switchgrass is not recommended for goats, sheep and horses as it can cause photosensitivity

**Weed Control-** Goats tend to prefer a majority of weeds at later maturity

- ❖ High density grazing increases weed consumption
- ❖ Consider mowing weeds not consumed when blooming before seed forms

**Watering Facility-** Water consumption increases as temperature increases

- ❖ Keep water troughs clean and water fresh
- ❖ Portable water troughs allow most flexibility
- ❖ Forage intake drops when water intake drops
- ❖ Taste of water affects intake the most (sediment, algae, chlorine and fluoride)

# August

## Forage Management for Drought



### Conservation Programs

- Contact local USDA/NRCS office about available cost share programs for conservation practices
- A number of cost share programs are available: CSP, CRP, EQIP, TDA, WHIP and others
- Contact TDA for TN Agric. Enhancement Program cost share: livestock handling facilities, genetics, hay storage, working facilities, milk equipment and producer diversification (1-800-342-8206)

### Grazing - stockpile grass on winter feeding areas

- Mixed forage species pasture allows the animal a more balanced diet, reduces stress, increases intake and efficiency
- Old disk blade great to cover water line access or for floating fence brace
- Placing gates so livestock enter straight or at a 45-degree angle turn reduces wear of the gate area, enhances stock flow
- Goats continuously browse
- Cross fence for cattle 36" high allows goats to forward browse

### Drought - management should have started 60 or more days prior

- Inventory grass and predict how long grass will last, determine need for fertilizing, seeding and paddock subdivision prior to Oct.
- Close gates, feed hay or supplement in one field until other fields recover
- Multiple paddocks conserve forage for slow growth periods

### Water - placing water central in fields allows maximum cross fencing, water availability and health

- Properly planned placement of water points improves forage utilization and water quality
- Goats with a suppressed immune system require more water
- Rotational grazing and proper placement of water improves waste distribution by the animal
- Most manure is dropped around shade, water, and hay areas
- Separating shade, water, hay and mineral improves manure distribution
- Trough height ideally less than 12 inches

Before grazed with only cattle for 30+ years



A. Peischel  
Cheatham Co.

After grazing with goats and cattle, caution do not overgraze fragile lands

**Seeding** - Seed cool season grasses between August 15 and October 1. Seeding rate (lbs./ac) for tall fescue: agriculture, 12 - 18; critical area, 50; lawns 250+. Seed legumes such as clovers and annual lespedezas in late winter  
Seed sericea lespedeza between March 15 to June 1. Last date to harvest or browse sericea lespedeza to maintain stand is August 15

## Grazing

- ◆ During drought confine animals to one paddock or continue to rotate slowly and feed hay until other paddocks recover
- ◆ Do not graze/clip sericea lespedeza or native warm season grass fields until after frost unless you want a reduced stand
- ◆ Important to have an increasing body condition score for breeding and winter conditions, may need to supplement

## September Stockpile forage for winter



*G. Brann, Macon Co.*

Multi-species grazing offers opportunities for higher utilization and parasite management.

Cattle and horses act as vacuums removing worm larvae

**Fertility**- Soil test same time of year to monitor trend

- ◆ Fall is an excellent time to soil test, best to apply lime in the fall although anytime is okay
- ◆ Stockpiling: apply 0 - 180 lbs. of ammonium nitrate to tall fescue; defer grazing until after frost or later
- ◆ Stockpile 1 ac/6 does
- ◆ Avoid stockpiling poorly drained soils
- ◆ Tall fescue holds its forage quality better than any other perennial forage in winter
- ◆ Strip graze allowing animals access to 2-4 days of forage at a time

**Seeding**- Shape and seed eroded areas, clean out ponds, and perform other earth work

- ◆ Inventory existing plants, many times it's best to manage existing forages
- ◆ When planting tall fescue, seed no more than 1/2 bu./ac. of wheat as a companion; best to seed tall fescue alone
- ◆ Seed tall fescue now and overseed with legumes in February
- ◆ Chicory can be seeded at a rate of 3 to 4 lbs/ac or hairy vetch at 20-25 lbs./ac. If mixed adjust seeding rate
- ◆ Seed winter annuals in warm season forage or where fescue is less than a 50% stand
- ◆ No-till is an excellent planting method: don't plant too deep, no deeper than 8x the seed diameter

## Water Quality

- ◆ Stocker goats and replacements gain over 10% more on high quality water
- ◆ Water quality can affect growth, lactation and reproduction
- ◆ Poor water quality increases chance of diseases: Coccidiosis, Cryptosporidia, Salmonella, E. Coli and Leptospirosis. Kids are affected most
- ◆ Leptospirosis increases rate of abortion within 2-5 weeks of infection
- ◆ Foot rot, foot scald and foot abscesses are caused by wet conditions
- ◆ Chronic illness = poor weight gain, poor appetite, high susceptibility to infection and abortion
- ◆ Excess Sulfur causes copper and selenium deficiency
- ◆ High iron in water contributes to copper deficiency
- ◆ Test water if animals have a rough hair coat, unexplained illness, or breeding problems

## Livestock

- ◆ Criteria for culling:
  - ◆ Barren females
  - ◆ Bad teats or udders
  - ◆ Foot problems
  - ◆ Bad mouth (teeth)
  - ◆ Structural defects
  - ◆ Bad testicles
  - ◆ Unthriftiness
- ◆ Begin flushing does and bucks. Flush with fresh green pasture or 1/2 pound of feed/head/day for 2 to 3 wks before and after breeding season

## **Livestock-** Breed does now to kid in March

- Doelings should be 85 percent of their adult weight at breeding time and bred at 18 months of age to kid as two year olds
- Consider vaccinating does for leptospirosis 3 weeks before breeding
- Breeding does and bucks should have a BCS of 6

## **Grazing** - Plan for strip grazing

- Be aware of prussic acid (cyanide poisoning) from grazing sorghums and johnsongrass after frost. Wild cherry and other stone fruit trees when wilted have prussic acid. Grazing is safe 10-14 days after frost unless re-growth and freezing occurs again
- Nitrate poisoning, nitrate remains in hay, most common in a drought year, test for nitrates, nitrate concentration is highest in the base of the plant

## **Fencing** - Portable electric (polywire/electronet), High tensile electric, Woven wire, Welded wire

- Energizer - solar and mains (plug ins)
- Electric wire spacing (inches) for 6 strand Perimeter: Bottom 4" to 8", 2<sup>nd</sup> - 6", 3<sup>rd</sup> - 6", 4<sup>th</sup> - 8", 5<sup>th</sup> - 10", 6<sup>th</sup> - 12"
- Electric wire spacing (inches) for 4 strand Cross fence: Bottom 4" to 8", 2<sup>nd</sup> - 6", 3<sup>rd</sup> - 8", 4<sup>th</sup> - 10"

## **Water-** the most important nutrient

- Winterize equipment, pumps, tanks and buildings
- If building a pond install a 2" or larger supply pipe under the dam with a trough below the pond
- Check springs during low flow period, may need increased water storage if flow is low, septic tank works great
- Animal's weight = 50-80% water, milk is approximately 83% water

## **Drought Management** - cull

- Close gates or continue to rotate
- Early weaning based on BCS of does and/or begin creep feeding kids
- Offer hay or other supplement source
- Lease pasture or contract graze
- Evaluate forage supply prior to: April 1, July 1 and October 1 to make seeding and fertility decisions

**October** Prepare Breeding Charts:  
including doe number, sire number, and dam sire number



*G. Brann, Macon Co.*

**Maintaining a higher stubble height: improves animal intake, improves regrowth, improves stand life, reduces wear and tear on equipment, and reduces runoff**

## **Diet Selection** - Type of Diet (%)

<b>Animal Species</b>	<b>Grasses</b>	<b>Broadleaf forbs</b>	<b>Shrubs</b>
		<b>and legumes</b>	<b>and Trees</b>
Cattle	65-75	20-30	5 -10
Horses	70-80	15-25	0 - 5
Goats, Deer	20-30	10-30	30 - 50
Sheep	45-55	30-40	10 - 20

- One goat can be stocked for every cow without competing for the same forages



### Sheep Health Program-Scrapie: Recommend RR Rams

- To minimize internal parasitism: FAMACHA (before lambing, prior to weaning, at weaning, post weaning), Fecal Egg Count (FEC) (monthly or bi-monthly), breeding stock selection and culling, and pasture management (ideal pasture rest 90+ days)
- Observe for foot rot, foot scald, and foot abscesses
- Docking a commercial flock- no shorter than the caudal fold (minimizes prolapsing and fly strike)
- Caution: high levels of copper are hazardous to wool sheep; hair sheep are more tolerant of copper
- Offer a loose free-choice chelated vitamin/mineral mix and sea kelp

### Reasons for Guardians

- Long term monetary effect
- Minimize long term herd stress
- Consumption pattern changes
- Human anxiety

**Photo ID:** Top left clockwise: Great Pyreneans in snow, Katahdin hair sheep, Wool sheep, Hair sheep in annual ryegrass, Black face wool sheep, Dorper hair sheep, Llama, Donkey and hair sheep

### Grazing

- Sheep graze forage too close when pastures are grazed continuously and not allowed to recover between grazing
- Forage will last much longer strip grazed allowing animals access to only 3 to 4 days of grazing at a time
- Electric polywire is a convenient temporary fence for subdividing pasture
- Graze crop residues, leave 50% or more of surface area covered with residue, graze in dry times

### Feeding Areas- Feed 300' or more away from water areas, sinkholes, depressions & other sensitive areas

- When possible feed away from heavy use area to improve manure distribution and lessen cost of spreading
- Annual nutrient composition of sheep and goat manure: 16 lb. N, 6 lb. P<sub>2</sub>O<sub>5</sub>, 14 lb. K<sub>2</sub>O
- Manure is a benefit spread by sheep/goats on pasture or it can be a cost and environmental hazard offsite
- Filter runoff from heavy use areas where manure buildup occurs, 30' width of good pasture filters nutrients



## Grazing System Guidelines

- ❖ Rotate prior to impacting any resource (forage, animal, water, or soil)
- ❖ Follow landscape lines for paddock boundaries
- ❖ Locate water so paddocks can be further subdivided or use portable troughs
- ❖ The paddock ahead should be of higher quality than the one animals are leaving
- ❖ Rotate weekly or more often

## Summary- Take time to enjoy the fruits of your labor

- ❖ Small ruminants are challenging to manage but rewarding
- ❖ Grazing management and culling can reduce inputs significantly
- ❖ Utilize condensed tannins “medicinal pasture”
- ❖ Don't allow long term shading of desirable forage
- ❖ Utilize high density short duration grazing/ browsing
- ❖ Set grazing/browsing can cause some environmental problems
- ❖ Water, fence and culling give you control of livestock
- ❖ Match stocking rate to inputs and rest /recovery for plants
- ❖ Ancillary pasture management benefits can be significant

## Shelters

- Birthing season dictates shelter needs
- Too little shelter causes: smothering, disease, behavioral problems, denuding landscape
- Natural sheltering is preferred over portable shelters

## Grazing

- ❖ Strip graze stockpiled tall fescue
- ❖ Fence off 3 to 4 days of grazing at a time
- ❖ Adjust fencing as needed
- ❖ Winter annuals should be limit grazed

**Forestry-** fencing prevents livestock from escaping and decimating the woods

- ❖ Fencing allows for natural regeneration of tree seedlings / vegetative understory
- ❖ Grazing/browsing can be used to remove invasive and noxious plants and create disturbance for regeneration
- ❖ Goats/ Sheep are a good combination for Agroforestry / Silvopasture practices
- ❖ Soil compaction is reduced

## Livestock

- ❖ See Gestation, Mineral and Body Condition Score Tables in front
- ❖ Monitor does body condition score trend up, down, or stable. Put hand on spinal column and rib cage
- ❖ Although one big group is easier to manage, if needed divide the herd into groups for winter feeding
- ❖ Immediately cover dead animals with hydrated lime, ultimately bury dead animals 30” deep, reduces predator problems
- ❖ Review the years kid crop records and start plans for next years breeding season

## December - Environmental Adaptation



*A. Peischel, Cheatham Co.*

**Tennessee Grazing Coalition-** *partners interested in promoting the benefits of grazing management:* Members of the coalition include: Beef and Dairy Producer Raymond Cooper, Chairman; Beef and Goat Producer Bill Legg, Vice Chairman; Beef Producer, Terry Gupton, TN Association of Conservation Districts, Nelson Garner; TN Cattlemen's Association, Bud Guinn; TN Farm Bureau, John Wolfolk and Flavius Barker; TN Forage and Grassland Council, Perry Neal; TN Goat Producers, Steve and Connie Gillam; TN Llama Community; TN Sheep Producers Association, Ben Powell; TN State Agriculture Committee, Glen Long; Rural Resources, Sally Causey and Richard Spain. **Technical advisors:** Natural Resources Conservation Service, Greg Brann; Tennessee Department of Agriculture, Jim Nance; The University of Tennessee, Gary Bates; UT Experiment Stations, Dennis Onks; Tennessee State University, An Peischel.

### **Groups Committed to Livestock Production and a Healthy Environment**



**Natural Resources Conservation Service** – Grazing Lands Mission: Coordination, and transfer of technology that meets the needs of grazing land resources, landowners, managers, and the public. Strive to develop Total Resource Management Plans that address all resource concerns. Contact local field offices:

<http://www.tn.nrcs.usda.gov/contact/directory/index.html>



**Tennessee State University (TSU)** is a historical 1890's institution providing education through extension, teaching and research. Dr. An Peischel, small ruminant (goat and sheep) extension specialist, 615-963-5539 or [apeischel@tnstate.edu](mailto:apeischel@tnstate.edu)

*Cooperative Extension Program*



**Tennessee Association of Conservation Districts:** Mission: to take available technical, financial, and educational resources, whatever their source, and focus or coordinate them so that they meet the needs of the local land user for the conservation of soil, water and related resources. <http://tnacd.org/>



**Tennessee Beef Cattle Improvement Initiative:** Goals: Develop & Implement Marketing Strategies, Provide Producers with Superior Education Programs, Build Information Networks that Serve Producers' Needs, Identify & Promote Profitable Genetics, Improve Forage Production & Management, Market Consumer-Oriented Beef, Provide Information to Improve Cattle Health, Increase Political Support & Funding for the Tennessee Beef Industry.

<http://www.tnbeefcattleinitiative.org/>



**Tennessee Cattlemen's Association** mission is to provide the cattle feeders and producers in the State of Tennessee with an organization through which they may function collectively to protect their interests and work toward the solution of cattle industry problems; and to build the necessary good-will that will bring both governmental and public esteem and recognition to the industry. <http://www.tncattle.org/>

**Tennessee Farmers CO-OP** remains a cornerstone in the Tennessee communities in which retail outlets and TFC facilities are located. Because its roots reach back into the soil farmed by its organizers, Co-op always has the best interest of its patrons at heart. A knowledgeable, well-trained, and dedicated staff stands ready to serve the needs of each and every customer. Remember: Co-op offers quality products for everyone! <http://www.ourcoop.com/main/home.asp>





**The Nature Conservancy** The Duck River is considered a "Last Great Place" by The Nature Conservancy, and is widely regarded as the most biologically rich river in North America. Our Duck River Project works with a variety of partners and is committed to supporting landowners in their efforts to improve land condition and protect water quality throughout the upper watershed. <http://www.nature.org/>



**Tennessee Department of Agriculture**- The goal of TDA's Agricultural Resources Conservation Fund is to reduce or eliminate runoff from agricultural operations to the extent that soil particles or other pollutants do not enter the waters of the state. <http://www.state.tn.us/agriculture/>



**Tennessee Farm Bureau Federation**- To develop, foster, promote and protect programs for the general welfare, including economic, social, educational and political well-being of farm people of the great state of Tennessee." adopted February 15, 1923. <http://www.tnfarmbureau.org/index.html>



**Tennessee Landowner Incentive Program (TNLIP)**-The TWRA will provide 75% cost-share assistance and some cash incentives for best management practices implemented near streams. Practices will include stream exclusion fencing with alternative water sources, field borders, riparian buffer, heavy use area protection, stream crossing, and channel stabilization. To learn more about the TNLIP and what can be done on your property, **615-837-6008, visit the website at** [www.state.tn.us/twra/wildlife/tnlip](http://www.state.tn.us/twra/wildlife/tnlip)



**Tennessee Valley Authority** goals are to generate prosperity for the Tennessee Valley by promoting economic development, supply low-cost, reliable power, and supporting a thriving river system. Watershed teams work in partnership with business, industry, government agencies, and community groups to manage, protect, and improve the quality of the Tennessee River and its tributaries. TVA provides cost share funding for demonstration projects to encourage good land management practices to improve water quality. <http://www.tva.gov/>



**The University of Tennessee Extension** is an off-campus division of the UT Institute of Agriculture. It is a statewide educational organization, funded by federal, state and local governments, that brings research-based information about agriculture, family and consumer sciences, and resource development to the people of Tennessee where they live and work. <http://www.utextension.utk.edu/>



**World Wildlife Fund's** Southeast Rivers and Streams Private Landowner Incentive Program (PLIP) works with landowners to establish practices that enhance and protect water quality and biodiversity. We do this by helping landowners access Farm Bill programs and by providing incentives to landowners who install effective, progressive practices. <http://www.worldwildlife.org/about/>











# Months of 2012