

Goat-Herd Health Calendar

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The goal of any goat-herd health program should be to increase efficiency and productivity. Herd health programs should include general husbandry, nutrition, and parasite and vaccination programs. Your emphasis should be on disease prevention rather than treatment. There are three major approaches for disease control:

1. Keep resistance high.
2. Avoid exposure.
3. Recognize and address diseases early.

Using all three approaches together is the most effective way to eliminate or minimize disease costs and losses in your herd.

Herd Health Procedures for Adults

1. Six weeks before breeding

Does

- Trim feet if necessary.
 - Treat any animal that has foot rot or foot scald.
 - Separate those with foot rot from those without and institute a treatment and eradication plan for foot rot. (See Foot Care, Section H.)
- Use the FAMACHA score to determine need for deworming. (See Parasite Control, Section E.)
- Palpate the outside of the mouth for jagged teeth and float the teeth or cull as necessary.
- Palpate udders for the presence of mastitis or hard tissue in the udder that may indicate old or chronic mastitis. Cull does showing signs of mastitis.
- Vaccinate with clostridium perfringens C and tetanus C, D, and T.

Bucks

- Trim feet if necessary.
- Consider a breeding soundness exam by your veterinarian.
- Palpate the testicles. The testicles should be firm. If the testicles are mushy feeling, this could be an indication of infertility.
- Measure scrotal circumference. (See Prebreeding Exam, Section G.)
- Check body condition.
 - Thin bucks should receive 1 percent of their body weight of grain a day along with a forage diet.
 - Moderate condition bucks should receive 0.5 percent to 1 percent of their body weight of grain a day along with a forage diet.
- Vaccinate with an eight-way clostridial vaccine. (Bucks can be more susceptible to clostridial diseases during breeding season so an eight-way is sometimes preferred over C, D, and T, but it may cause vaccine site reactions.)
- Trim beard to decrease urine smell.

2. Two weeks before breeding

Does

- Use the FAMACHA score to determine need for deworming.
- Flush thin does by feeding 0.5 to 1 pound of corn or barley per head per day. Continue for two weeks into the breeding season. (Flushing will improve kidding percentages.)
- Place does on high-quality pasture during breeding.

Bucks

- Use the FAMACHA score to determine the need for deworming.

3. Breeding

Does

- Weigh doelings; they should be 65 percent of their adult weight, approximately 70 pounds, if the does in your herd average 105 to 110 pounds.
- Consider limiting the time with the bucks to 42 days. Keeping a 42-day breeding season will make management easier and decrease disease problems such as parasites, diarrhea, and pneumonia.

Bucks

- Use one buck per 30 to 35 does. It is best to divide the flock into single-buck units, but if this is not possible, use bucks of similar size in a group, and only use bucks that have been together prior to the time of breeding.
- Supplement bucks with 1 to 2 pounds of grain per day, depending on their weight loss.

4. Breeding to six weeks before kidding

Does

- Feed doelings separately from does to ensure adequate feed intake.
- Feed thin does 1 to 1.5 pounds of grain per day.
- Have an ultrasound performed to diagnose pregnancy 45 to 60 days after the bucks are removed.
- Rebreed open doelings and cull open does.

5. Six weeks before Kidding

Does

- Gradually increase grain portion of the diet to 0.5 to 1.5 pounds grain per head per day depending on the size of the doe to prevent pregnancy toxemia.
- During the winter or when on poor pasture, feed 2 to 3 pounds of good quality hay in addition to the grain.
- Allow 1 foot per animal of feed-trough space. You may need to separate dominant females as they will not allow others to eat and may not eat themselves if they are constantly fending off the others.

6. Three to four weeks before kidding

Does

- Vaccinate with clostridium C, D, and T.

- Vaccinate with E. coli scour (diarrhea) vaccine if recommended by your veterinarian.
- Treat for internal parasites.
- Check and separate does with developing udders.
- Observe for sluggish does as this may be the onset of pregnancy toxemia or hypocalcemia (milk fever).
- If pregnancy toxemia is a constant problem on the farm, check urine for ketones and evaluate feeding program.
- Treat does with propylene glycol and calcium borogluconate subcutaneously when signs of pregnancy toxemia occur.

Note: Prepare a kidding kit containing:

- Iodine or nolvasan to dip the navel cord.
- Hair clip in case navel continues to bleed once separated from the doe.
- OB lube and OB gloves.
- Soap and towels.
- Feeding tube and syringe.
- OB straps.
- Thermometer.

7. Kidding time

Does

- Check does early in the morning, noon, late afternoon, and bedtime. Most does will kid during daylight hours. DO NOT check in the middle of the night as this may stimulate does to kid 3 or 4 hours earlier than they would normally.
- Strip out milk from the udder to remove the gelatinous plug and check for the presence of colostrum/milk after the doe kids.
- Watch for the placenta to pass within 12 hours after birth.
- Give 0.5 ml of oxytocin twice a day to does that do not come into milk or have a retained placenta to stimulate milk let down and uterine contractions. If the doe has a fever, T > 104°F or goes off feed, consult the veterinarian as a uterine infection is likely and appropriate use of antibiotics may be indicated.

Note: If caprine arthritis encephalitis (CAE) is a problem in a herd and efforts are being taken to control transmission of the disease, take mea-

tures to control colostral transmission. You may use the same methods to control mycoplasma transmission.

- Separate kids at birth from CAE positive does.
- Tape the teats of does that are CAE positive to prevent accidental nursing.
- Treat colostrum by heating it to 133°F for 60 minutes.
- Colostrum from CAE negative does can be collected and frozen. Colostrum can be stored frozen for up to one year.

Herd-Health Procedures for Kids

1. Newborn

- Identify.
- Dip navel in iodine or nolvasan solution.
- Make sure kid receives colostrum. A kid should receive 20 ml of colostrum per pound in the first 4 hours after birth. If a kid fails to nurse, tube feed a minimum of 4 ounces of colostrum. (4 ounces = 20 ml per pound for a 6-pound kid) Repeat in 4 to 6 hours if there is any evidence the kid is not nursing.
- Use a heat lamp only if kids are weak and chilled.
- Examine for congenital defects such as entropion (eyelid rolls inward), cleft palate, or contracted tendons. Kids that are lying down should be made to rise; those that fail to stretch after getting up may have a problem and should be examined carefully.

Note: The three major causes of baby kid mortality are starvation, hypothermia (life threateningly low body temperature) and trauma.

- Consult your veterinarian if selenium deficiency is a problem in your herd. Vitamin E and selenium injections may be necessary. The best means to prevent selenium deficiency is to feed a good-quality mineral containing selenium throughout gestation.

2. First month of life

- Perform dehorning and castration within the first week if they are to be done. You should check market preferences in your area in regards to dehorning and castration.

- Check for anemia at 3 weeks of age and every 2 weeks thereafter.
- Provide creep feed containing coccidiostats such as amprolium, Rumnesin®, or Decoquinat®.

3. Four weeks of age

- Vaccinate for clostridium C, D, and T and booster 3 to 4 weeks later.
- Use the FAMACHA score to determine the need for deworming.

4. Weaning

- Wean bottle-raised goats at 6 weeks and meat goats at 10-12 weeks.

5. Three months of age

- Separate intact buck kids from doelings.
- Check eyelids to determine if kids are anemic and administer a dewormer if necessary.

General Herd Health Procedures

A. Record Keeping: Accurate records are important to any herd-health program to monitor progress and serve as a valuable reference. Records are extremely helpful when making management decisions concerning vaccination, parasite-control, and nutrition programs. Medical history and treatment dates, including vaccination and deworming type and dates, weaning weight, breeding dates, kidding dates, and the number, sex, and viability of the kids are all important pieces of information to keep in the records.

B. Sanitation: Good sanitation is necessary to prevent disease. Keep kidding areas especially clean and dry, and avoid overcrowding as it will concentrate disease-causing pathogens. Feed and water frequently are contaminated by goats defecating in the troughs.

C. Colostrum: Colostrum management is extremely important to the health of the newborn kid. Colostrum contains protective immunoglobulins to fight disease. Keep frozen colostrum (preferably from a doe from your herd) or colostrum replacements available for emergencies.

D. Nutrition: Good-quality forages are the cornerstone of goat nutrition. Supplement grain based on the body condition and reproductive and growth stage of the animal. Most goats should be able to thrive

on pasture and hay. Over-conditioned (overweight) goats are more likely to have problems with pregnancy toxemia and dystocia (trouble giving birth).

Provide clean, fresh water and a complete mineral salt at all times. Goats are more resistant to copper toxicity than sheep, so a sheep mineral will not provide enough copper for goats. Either a goat mineral or cattle mineral is suitable.

Bucks and wethers fed grain can develop urinary calculi (bladder stones) that can cause a urinary blockage. Feeding ammonium chloride at a level of 1 percent to 2 percent of the diet will help decrease the incidence of bladder stones. The calcium to phosphorous ratio in the diet should be 2 to 1, which will also decrease the incidence of bladder stones and provide the proper mineral balance for bone development.

E. Parasite Control: Parasites are one of the leading causes of death among goats. A good parasite control program is not simply deworming, but also management practices to reduce the number of parasites the animals are exposed to. Grain and hay should be fed in troughs high enough to prevent fecal contamination.

Pastures used for a first cutting of hay will help dry out the parasite larvae. Pastures should be allowed to grow high enough so that goats can graze several inches above the ground to decrease exposure to parasite larva in the environment.

The drug class of the dewormer should be rotated yearly and/or as needed to help reduce drug resistance, which is a serious problem for goat producers. Your veterinarian and/or Extension agent can help in this decision. Take fecal samples and perform egg counts regularly to monitor the severity of pasture infection and the effectiveness of the dewormer you use. Drug resistance will show up as high egg counts and sick animals even after deworming.

The FAMACHA is a system to monitor the parasite level of each individual animal so that it can be dewormed as needed rather than on a set schedule. The FAMACHA monitors for anemia (low red blood cell count) due to the parasite *Haemonchus contortus*. Other parasites may be a problem in some areas so it is important to have fecal samples checked regularly. Checking egg counts and monitoring animals for anemia will help you determine when a dewormer is needed. Using dewormers only as needed is the key to preventing resistance to dewormers. The exception to this is that you should always treat does for internal

parasites 3 weeks before kidding. Your veterinarian or Extension agent can help set up a parasite treatment and monitoring plan for your farm. For more information on the FAMACHA scoring system, you can visit www.scsrpc.org/SCSRPC/FAMACHA/famacha.htm.

F. Disease Resistance: Decreasing stress, along with good nutrition, parasite-control, and vaccination programs will increase resistance to disease. All goats should be vaccinated against clostridial diseases. Other vaccines, such as those for *E. coli* scours, foot rot, and orf (soremouth), are available and may be indicated in certain circumstances. Work with your veterinarian to set up a vaccination program tailored to the specific needs and challenges on your farm.

G. Prebreeding Exam: Your veterinarian can perform a thorough breeding soundness exam on the bucks, which can help avoid open does or a prolonged breeding season. Testicles should be palpated for nodules (granulomas), which can indicate a bacterial disease. Bucks should be culled if granulomas are palpated. The scrotal circumference should also be measured. Mature bucks should have a scrotal circumference of 25 cm or greater, depending on the breed size. If it is less, they are considered a questionable breeder. The testicles should have some tone, about the consistency of one's flexed biceps muscle.

H. Foot Care: You should do foot trimming as needed, depending on the environment. Trim the toes so the hoof wall is even with the sole. Start at the heel bulb and work forward; this will help avoid quicking (trimming too short and causing bleeding) the toe. Remove any excess at the bulb of the heel. After trimming, soak the feet in a footbath of 10 percent zinc sulfate solution to help control foot associated diseases. A 10 percent zinc sulfate solution can be made by mixing 16 pounds of zinc sulfate to 20 gallons of water. Foot rot is a contagious, bacterial disease of goats. It can cause severe lameness and economic losses. You should trim and soak the feet of new arrivals to prevent the introduction of foot rot into the herd. You should also isolate them from the rest of the herd for 2 to 3 weeks and monitor them for foot rot and other contagious diseases. Animals that have been at shows or sale exhibitions should have their feet soaked in zinc sulfate before re-entry into the herd.

I. Culling: Proper culling will increase productivity. Cull chronically injured, sick, or open does to increase profitability.