

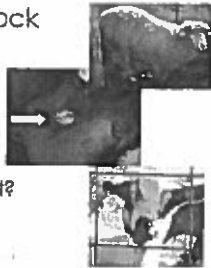
Small Ruminant Health

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Health

- First step to healthy animals is selection from healthy herd/flock
- BEWARE of sale barns
- Look at animals and ask owners questions: Abscesses/knots (CL)? Lameness/foot issues? Soremouth? Pinkeye? Abortions/reproductive problems? How often deworm/treat? Vaccines? Breathing hard?
- Look at records of performance



Know What 'Healthy' Looks Like

- Runs to feed
- Bouncy, springy step
- Bright eyes
- Carries head upright
- Flashy tail
- Healthy coat
- Playful
- Round solid pellets (stool)



Photos: Susan Schermann, Seaboard Farm

Signs of Problems

- ▶ Depressed, not getting up and moving around
- ▶ Standing hunched with head and tail down
- ▶ Coughing, wheezing, and/or breathing hard
- ▶ Not interested in others and playing
- ▶ Off feed/not eating
- ▶ Grinding teeth



Photos: Susan Scheerman, Badlands Farm

Signs of Problems

- ▶ Dull eyes
- ▶ Ears hanging
- ▶ Diarrhea
- ▶ Runny nose
- ▶ Lameness
- ▶ Poor body condition
- ▶ Last ones come up (dragging)



Photo bottom: Susan Scheerman, Badlands Farm

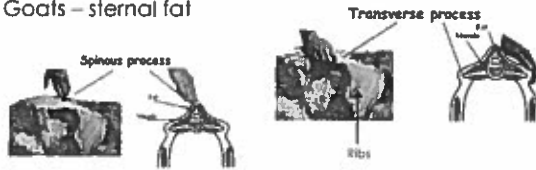
Good Management = Good Health

- ▶ Adequate Facilities
- ▶ Quarantine / Isolate
 - ▶ Prevent introduction of disease and parasites to animals on farm
- ▶ **KEEP RECORDS!**
- ▶ Adequate forage & water
(1-4 gallons head/day; warm in winter, cool summer)
- ▶ Good NUTRITION supports the immune system; BCS



Body Condition Scoring (BCS)

- Must get your hands on them
- At least backbone and ribs
- Goats – sternal fat



www2.urext.edu/goats/library/field/bcs07.pdf

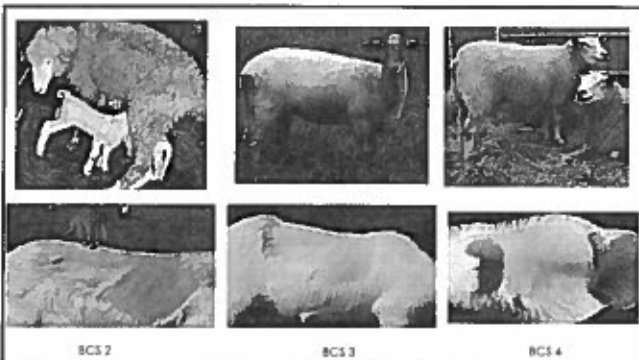
The goat pictured is a BCS 1

Body condition score (1-5)

| | Top of backbone - Spine | Side of backbone - Transverse processes | Muscle | Fat |
|---|---|--|----------------------------|------------|
| 1 | Individually clearly felt, sharp, obvious | Fingers easily pass underneath | Very little | None |
| 2 | Form a smooth line with deep undulations | Smooth round edges | Concave | Very thin |
| 3 | Only slightly detectable undulations | Well covered have to push firmly to get fingers underneath | Not concave Not convex | Moderate |
| 4 | Only detectable with firm pressure | Cannot be felt at all | Maximally developed Convex | Thick |
| 5 | Not detectable | | | Very thick |



Score: 1 2 3 4 5



Basic Health Program

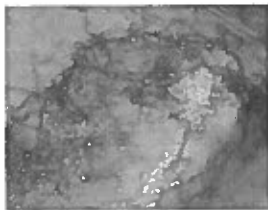
- ▶ Select healthy animals
- ▶ Proper feed/management program
- ▶ Cull problem animals
- ▶ Vaccinate as needed (CD&T minimum)
- ▶ Control parasites

Biggest Issue

- ▶ Parasites (stomach/gut worms)
 - ▶ Worst one – Barberpole worm, sucks blood, kills fast
 - ▶ Others can cause weight loss, scours (diarrhea), rough hair coat
 - ▶ Dewormers are no longer working as they should; deworming too much will make it worse; only deworm those that need it



Barberpole worm (*Haemonchus contortus*)



Barberpole worms in a goat stomach



Pale eyelids in a sheep caused by a barberpole worm infection



How do we decide who to deworm?

Can use the FAMACHA® eyelid color scoring system to estimate anemia/blood loss in sheep and goats (causes of anemia: Barberpole, liver fluke?, coccidia? diseases?). ALSO BCS!!!

| | Eye lid color | Packed cell volume, % | Treatment recommendation | |
|---|---------------|-----------------------|--------------------------|-----|
| 1 | Red | ≥ 28 | Optimal | No |
| 2 | Red-Pink | 23-27 | Acceptable | No |
| 3 | Pink | 18-22 | Borderline | ? |
| 4 | Pink-White | 13-17 | Dangerous | Yes |
| 5 | White | ≤ 12 | Fatal | Yes |



Can get FAMACHA card/ certification by going to a workshop (www.wormx.in/g). Talk to your county Extension agent(s) or through your veterinarian.

Bottle jaw

Sub-mandibular edema



Barberpole worm and nutritional/disease issues can also cause

Other small ruminant worms

Stomach and intestinal – scours, weight loss, rough hair coat, poor doers

- *Trichostrongylus* spp (Hair worm, others)
- *Nematodirus* (Thin-necked Int. worm)
- *Oesophagostomum* (Nodular worm)
- *Trichuris* (Whip worm)
- *Ostertagia/Teledorsagia* (Brown stomach worm)
- *Bunostomum* (Hookworms, not same as dogs)

• Tape worms (only ones can "see" in feces)

Others: liver fluke
Not readily in our area

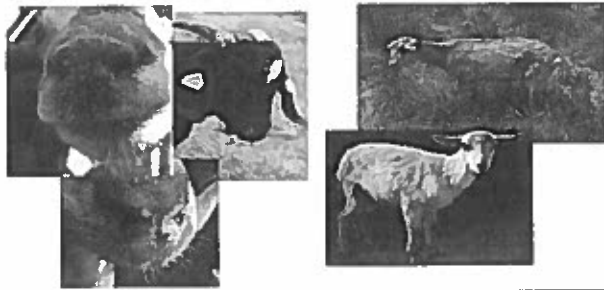


Deer worm – Meningeal worm – stumbling, weak hind end, death; deer infect snails in low-lying areas, goats/sheep eat snails in grass/forages

Dag Scores –deworming and health ("Dingle-berries", Dirty butts, Poopy butts)

| Dag score | Description | Treatment recommendation |
|-----------|--|--|
| 0 | No fecal soiling | No indication for treatment |
| 1 | Very slight soiling on edge of tail | No treatment |
| 2 | Slight soiling on edge of tail and on each side | Usually no treatment |
| 3 | Moderate soiling of tail and wool Dag formation | Consider treatment |
| 4 | Severe soiling extending far into wool/hair; Severe dag formation | Treatment, crutching (trimming hair if long) recommended |
| 5 | Very severe watery diarrhea extending to hocks | Treatment and crutching (trimming hair if long) essential |

Snotty Nose? Coat Condition?



Deworm with???

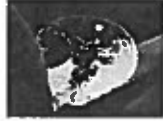
- ▶ Know what dewormer works on your farm
 - ▶ DrenchRite (\$450, UGA), FECRT (on-farm testing)
- ▶ Only three classes
 - ▶ Drug name ends in -dazole (widespread immunity in U.S.)
 - ▶ Safeguard, Panacur, Synanthic, Valbazen
 - ▶ Drug name ends in -ectin (widespread immunity in U.S. except moxidectin/Cydectin -but growing)
 - ▶ Cydectin, Ivermectin, Eprinom, Dectomax
 - ▶ Nicotinic (levamisole)
 - ▶ Prohibit, Strongid, Goat Care 2X, Rumate!
- ▶ If one doesn't work, others will not (or will not work as long)
- ▶ Once worms are immune, does not reverse
- ▶ If deworm and don't get better or have to deworm again in 3-4 weeks, worms likely have/getting immunity



What else can we do? "Whole farm" approach:

► Understand parasites

- They mate in the animal and poop out eggs. takes a long time for Baberpole to die in animal and on pasture
- Worms like warm, moist weather
- Most larvae/worms in first 2-4" of grass/forage



► Manage animals

- Young, growing animals have the most problems, especially just weaned (intact male kids worst)
- Just before pregnancy and during lactation, females have problems (and spread worms to offspring)
- Under-fed, thin, stressed and sick animals have more problems

What else can we do? "Whole farm" approach:

- Create clean or safe pastures – new, tilled, burned (while dormant), rested/rotated (4-6 months best, at least until at least 6" tall or taller)
- Consider multi-species grazing – horses/cows can help clean up goat/sheep worms
- Consider alternative forages – browse, sericea lespedeza, chicory?, sanfoin?, birdsfoot or big trefoil?
- Understand the role of nutrition – if not in good body condition, will get worms easier and be more likely to die from worms; extra protein may help fight worms
- Could use zero grazing – cut/carry forage to them, drylots, barns, feedlots
- Don't deworm all animals at the same time; manage to keep worms around that have not been dewormed
- Use multiple measures of worm infection to decide which to deworm
- Don't feed on ground, keep feeders clean

What else can we do? "Whole farm" approach:

► Use genetic selection –

- Only buy animals that do not have to be dewormed often when raised in the same system you want to use in the same environment
- Only keep animals on your farm that do not have to be dewormed often and still perform well (give you nice twins every year for example)
- Consider more resistant breeds and/or crossbreeding
 - Sheep: Katahdin, St Croix, Barbados Blackbelly, Gulf Coast/Florida Native, Texel (?)
 - Goats: Kiko, Spanish (some lines, real Spanish, not scrub goats), Myotanic



Basic Vaccination Program

- May vary from farm to farm, vaccinate production animals annually
- Lambs and kids: 5-6 weeks of age, booster at 8-9 weeks
- CD&T vaccine, prevent "over-eating disease"/ bloody scours
- 7 or 8-way (contains 7-8 *Clostridium* serovars - (Blackleg, Malignant edema, Red Water); if not an existing problem, may be added expense

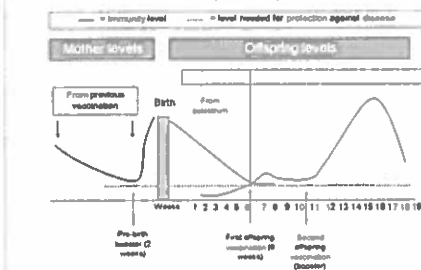


Photo: Susan Schoenian

Why vaccinate for CD&T?

- Over-production of harmful organisms that cause related diseases (*Clostridium perfringens* type C/D) can be found in:
 - Weaned kids/lambs or others experiencing stress
 - Healthy animals eating very well, especially young ones
 - Animals that over-eat or just have a change in diet
 - Late pregnant animals that experience keto-acidosis in pregnancy toxemia
- Important to give vaccinations correctly (timing), follow label, use clean needles (20g works), store correctly, etc.

Vaccinations* and immunity levels in goats and sheep



CD&T vaccine

- If not sure, can give the 'priming' set for CD&T (toxoid, vaccination) at almost any time to healthy animals
- Lambs/kids born to an unvaccinated mother, vaccinate 1-3 weeks of age with boosters? Oral supplements within 24 hr?
- Early research indicated that twice a year boosters for goats was beneficial (instead of once a year)
- Animals with it – CD anti-toxin (baking soda drench, antibiotics); may need to re-boost if vaccinated within 21 days of anti-toxin administration

Other issues beyond CDT

- Weight loss with good nutrition:

- Parasites
- CL
- Respiratory
- Johnes
- CAE
- OPP
- Bad teeth

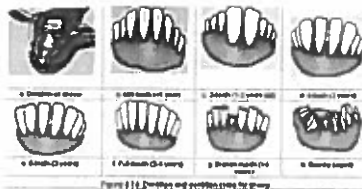


Figure 11.1: Diagrams of goat and sheep teeth showing various dental conditions.

<http://www.esgpp.org/HandBook/Chapter4.html>

- Diarrhea:
 - Parasites, CD/acidosis (sudden change in feed), Johnes (?), lush grass, toxic weeds?

Other issues beyond CDT

- Diarrhea:
 - Parasites, CD/acidosis (sudden change in feed), Johnes (?), lush grass, toxic weeds?
- Diarrhea can cause dehydration (sunken eyes, pinched skin stays pinched longer)
 - Also caused by not being able to reach water, water too far away



Other issues beyond CDT

- Lameness:
 - Food scald or rot
 - Injury
 - Laminitis
- Soremouth
- Pinkeye (bacteria different from cattle/people)
- Photosensitization/sunburn
- Pregnancy toxemia – feeding related; milk fever (dairy/high producing)



Photos above: Susan Schoenian



Miscellaneous

- Can get lice, mites and a fungus-like dermatitis like scratches and rain rot in horses; ringworm
- Lice/mites – permethrin sprays, dusts, injectable ivermectin?
- Dermatitis and ringworm – clean/disinfect, keep dry for rain rot/scratches
- Dermatophilosis – penicillin/antibiotics may help; work with vet (off label)



Other vaccines

- If there is a problem on the farm, there is a pneumonia vaccine for two types (*Mannheimia haemolytica*, *Pasturella multocida*) labeled for goats, sheep and cattle; reported by show goat producers to be effective
- Soremouth – Supposed to ask your vet to contact State Vet in Georgia before use since it is a reportable disease
- CL – sheep no, goats maybe; will test positive after vaccine
- Rabies – up to producer (pets/show animals), Rx



Other vaccines



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Other vaccines



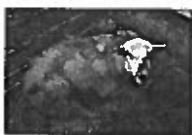
- Footrot – Fusoguard® vaccine for cattle; not labeled, mixed results
- Not a vaccine, but Zactran® (antibiotic) has shown excellent results in clearing up footrot in sheep – off label, Rx
 - <http://mdsheepgoat.blogspot.com/2014/12/zactran-eliminates-footrot.html>
 - <https://askavelsheep.wordpress.com/2014/09/03/zactran-some-hope-for-foot-rot-in-sheepjd-bobb/>



Sick animals



- If cannot move around, bring food/water to them; prop up; fav foods; friend next door?
- If not eating/drinking, can drench with electrolytes (if none handy, Gatorade, Powerade, Pedialyte, etc.), propylene glycol for livestock if not eating – not really for long term use or if eating



Miscellaneous

- Producers should keep records of treatments (and vaccines); follow withdrawal times on label (or FARAD – www.farad.org as per their vet)
- Problem animals eaten or sold (preferably to slaughter) after w/d times
- Scrapie tags and tagger are free (866-USDA-TAG); goats and sheep need to be tagged
- Merck has an online vet manual that is sometimes helpful (can show to vet)



Basic Vaccination Program

- ▶ Depends on farm/area issues
- ▶ CD&T vaccine, prevent "over-eating disease"/bloody scours/tetanus
- ▶ Lambs and kids: 5-6 weeks of age, booster at 8-9 weeks (follow label); adults at least annually (females 3-4 weeks before giving birth)
- ▶ 7 or 8-way (contains 7-8 Clostridium serovars - (Blackleg, Malignant edema, Red Water); if not an existing problem, may be added expense



Photo: Susan Schoenman, Backlands Farm

Normal Vital Signs

| Vital Sign | Sheep | Goats |
|----------------------------|------------------------|------------------------|
| Rectal Temperature | 101.5-104°F | 102-104°F |
| Heart Beat | 70-80 beats per minute | 70-90 beats per minute |
| Respirations (breaths) | 12-20 breaths per min. | 15-30 breaths per min |
| Rumen Movement | 1-3 per minute | 1-3 per minute |
| Ideal Body Condition (1-5) | 2-4 | 2-4 |

www.sheepandgoat.com

First Aid Kit

- ▶ Rectal thermometer
- ▶ Sterile syringes and needles
- ▶ Sterile gloves; Exam gloves
- ▶ 7% tincture of iodine
- ▶ Probiotics, anti-stress drench
- ▶ Broad-spectrum antibiotic
- ▶ Hoof trimmers
- ▶ Hoof treatment product
- ▶ **Phone number of your veterinarian!**
- ▶ **Note pad and pen**



Questions?