

HERD HEALTH MANAGEMENT FOR MEAT GOATS

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1. Farm Issues

- A. Check local zoning laws before beginning
- B. Locate a veterinarian who will make farm visits and enjoys working with goats.
 - i. Needed for trouble shooting herd problems, treatment of valuable sick or injured goats.
 - ii. Needed for advice on disease control, parasite control, nutrition, reproduction.
 - iii. Needed for extralabel drug use, information on meat withdrawal times.
[Chloramphenicol, gentamicin, and Baytril® should never be given to any goat.]
- C. Keep records of animals and treatments, income and expenses
 - i. Selection of replacements
 - calculate percent kidding, live kid crop, weaned kid crop, weaning weights
 - ii. Recognition of health problems
 - iii. Financial decisions - must know markets and growth rate to know when to breed, herd life to decide how many replacements to keep (estimate 5 years)
 - iv. Meat quality/withdrawal times
 - Record by ear tag (some types tear out in brush), neck collar.
- D. Inspect animals at least daily, better twice a day - health and welfare
- E. Biosecurity - Diseases are bought and paid for! Keep a closed herd if possible.
 - i. Animals coming interstate should have health certificate, negative tuberculosis and brucellosis tests.
 - ii. Isolate new additions for at least 3 weeks - separate barn, handle last. They may still be carrying very serious diseases that endanger the herd!
 - iii. Deworm with two drugs of different classes (to avoid introduction of resistant parasites.) Typical (but extralabel) drugs include fenbendazole (Panacur®, Safeguard®) at 10 mg/kg, ivermectin (Ivomec®) at 300 ug/kg or 150% of cattle, sheep, or horse dose.
 - iv. Avoid introducing
 - CAE (caprine arthritis-encephalitis)
 - CLA (caseous lymphadenitis)
 - Johne's disease (paratuberculosis)
 - Pink-eye
 - Sore mouth (orf)
 - Chlamydial abortion
 - Foot rot or scald
 - Caprine herpesvirus - common in TX and OK, causes abortion, enteritis

2. Pasture Issues

A. Fences - make good neighbors

- i. Perimeter fence should have no diagonal supports on the inside.
- ii. Electric fences with chargers inside perimeter fence. Sources include:
Premier Fence Systems, 2031 300th St, Washington IA 52353 800-282-6631 <<http://www.premier1supplies.com/store/fencing.html>>
Gallagher, from Kencove Farm Fence, 344 Kendall Rd, Blairsville PA 15717 800-536-2683 <<http://www.kencove.com>>
- iii. No holes to catch heads if homed goats - if woven wire fences, use vertical wires 10-12 inches apart.
- iv. High enough to keep the bucks away from the does (5 feet) or else kids will arrive early. Fences 4 feet high are usually adequate for does.
- v. Working chute - 10 feet long, 4 feet high, 12 inches wide. Solid sides should taper if homed goats so width of top twice width of bottom. Series of canvas flaps hanging half way down keeps goats going ahead. Cutting gate at head of chute, crowding pen at entrance to chute.

B. Predator control

- i. Domestic dog packs, coyotes (foxes, vultures, bears, mountain lions, humans)
- ii. Guardian dogs such as Maremma, Pyrenees, Komondor, Akbash.
- iii. Female donkeys are sometimes successful but males often maul the goats.
- iv. Llamas sometimes effective (investigative behavior) and do not need special food but are susceptible to intestinal worms of goats, paralysis by deer worm.
- v. Bring goats to barn at night, where security light adds protection.

C. Water - clean water from a tank. An open tank needs to be cleaned weekly.

D. Browsing reduces exposure to parasites

- i. Strongyle larvae crawl up blades of grass and wait in droplets of water to be eaten. More problems in wet seasons and years.
- ii. Exception is the deer worm, *Parelaphostrongylus tenuis*, which is carried by white-tailed deer and has snails and slugs as intermediate hosts. This parasite causes paralysis in goats (also sheep, llamas) that graze where deer are abundant, which is often at the edge of the woods.

E. Rotational grazing permits favored species to regenerate while continuous grazing weakens desired species. This is the basis for brush control by goats! Rotate pastures at least every 6 weeks. Stocking rate and production per acre can be increased, hay can be harvested during seasons of high forage production. Deworm before moving to new pasture if bad year and meat withdrawal times permit.

F. Leader/follower scheme permits goats with highest nutritional demands to enter pasture section first.

G. Creep grazing allows kids access to best pasture.

Fence off an area of higher quality (e.g. summer annual forages such as millet or

sorghum/sudan grass), supply a creep gate. A Boer cross kid may be larger than its dam.

H. Fertilization of pastures should be based on soil tests - phosphorus, potassium, nitrogen, sulfur. Adding sulfur and nitrogen lowers pH, so typically need to add lime to get pH back into 6 to 7 range.

I. Supplementing forages

- i. Fence line or gate for protection of person feeding grain
- ii. Trace mineralized salt should be available daily, year round -
Salt encourages but also limits intake of minerals.
Trace minerals include cobalt, iodine, iron, manganese, zinc, copper.
Should include selenium in the Northeast, but not present in all commercial salt mixes. Deficiency associated with weak kids, white muscle disease, inhalation pneumonia, retained placenta.
- iii. Some salt mixes contain dicalcium phosphate.
- iv. Loose salt is easier to eat, more versatile than salt blocks.

3. Barn Issues

A. Ventilation

- i. Well fed goats need fresh air, not warmth.
- ii. Ventilation removes summer heat, moisture droplets, pathogens, ammonia.
- iii. If moisture on windows, increase air flow. Need air inlets and outlets.

B. Waterers that are easily cleaned, don't freeze.

- i. Height of 24 inches - allows for build-up of bedding pack, keeps feces out.
- ii. Floating heater - protect cord from goats. Goats prefer warm water.
- iii. Nursing does give more milk if drink more.
- iv. Bucks less apt to suffer urinary obstruction.

C. Feeders

- i. Prevent wastage of forage.
- ii. Minimum 12 inches of open bunk space per goat, 16 inches for adults.
- iii. Angled boards 7 inches apart for does, 9 inches apart for bucks.
- iv. Toeboard below the feeder lets goats stand up to "browse".
- v. Outside feeders should be on concrete or paved pad sloping away from the barn, away from streams.
- vi. Big bale feeders must not permit collapse of bale onto goats.

D. Winter forage

- i. Good quality hay - early cut (pre-bloom), stored under cover. The outer 4 inches of a big round bale comprise 25% of the volume of the bale and rot if left uncovered outside.
- ii. If use silage or haylage, must be properly fermented, unspoiled, low pH to prevent listeriosis (circling disease) and clostridial overgrowth. Remove 4 to 5 inches of silage from open face each day. Avoid manger sweepings, baylage or Ag-Bag silage if holes in the plastic.

- iii. Corn silage is used by the goat as a source of corn kernels, so contributes to grain overload of rumen and clostridial overgrowth (enterotoxemia) in intestines.
- iv. Highly digestible forages will avoid starvation of youngsters, pregnancy toxemia of pregnant does. Good forages decrease the quantity of grain needed and thus decrease the risk of indigestion.

4. Special Considerations

- A. Monitor body condition and packed cell volume (anemia)
 - i. Thin animals may have malnutrition, excessive parasites, molar tooth problems, social order problems, or incurable infections or cancer.
 - ii. Judge loin and pectoral region (between front legs), prominence of ribs.
 - iii. Inspect inside of eyelid or underside of tail - paleness often indicates anemia. Institute parasite prevention and control measures, record need to repeatedly treat individual animals (for selection purposes).

- B. Horns - meat goats kept on pasture in Texas are usually not dehorned. Northern breeders with dairy background like to disbud replacement animals.
 - i. Disbudding not necessary if slaughter young - no price differential.
 - ii. Useful handles for controlling untame animals.
 - iii. Protection against predators.
 - iv. Hangings may occur in fences or feeders, though more common to catch a front leg rather than horns in a tree.
 - v. In Spanish goats, the genetic polled condition is associated with intersexes.
 - vi. Must provide adequate bunk space, separate goats according to size.
 - vii. Stocking rate and safety for people can be increased if kids disbudded.
 - viii. Dehorning box (or aluminum head piece and instructions) available from Caprine Supply 1-800-646-7736 <<http://www.caprinesupply.com/>>

- C. Vaccinations - CD tetanus imperative
 - i. *Clostridium perfringens* types C and D toxoid (against enterotoxemia) plus tetanus toxoid.
 - ii. Two or three doses 2 to 4 weeks apart. Start after 4 weeks old.
 - iii. Booster at least annually, preferably 3 to 6 weeks before kidding. This provides colostral protection for young kids until they can be marketed or are old enough to vaccinate, if to be kept as replacements or sold as older animals.
 - iv. Meat withdrawal is 21 days. Give subcutaneously to avoid meat damage.
 - v. Vaccination will leave a lump, so place strategically (not in front of shoulder if to be a show goat, not where will interfere with walking.)
 - vi. Store vaccine in a refrigerator, only use a sterile needle in the bottle, shake well.
 - vii. Rabies vaccine (extraLabel, and a veterinarian must give in NY) should be considered for valuable breeding animals, and is usually required of goats attending shows and fairs. If Imrab® (2 cc dose) is used, give subcutaneously ahead of or behind the shoulders.

- D. Foot care

- i. Trimming - at least twice a year, every two months if on soft bedding. Small orange handled trimmers are available from Jeffers 1-800-533-3377.
- ii. Foot rot can be purchased with goats or sheep, introduced on borrowed buck or outside does visiting to be bred. Foot rot organism cannot survive longer than 2 weeks (5 days?) on pasture or dry lot, or in a trailer without a sheep or goat.

E. Coccidiosis control

- i. Amprolium (Corid®) in water for two weeks at weaning. Goat dose is 25-50 mg/kg while cattle dose is only 5-10 mg/kg. It is hard to predict how much water goats drink and this drug is not labeled for goats.
- ii. Decoquinatate in salt - 2 pounds of 6% decoquinatate premix in 50 pounds of salt.
- iii. Coccidiostat in creep feed.
 - Decoquinatate = Deccox® is safe for all species. Dose is 0.5 mg/kg body wt. Also available as a powder to mix with milk replacer.
 - Monensin = Rumensin® at 20 g/ton, is labeled for goats, toxic to horses. (Lasalocid = Bovatec® at 20 to 30 g/ton is approved for sheep and sometimes used with mixed flocks. It is also dangerous to horses.)

F. Selenium

- i. BoSe® by prescription to does and bucks before breeding, at 1 cc/40 pounds. If use MuSe® instead, dose is 1 cc/200 pounds, and 1 cc will kill a young kid
- ii. BoSe to kids at birth and one month of age, subcutaneously.
- iii. Labeled 'not for use in pregnant sheep' so veterinarian may be unwilling to prescribe for pregnant goats 3-4 weeks before due to kid.
- iv. Selenium salt available constantly is best approach in Northeast - injections should not be needed.

G. Urolithiasis

- i. Any buck or wether off feed or straining is presumed to have a urinary obstruction unless seen to urinate freely.
- ii. A stone at the tip of the penis in the urethral process can be cut off while buck is sitting on his rump or on his side or back with hind feet pulled up to his ears.
- iii. Perineal urethrostomy (new urinary opening below tail) to get wether to market, but cost apt to exceed meat value. Get quote before agree to surgery.
- iv. Valuable breeding buck may warrant expensive surgery to clean out bladder.
- v. Prevent with fresh water continuously, free choice salt, calcium: phosphorus ratio of 2:1, limit magnesium consumption (no more than 0.2 % magnesium in concentrate). May add ammonium chloride at 2% of concentrate to acidify urine, salt at 1-4% to increase water intake. Spray hay with salt solution.

H. Pregnancy toxemia

- i. Does carrying multiple kids in late pregnancy may not be able to consume adequate energy if
 - forage of poor quality (goat eats less, gets less energy per pound, poor forage doesn't get out of rumen to make space for next meal)
 - goat initially obese (internal fat takes up space)
 - put off feed by bad weather, indigestion from excessive grain consumption

- ii. Signs include goat off by itself, lies down a lot, may grind teeth, appear blind. Ketones in urine, and some people can smell ketones on the breath.
- iii. Early cases are treated with 2 ounces propylene glycol orally twice a day, better forage, gradually increasing grain (maximum of 2 pounds/d divided into 2 meals), B vitamins.
- iv. Severe case needs intravenous fluids, dextrose, bicarbonate, thiamine, induction of parturition or C-section. Call your vet for treatment and prevention.

I. Care of the newborn kid

- i. Colostrum most important, tube feed if necessary. If hand rearing give one ounce per pound every 8 hours. An 18 French rubber feeding tube works well.
- ii. Dip navels in 7% tincture of iodine. Keep kidding stalls clean and dry.
- iii. Provide shelter from wind, rain, snow.
- iv. Recognize signs of starvation and feed kid before too late: back arched, head and ears droopy, mouth cold, empty stomach (hold up by front legs to see if abdomen bulges because full of milk), or too weak to stand. Feed if temperature below 102°F. Rewarm if temperature below 99°F.

J. Floppy kid disease

- i. Kids 3-10 days old; very weak, wobbly or limp.
- ii. May have history of excessive milk consumption.
- iii. Acidosis without dehydration, initially no diarrhea.
- iv. Treat with 1/2 teaspoon baking soda orally or 1 ounce peptobismol. Take off milk for 12 hours but feed electrolytes. A veterinarian can give intravenous fluids with bicarbonate, rule out other diseases.

5. Useful References

A. Meat Goats - a 74 p soft covered booklet by Sara Emond discusses the basics of meat goat production in northern climates. Topics include fencing, housing, feeder plans, predator control, feeding, reproduction, kidding problems, raising kids, zoonoses, record keeping, marketing meat goats. Available from Alberta Goat Breeders Association, Box 330, Hay Lakes, Alberta, Canada TOB 1W0 for \$20 US postpaid. E-mail <Agbagoats@yahoo.com>.

B. Web pages

http://www.cals.ncsu.edu/an_sci/extension/animal/meatgoat/ahgoats_index.html - goat information links page at North Carolina.
<http://www.boergoats.com/clean/coverpage.phtml> - Boer goat and meat goat information center

C. Internet discussion groups.

Directions for subscribing to numerous e-mail discussion lists can be found at <http://www.cybergoat.com/links/lists_goat.shtml>

D. Associations

- i. American Boer Goat Association - 1207 S. Bryant Blvd, Suite C, San Angelo TX 76903 - phone 325-486-2240, <www.abga.org>.

ii. Empire State Meat Goat Producers Association _ 24 Miner St, Canton, NY
13617 <<http://www.esmgpa.org/>>

D. Textbook for your veterinarian _ Goat Medicine by Smith and Sherman, 1994, ISBN
0_8121_1478_7 Order by contacting Lippincott Williams & Wilkins 1_800_638_3030
<<http://www.lww.com/index.html>> then books then veterinary medicine (price \$80).