Tennessee Grazing/Browsing Planner

"Timing Makes the Difference"

Sponsored by:

Tennessee Grazing Coalition

Body Condition Scoring (BCS) Guidelines

	Condition Score								
	Thin	/			Moderate	/		Heavy	
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 5 BCS 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.)	4000 ppm
Cobalt (min.)	40 ppm
Iodine (min.)	200 ppm
Selenium (min.)	80 ppm
Vitamin A (min.)	500,000 IU/lb
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 around
- Select a product with multiple sources of cobalt, zinc, manganese and copper
- A 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

* Caution: high levels of copper are hazardous to sheep

Gestation Table
Based on 149 Days

Breeding Date	Kidding Date		Breeding Date	Kidding Date		Breeding Date	Kidding 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			

Cover photo by G. Brann, Macon County

Water

- Install overflow pipe into drainageway
- Reduce freezing allow 1/16” of water to flow through overflow pipe
- Open water troughs preferred by goats.
- Ball waterers not preferred by goats, set slight gap around balls, drain when not in use

Feeding- Assess hay quality and quantity

- When conditions are right feed hay in remote areas
- Feed hay up off the ground in clean bunks or racks
- 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

Shelter –

- Goats in good body condition tolerate cold weather best
- Wet muddy goats are most vulnerable to wind and cold
- Portable shelters are low cost and multi-use
- Hoop structures constructed with welded wire panels and tarp. Place in area of windbreak or they become wind tunnel
- 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, & BCS table*

- 100 lb. goat eats ~4 lbs./day, 120 lbs/mo., 1440 lbs/yr
- Safest time to kid with nature is March or April
- Birthing outside in winter provide suitable shelter
- Important records: Birth status (i.e.single, twins or triplets) Birth wt., Birth date, Weaning wt. and BCS does and wean offs
- 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, place horizontal in shallow soil
- Add more ground rods till voltage on ground rods is less than 500 volts
- Temporary cross fencing can be 3-4 wire electric poly wire, wire spacing 7,8,8,10 (34” high). Electro net wire is another option

Seeding- (Excellent month for tree planting too)

- Evaluate pasture- do you need more tannin containing forbs (i.e. chicory, annual lespedeza)
- Renovate with forbs and legumes, broadcast/frost seeding. on upland fields seed a mixture of 4 lbs. red clover per acre, plus 8 lbs. of kobe lespedeza. Alone/ac.: 8 lbs. red clover, or 25 lbs. of kobe lespedeza, 1.5 to 6 lbs brassicas. Sericea lespedeza is best seeded alone, planting fescue the following fall, See May
- 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

Fence woods separate from pasture to prevent overgrazing woodland. Browse plants need a minimum rest of 45 days 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 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 (i.e. manure, rock phosphate, gypsum) slowly release nutrients

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

- Slight tromping ½” 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 and shade
- High density short duration grazing reduces trailing
- Access through a gate can magnify trailing problems
- For livestock flow, where possible place gates in corners

Fertility - earliest date to effectively fertilize

- Apply 0 to 60 pounds of nitrogen to hay fields with less than 30% legumes, vary rate depending on desired production
- Typically best to apply fertilizer to pasture in fall, hay fertilizer best applied in the spring
- Typically 1 actual pound of nitrogen will produce approximately 50 lbs. more forage
- If not applied in the fall, apply maintenance phosphorus and potassium according to soil test recommendations

Livestock

- Easily accessible high quality mineral 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, livestock shed off better, best fed fresh separate from mineral
- Introduce new stock to new vegetation slowly
- Caution: Do not overfeed high starch feed (grains)


Weighing kids


Shelter for kid
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 3" for tall fescue and annual ryegrass; 4" for orchardgrass and winter annuals. Five to six inch minimum stubble reduces internal parasite infestation. Browsing is preferred for goats: tannin containing species add additional protection

- If rotation stopped during the winter, begin pasture rotation before forage gets ahead of goats
- Limit graze winter annuals (winter annuals cost approximately $50.00/ac. less than hay)
- Last opportunity to clean fields of debris such as logs, rocks and limbs before they are hidden by growth

Seeding or Renovation

- Thoroughly clean and calibrate drill
- Drill or use light tillage (i.e. aerway, disk, or harrow) prior to broadcasting seed
- Smooth and re-seed hay feeding areas and heavy traffic areas
- Evaluate forage stands for reseeding
- Place small seed a 1/4 to 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 (i.e. eastern gamagrass, big bluestem and indiangrass, not switchgrass due to it causing photo-sensitivity in goats and horses)
- Plan to seed or vegetatively establish bermudagrass in heavy use areas

Heavy Use Areas

- Clean winter feeding areas and barns
- Spread manure and hay on rested pasture or hay fields 300' or more away from water areas

Livestock- See Gestation, Body Condition & Mineral Tables

- Important to maintain free choice loose mineral supplement and sea kelp meal
- 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 allow vegetation to capture sunlight for quick re-growth
- Manage to prevent shading of desirable vegetation
- 8" of forage 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, duration of stay

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

Guidelines for Paddock Layout

- Layout paddocks same direction as mowing
- Minimize the number of herds, for simplicity of grazing/browsing management
- Recommended days rest 45 days minimum
- 70 day between grazing minimize parasites, 6 months rest is ideal in dry summer, 12 months + for ideal reduction of parasites
- Locate water so paddocks can be subdivided without changing location of water

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

Corral Design- crowd pen best w/ level well drained surface

- Holding pen recommended dimensions: 40' long, 30' wide, funneling down to an 8' gate entering a short lane
- Eight foot wide lane leads to an 8' x 8' crowd box or an 8' circular tub
- Design crowd box or tub for 3 way sort
- Alley is optional: width of V-shaped alley is 8" at bottom & 14" at a height of 4', or 12" width for a straight wall chute for mature animals, adjust widths for larger framed animals
- Headgate is optional: adjustable width, use squeeze with caution

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 but require less fertilizer
- Switchgrass can cause photo-sensitivity in goats, sheep and horses

Fertility- earliest date to fertilize warm season forage

- 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

G. Brann, Macon Co.

Mixed species grazing improves utilization of multiple forages

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 broomsedge fields

Weed/Forb Manaagement - 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
- Weeds typically not consumed by goats due to toxins: perrilla mint, horsenettle,
- Consider spot spraying weeds, follow label recommendations
- Multi-species and high density grazing 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.
- Small ruminant manure analysis is 16-6-14, analysis will vary relative to 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, and ironweed are good forage for goats, stems in hay are negative quality. Best harvest forage in a vegetative state. Don't allow weeds/forbs to shade out desirable grasses
- Sericea 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. It is a moderate tannin variety. Sericea can be invasive spreading to other fields
- Consider taking a grab forage sample from windrows. Easier than taking a sample later but may over estimate forage quality
- Forage test recommendations: not only report energy and protein but supplementation needed to balance a ration for livestock
- Consider marking quality on lots of hay as moved from field (i.e. spray paint on rolls: {CP/TDN} or Green dot for boot to early head; Black dot for late head stage; Red dot for high moisture hay)

Animal Behavior -Best to have diverse forages

- Sericea and annual lespedeza, mulberry, multiflora rose, chicory; 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

Fertility- Apply fertilizer for warm season forages according to soil test recommendations and forage needs

- Soils testing low in P or K have tremendous response to application
- Ideally apply fertilizer prior to 1/2" to 1" rain

June-Weaning and Internal Parasite Management

Kids learn grazing / browsing selectivity from their mother.
Buckbush is an excellent browsing specie

Grazing-grazing close will stimulate crabgrass, dallisgrass and forbs

- Maintain grazing height above 5" or 6" for reduced internal parasite infestation
- Separate water, shade and feed for better animal distribution
- Training livestock to feed in confinement prior to turn out can aid in leading livestock in the field
- Only a mouthful of feed one or two times a week will keep animals trained to come when called
- 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
- Place weaned goats on rested "clean" grass that is 8" or taller

Forage Harvest-

- If purchasing hay it is typically cheaper to purchase hay in the field
- Consider harvesting excess pasture for hay
- Consider cutting every field for hay once during the year
- Before baling check moisture (ideally 18%) with moisture meter
- Test moisture by stuffing forage in a bucket then prod with moisture meter
- Forage test hay cuttings and record what 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 and out of shade
- If rolls are outside store end to end with 3' between rolls, up and down hill
- Hay cut in the afternoon is a little higher quality than morning cut
- Monitor hay temperature: Safe 120°F to 140°F, Caution, 140° to 160 ^{0}, and Danger/Fire 160° or higher serious danger of catching fire
- Temperature can build in hay particularly first two weeks or longer after baling

Livestock-

- Sort off last animals through the gate, these animals are most likely the ones needing attention
- Check for internal parasites in at least 10% of animals using FAMACHA and/or fecal analysis
- Place newly weaned animals on clean rested forage. Young animals require the highest quality forage

July- Pasture Management

J. Adkins, Macon Co.

Broadleaf forbs re-grow from buds and need about 45 days rest between browsing

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

- ❖ Evaluate forage conditions and inventory
- ❖ Clipping weeds goats don't eat prior to seeding will reduce those weeds as well as promote growth of desirable forage
- ❖ Most plants are eaten when animals are grazed at high animal density ~3000 lbs/ac (30-100 lb animals/ac) Don't graze below 5"
- ❖ Consider creep grazing / browsing allowing kids to graze ahead of does

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

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

Weed Control- Goats tend to prefer weeds in late season

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

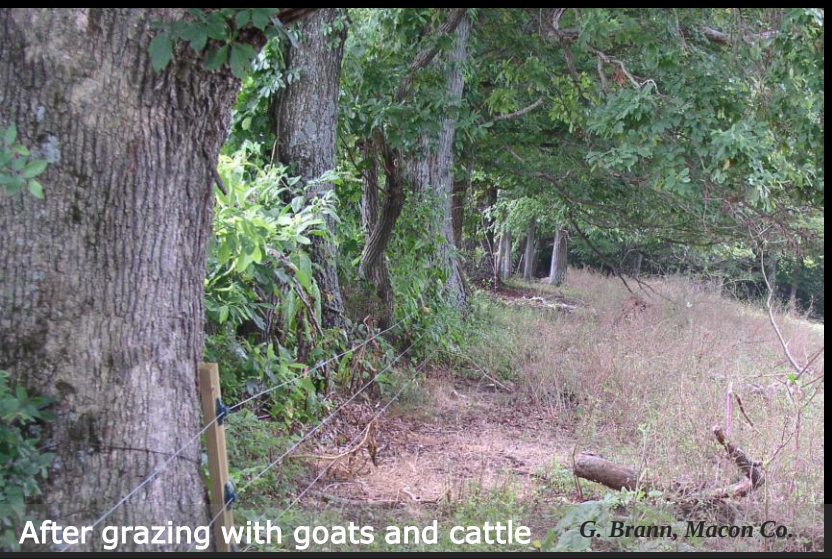
Watering Facility- Water consumption increases as temperature increases

- ❖ Keep water troughs clean
- ❖ Forage intake drops when water intake drops
- ❖ Taste of water reduces intake most (sediment, algae, chlorine and flouride)

August

Forage Management for Drought

Before grazed with only cattle for 30+ years



After grazing with goats and cattle

G. Brann, Macon Co.

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 lespedezas in late winter

Conservation Programs

- Contact local USDA/NRCS office about available cost share 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, Hay Storage, Cross fencing, working facilities, Milk Equipment and Marketing Incentives 615-837-5160

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 brace
- Placing gates so livestock enter straight or at a 45- degree angle turn reduces wear of the gate area
- Goats continuously browse

Drought Management

- 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 till other fields recover
- Multiple paddocks conserve forage for slow growth periods

Water- placing water central in fields allows maximum cross fencing

- Properly planned placement of water points improves forage utilization and water quality
- Herds travel as a group if travel distance is over 800-900' or lead animal travels over a hill or leaves shade for 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 & mineral improves manure distribution
- Use rack or guard to keep livestock out of open tank

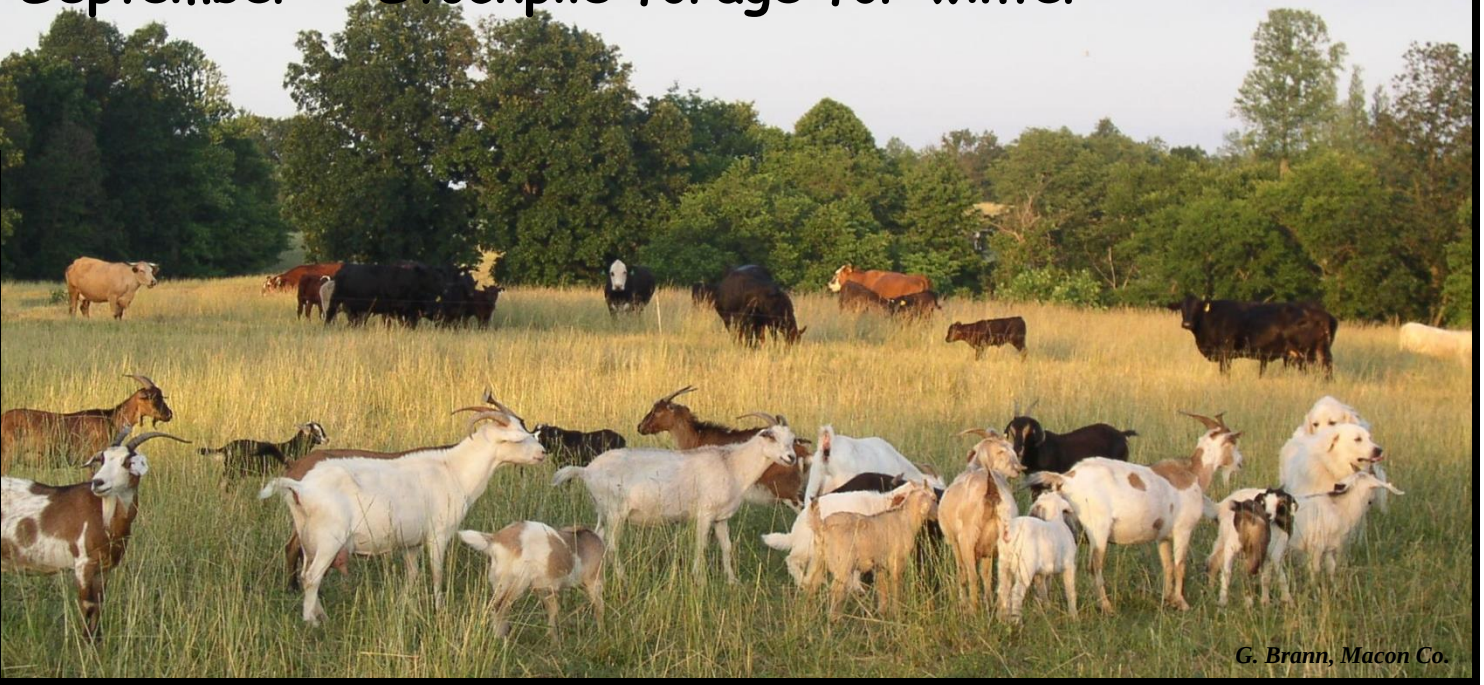
Livestock- Continue to monitor parasites with fecal counts and FAMACHA

- Typically worst month for internal parasites
- Evaluate does and bucks; sell unsound and inferior animals
- If you supplement feed make sure troughs are clean
- Clipping pastures will reduce eye problems

Grazing

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

September - Stockpile forage for winter



Multi-species grazing offers opportunities for higher utilization and parasite management.
Cattle 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 120 to180 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 2-3 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
- Control weeds and balance fertility prior to seeding
- When seeding tall fescue seed no more than 1/2 bu. 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 50% stand
- No-till is an excellent planting method: don't plant too deep and seedlings must have space

Water Quality

- Stockers gain over 10% more on high quality water
- Water quality can affect growth, lactation, and reproduction
- Poor water quality increases diseases: Coccidiosis, Cryptosporidia, Salmonella, E. Coli and Leptospirosis. Kids are affected most
- Leptospirosis increases rates of abortion within 2-5 weeks of infection
- Hoof action stirs up sediment and organisms lowering water quality
- Chronic illness = poor weight gain, poor appetite, high susceptibility to infection and abortion
- 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
  - Structural defects
  - Bad testicles
  - Unthriftiness
- Begin flushing does and bucks. Flush with fresh green pasture or ½ pound of feed/head/day for 2 to 3 wks before and after breeding season.

Livestock-

- Breed by weight rather than by age. Doelings should be 75 percent of their adult weight at breeding time
- Vaccinate does for leptospirosis 3 weeks before breeding
- Breeding does now will kid in March
- Breeding bucks should have a BCS of 6

Grazing - begin strip grazing at water point

- Be aware of prussic acid (cyanide poisoning) from grazing sorghums and johnsongrass after frost. 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

Seeding -

- Seedlings need space and light to establish
- More management is typically needed not more seed
- Seed winter annuals in warm season forages
- Fertilize perennial cool season forages (30 lbs. N) in lieu of overseeding unless perennial stand is 50% or less

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 90% water

Drought Management

- Close gates or continue to rotate
- Early weaning
- Buy hay or other supplement source
- Lease pasture
- Contract graze
- Evaluate forage supply prior to: April 1, July 1 and October1 to make seeding and fertility decisions

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 (%)

Animal Species	Grasses	Broadleaf weeds and legumes	Shrubs and Trees
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

November

Photo ID

Starting in upper left going clockwise – Great Pyreneans in snow, Maremma, Llama, Donkey, Black bear, Coyote, Kommodore, Anatolian Shepards, Akbash pups, Akbash, Great Pyrenean

Selection of a Guardian Dog

- Dam and sire are working guards
- Whelped with livestock
- Raised with livestock
- Facilitated to be successful
- Disposition

Reasons for Guardians

- Long term monetary effect
- Long term herd stress
- Consumption pattern changes
- Effect on guardians
- Human anxiety

Annual Health Program

- Parvovirus
- Rabies
- Lyme Disease
- 7 Way (canine distemper, parvovirus, canine coronavirus, parainfluenza, adenovirus Type 2 and leptospira bacterin)
- Monthly-Heartworm medication

Grazing

Inventory standing forage available and hay supply

- If needed begin grazing stockpiled grass
- After frost, sweetness and palatability increase in tall fescue
- Forage will last much longer strip grazed allowing animals access to only 3 to 4 days of grazing at a time
- Begin grazing at water point and allocating about 1 ac./30 head / 3 days: adjust according to yield and by trial & error
- Electric polywire is a convenient temporary fence for subdividing pasture
- Graze crop residues, leave 50% or more of surface 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 off of heavy use area to improve manure distribution, and lessen cost of spreading
- Annual nutrient composition of goat manure: 16 lb. N, 6 lb. P_2O_5, 14 lb. K_20
- Manure is a benefit spread by the goat on the 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
- ❖ Keep paddocks square to rectangular if possible
- ❖ Locate water so paddocks can be further subdivided
- ❖ The paddock ahead should be of higher quality than the one animals are leaving
- ❖ Monthly rotations changed to weekly rotation increases carrying capacity up to 20%

Grazing

- ❖ Start temporary fence at water source
- ❖ 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 into woods

- ❖ Fencing allows for natural regeneration of tree seedlings
- ❖ Livestock exclusion is most important following timber harvest
- ❖ Soil compaction is reduced

Livestock- See Gestation, Mineral and Body Condition Score Table in front

- ❖ Monitor does body condition score trend up, down, or stable
- ❖ 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 and start plans for next years breeding season
- ❖ Electric tapes tied to post, held at other end moves trained animals effectively

Summary-

Take time to enjoy the fruits of your labor

- ❖ Small ruminants are challenging to manage
- ❖ 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
- ❖ Set grazing can cause some environmental problems
- ❖ Water, fence and culling give you control of livestock
- ❖ Match stocking rate to inputs
- ❖ Ancillary pasture management benefits can be significant

Drought Insurance

- ❖ Maintain fertility
- ❖ Stockpile forage
- ❖ Diversity of forages
- ❖ Proper grazing heights
- ❖ Multiple paddocks can increase stockpile growth up to 60 days

A. Peischel, Cheatham Co.

Tennessee Grazing Coalition- partners interested in promoting the benefits of grazing management: Members of the coalition include: TN Association of Conservation Districts, Nelson Garner; TN Cattlemen's Association, Bud Guinn, Chairman; TN Farm Bureau, John Wolfolk and Flavius Barker; TN Forage and Grassland Council, Perry Neal; TN Goat Producers, Steve and Connie Gillam; TN Horse Council, 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 and Vic Simpson; 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 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, contact Gray Anderson at **615-837-6008,** Gray.Anderson@state.tn.us**, or visit the website at** 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/

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

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/

Design and Layout: Greg Brann, State Grazing Lands Specialist, NRCS, Tennessee and Dr. An Peischel, Small Ruminant Specialist, Tennessee State University and The University of Tennessee

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References: USDA/NRCS Field Office Technical Guide Section IV; USDA/NRCS Range and Pasture Handbook; Tennessee Farmers CO-OP, Agronomy, Forage Management Calendar; The University of Tennessee: Beef IRM Calendar, PB378, Field Crops Seeding Guide, P & SS# 185, Grazing Land & Livestock Resource Inventory- Edition II; Minimizing Losses in Hay Storage and Feeding, and Southern Forages, Don Ball and Associates.

Livestock Record: Premises ID Number(s)_____

Doe ID	BCS/ Date	Kid Birth Date/Wt.	Kid ID, Color, and Sex	Wean Wt. /Date	Other (i.e. Source of animals, Breeding date, Sire, etc)
Age Source Verification- record date of first kid born per lot of goats, if year round kidding record date of first born kid every 3 months.					

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Pasture Record: USDA/NRCS programs like EQIP and CSP require grazing records for participation

Field/ (Acres)	Livestock	Grazing Record				Notes
	Type Number Animals/Pounds	Date Grazed	Begin Grazing Ht	Estimated Days Grazing	Actual Days Grazing	Grass Stand (Good, Avg, Poor) Weeds, Fencing, Water, Rainfall

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