

# GOAT HERD HEALTH: UPDATE OCTOBER 1995

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This herd health program is an outline of the basic requirements for goats in the Midwest. And must be individualized, expanded, and continually updated by goatkeeper and veterinarian. Six common problems addressed here are: parasitism, enterotoxaemia, tetanus, CAEV, Vitamin E/ selenium deficiency, and nutrition. Most herds have one or two other problems, which should be added to this program as they arise. A close working relationship with your veterinarian is very important.

## ADULT DOES

### *Vaccinations*

Clostridium perfringens types C&D, IM, and tetanus toxoid IM (available together) one month prior to kidding each year. Other vaccines such as Chlamydia/Vibro, given prebreeding to prevent abortion, or Caseous Lymphadenitis (abscess vaccine) as needed for individual problems.

### *Parasite Control:*

Internal parasites. A microscopic fecal exam should be done at least two times yearly on most farms; for example mid-summer and early spring. Several pellets from 4-5 adult goats can be tested collectively to determine the type and severity of parasitism in the herd. This way deworming is done only when necessary, both to save money and to help prevent drug resistance from developing in the parasites. Deworming strategically, for example before moving goats to clean pasture, improves results (keeps goats worm-free longer). It is important to use adequate dosages- to err on the side of overdosing B to prevent drug resistance in parasites. That said, on most farms deworming must be done 4 times yearly: 3-4 weeks prior to and at kidding, mid-summer, and fall, before breeding. The emphasis on deworming during late pregnancy and neonatal period called periparturient rise, which results in infection of young kids.

Many good anthelmintics are available: the newer benzimidazoles (fenbendazole, oxfendazole, albendazole etc.), levamisole, morantel, and ivermectin. The benzimidazoles are ovicidal so are a good choice before moving goats to clean pasture. They are effective against Moniezia sp. Tapeworms at higher dosages. Albendazole is used for liver flukes, but

should not be given during the first 45 days of pregnancy due to the possibility of birth defects. Ivermectin, the benzimidazoles, and levamisole are effective against common lungworm *Dictyocaulus filaria*. The benzimidazoles and ivermectin are effective against hypobiotic (dormant) larvae. An advantage of ivermectin is that it is also effective against some external parasites-sucking lice, ear mites and some mange mites. Ivermectin causes short term injection site pain in some goats. Levamisole is the least expensive of the anthelmintics. It has a narrow margin of safety so goats must be carefully weighed and dosed. Signs of toxicity (abdominal pain, salivation, muscle tremors, etc.) can occur at recommended dosages.

Levamisole and ivermectin come in injectable and oral forms. The benzimidazoles come in paste, liquid or granules. Morantel tartrate comes as a bolus or top dress for feed. Ivermectin is available as a pour-on.

### **Dosages:**

The dosage of the benzimidazoles and morantel is higher for goats than sheep or cattle due to differences in absorption and metabolism of the drugs. Except for morantel, no milk withholding times are given because these drugs have not been approved for use in goats or even lactating cattle. There is research to show that 96 hour withholding for all anthelmintics except ivermectin would be more than adequate in the goat to prevent residues. Ivermectin persists in the udder for up to a month, so should not be used in lactating dairy goats except at drying off, when a 30 day withholding period can be observed.

- Ivermectin (Ivomec): .02mg/kg; 1cc/110lbs SQ
- Fenbendazole (Panacur): 10-15 mg/kg orally
- Albendazole (Valbazan): 10 mg/kg orally
- Oxfendazole (Benzelmin): 10 mg/kg orally
- Mebendazole (Telmin): 15 mg/kg orally
- Morantel (Rumatel): 15 mg/kg orally or top dress on feed.  
(Approved for use in dairy cattle with no milk discard.)
- Levamisole (Ripercol): 8 mg/kg; 2 cc/100lbs SQ

External parasites: treat as needed

Sucking lice (*Ligngnathus stenopsis*) and biting lice (*Damalinia caprae*) can be safely treated with non-systemic permethrin pour-ons for lactating dairy cattle. These products (Cyclence and others) are applied to the goat's topline every 2-3 weeks for at least three treatments. They have the added benefit of repelling flies and mosquitoes. Another option is Coumaphose (CoRal) louse powder, also approved for use in lactating dairy cattle. Ivermectin is useful to treat sucking lice (the most common type), but not biting lice. It is never 100% effective when used alone. A variety of pet flea and tick shampoos, dips, and sprays can be used on individual pet goats and kids.

### **Ear mites (Psoroptes)**

Ivermectin twice, one month apart in conjunction with 2-3 weeks therapy using pet ear mite products.

### ***Vitamin E/ Selenium supplementation***

Injection of alpha-tocopherol/selenium (BoSe, 1.0 mg selenium per ml or equivalent) given SQ at the dosage of 1 cc/50 lbs bodyweight, 3-4 weeks prior to kidding each year. An alternative is vitamin E. Selenium feed supplement made for sheep which is fed during the last 6 weeks of pregnancy.

### ***Feet trimming: as needed***

## **Bucks**

### ***Vaccinations:***

*Clostridium perfringens* types C&D and tetanus toxoid, both IM once yearly. Other vaccinations as dictated by circumstance.

### ***Parasite control:***

Internal parasites. Deworming 2-4 times yearly according to microscopic fecal exams done collectively on all bucks twice yearly.

External parasites. Lice can become very serious in housed bucks during wintertime. Treat as for the does.

### **Vitamin E/Selenium supplementation:**

Injection of BoSe at dosage of 1 cc/ 50lbs bodyweight to maximum of 5 cc, once yearly before breeding season. (May repeat in spring)

**Feet trimming: as needed.**

## **Kids**

### **Neonatal period:**

- Dip navel in iodine at birth, and repeat in 12 hours.
- Check carefully for birth defects such as entropion (rolling of the eyelids), Atresia ani ( no anus), cleft palate, etc.
- Bottle feed, or stomach tube 2-4 oz pasteurized colostrums; or verify kids are
- Nursing within 2 hours of birth, ideally immediately. Strip out the Aplug@ at the end of the does teats for nursing kids, and check milk for mastitis.

### ***Vaccinations:***

Clostridium perfringes types C&D and tetanus toxoid IM at 4,8 and 12 of age. On farms with history of death in kids from enterotoxaemia, kids can be vaccinated at 2,6,10 and 14 weeks of age. Give tetanus antitoxin (100-200 units) SQ at the time of disbudding and castrating. Where indicated, contagious ecthyma (sore mouth) vaccine can be given to kids over 6 weeks of age.

Casuos Lymphadenitis (abscesses) vaccine can be given between 3 and 4 months of age and boosted one month later.

### ***Parasite control:***

#### **Internal parasites.**

Coccidiosis control. Coccidiosis is a major problem of kids 2 weeks of age and older. Many times the disease is subclinical (no diarrhea and no deaths), but prevents kids from thriving and reaching their full genetic potential as adults. The only way to diagnose coccidiosis is by microscopic fecal exam, and these should be done periodically starting at 4-5 weeks of age. Kid pens should be well lit, dry and roomy. Kids should be grouped by age so that young kids are not added to existing groups of older kids and suddenly Exposed to massive doses of coccidia. Fecal contamination of feed and water should be prevented by imaginative use of keyhole, and other Ahead through@ feeding and watering systems. Bottles, lambars, buckets, and pails must be kept clean.

Even under ideal conditions, however, most kids require medication in the milk or feed through their first year to prevent disease.

There are several drugs used to treat and prevent coccidiosis:

**Sulfa drugs:** These drugs are usually used to treat clinical disease, but can also be used to prevent outbreaks of coccidiosis. An advantage is that they are also effective for pneumonia if that is a concurrent problem. The most commonly used sulfa drug is Sulfadimethoxine (Albon 12.5 % solution) dosed at 50 mg/kg or 2 cc/ 10 lbs bodyweight in milk once daily for 7-10 days. Weaned kids can be drenched or given Albon Boluses at 50mg/kg once daily for 10 days. Another option is pediatric Trimethoprim 40mg/ sulfamethoxazole 200 mg/5cc (bactrim liquid) 1cc/4lbs bodyweight orally, once or twice daily for 10 days, given in the milk or drenched in older kids.

- Decoquate (Decoxx) can be mixed at home in feed to obtain 0.5-1.0mg/kg body weight/ day. This is fed continuously until freshening at one year of age. Mix 1-1 1/2 lbs 6% Decoxx per ton of feed, or top dress at 1 teaspoon 6 % Decoxx per 100 lbs bodyweight once daily mixed well in feed. Decoxx can also be mixed with loose salt (1 lb 6% Decoxx premix in 25 lbs salt) and offered as the only source of salt the first year.
- Lasalocid (Bovatec) 30 grams/ ton feed (to achieve 1.5 mg/kg bodyweight/day) This is fed continuously the first year. Bovatec can also be mixed with loose salt at 0.75% (1lb 15% lascolid to 50 lbs salt) and offered as the only source of salt through the first year.
- Amprolium (Corid 9.6% solution) 30-50 mg/kg/day or 2 cc/10lbs bodyweight once daily in milk or drenched for 10 days.

### **Other internal parasites:**

Deworming initially at 12 weeks, then in the same schedule as the does, according to fecal exam results. Kids on pasture will need closer attention, and more frequent dosing than kids kept in dry lots or pens.

### **Vitamin E/ selenium supplementation:**

Injection of BoSe or equivalent; 2 cc at 2 weeks of age, and 1 cc at 10 weeks, SQ

### **Disbudding/ castrating:**

Disbudding with a hot iron at 3-7 days of age. Some pygmy goats develop more slowly and can be disbudded up to 2 weeks of age.

Castrating. Surgically at 14-21 days of age.

## **CAEV Control ( See CAEV handout for further information)**

### **Guidelines for eradication/control:**

- Test all animals over 6 months of age once yearly and cull positive goats.
- Remove all kids from dam immediately at birth.
- Feed pasteurized goat or cow colostrums
- Raise kids on pasteurized goat milk or goat replacer.
- Keep kids separate from adult herd until they enter milking string.

## **Nutritional Guidelines for goats**

### **Milking Does**

As ruminants, goats are healthiest and most productive when high quality roughage (such as alfalfa hay) is the main component of the diet with grain as a supplement. You cannot make up for poor quality hay by feeding more grain because of the limited ability of the ruminant GI system to tolerate grain. As a guideline, feed 1 lb 15-17% protein grain mixture per 2 lbs milk produced.

Heavy milkers fed hay and grain as above are usually marginally deficient in phosphorus. Dicalcium phosphate or commercial calcium/ phosphorus mineral mix should be added as .50-1.0% of grain mixture.

Dietary buffers (sodium bicarbonate) should be considered in very high producing goats to prevent rumen acidosis and laminitis (founder).

Vitamins AD should be added during the winter as these vitamins deteriorate in hay. Vitamin E/selenium supplementation can reduce or eliminate the need for parental supplementation.

Trace mineralized loose salt should be included in the grain mixture at .50-1.0%, and also offered free choice. Other minerals need not be offered free choice.

Goats prefer coarsely ground feed with minimal dust and fines. Molasses is usually added to reduce dust, but should not exceed 10% of the grain ration.

### **Sample ration: 16% crude protein**

cracked corn 35%

rolled oats 35%

wheat bran 8%

soybean meal 16%

dicalcium phosphate 0.5%

TM salt 0.5%

molasses 5%

## **Dry Does**

### **Alfalfa or alfalfa/grass hay**

0.5-2 lbs grain daily, fed according to condition, and depending on quality of roughage. Many dry does do not require grain until the last 6 weeks of pregnancy when kids are developing rapidly. In any case, gradually increase grain ration during the final 6 weeks of pregnancy to about 2 lbs. daily at kidding.

## **Bucks**

- Alfalfa/grass hay
- Unlimited fresh, clean water
- Grain according to condition, but 0.5-2lbs daily is usual. Many bucks eat poorly and loose condition during the breeding season, but catch up late winter-spring.
- Trace mineralized loose salt mixed half and half with calcium carbonate (limestone) fed free choice. The limestone helps prevent urinary stones which are a major problem in bucks.

## **Kids**

- Pasteurized goat or cow colostrums as soon as possible after birth feed 2-4 oz
- Pasteurized goat milk, cow milk, kid replacer or combination of these can be fed. Avoid scours, gradually introduce the milk replacer over a period of 2-3 weeks by slowly increasing its proportion in the total milk. Feed milk four times daily for 5-7 days, then decrease to three times daily, gradually increase the volume of milk at each feeding. At 3-4 weeks decrease if desired to two feedings daily, gradually increase volume at each feeding to one quart. Do Not exceed two quarts daily at any point.

- Alternatively Lambar system with continuous feeding of cold milk can be used.
- Offer hay for nibbling at two weeks of age.
- Wean at 12-16 weeks of age, gradually decrease the volume of milk at each feeding, and feeding once daily the last 1-2 weeks. Alternatively, goat kids can be weaned at 8 weeks if they are eating well and disease free.
- Feed weaned kids according to condition; they need quality leafy hay free choice, and enough grain for growth without fattening. Kids can be fed the same 14-16% protein grain mix as the bucks and does.

## **Pygmy goats**

- Feed pygmy and pet goats kids as above, taking into consideration that smaller goats will take less milk per feeding, and may be weaned later-closer to 16 weeks to bond them with their new owners.
- Feed high quality alfalfa or alfalfa/ grass hay and keep grain feeding to a minimum. Pet goats do not need grain unless they are growing, pregnant, lactating, or keeping warm in the winter. It is important to keep the calcium/phosphorus ration in the whole ration at 2 to 1 to prevent urinary stones from forming. Urinary calculosis (stones) is the leading cause of death in pet and pygmy weathers. Since alfalfa hay is high in calcium, and grain is high in phosphorus, grain feeding must be minimized to keep the diet properly balanced. The grain offered should be at 14-16 % protein mix such as any of the commercial dairy goat shows, and should be fed according to condition.
- Plenty of fresh water
- Trace mineralized loose salt mixed half and half with calcium carbonate (limestone), offered free choice. The lime stone helps prevent urinary stones.