# Goat & Sheep News

UofA
UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

Vol. 2, No. 1 Jan.-March 2010

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## Management Is Key for Lamb Survival

*Steven M. Jones, Associate Professor*

There are many factors that affect lamb survival. If a pregnancy is carried to term, most losses occur in the first three to four days of life, and if lambs survive the first four weeks, most usually make it to market. Most losses can be grouped in three general categories – starvation/hypothermia, pneumonia and scours (diarrhea). To a large degree, these losses are related to management factors we control, and therefore, a proportion of this loss is preventable.

The starvation/hypothermia complex is the leading cause of death. This is a largely a function of the time of year when lambs are born. However, vigorous lambs that receive adequate colostrum and milk (five to ten percent of body weight) in the first few hours after birth can withstand a significant amount of cold.

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Research, and practical experience, indicates that selection for ewes with sound udders, desirable teat placement and strong mothering instincts can significantly reduce the impact of this problem. Likewise, large birth weights and dystocia contribute to less vigorous lambs that do not find the ewe's udder without assistance.

Because lambs have small body weight in relation to their surface area, hypothermia will always be a potential cause of loss, even in lambs born in mild or warm weather. However, we can reduce its impact in our flocks by altering our selection and management practices.

Pneumonia is the second leading cause of death in young lambs. Death is most often caused by bacterial infections, usually *Mannheimia (Pasteurella) hemolytica* and *Mycoplasma ovipneumoniae*. These bacteria are common in sheep flocks, and the problem strains usually can be found in the nasal passages and tonsils of adults and often healthy-appearing ewes.

Transmission to the lamb is usually by aerosolized droplets, containing the bacteria, originating from carrier ewes. This transmission is favored by inadequate exchange of

air and moisture, as is often seen in our barns. Poor ventilation, combined with a significant proportion of the ewe flock with chronic infection of the respiratory tract, generally results in pneumonia being a significant cause of mortality in young lambs. The same situation occurs in other species. Producers should consider culling ewes with a chronic cough.

Pneumonia not only causes significant mortality in young lambs but also leads to chronic infections in older lambs and ewes. Pneumonia is a leading cause of death and reduced performance in feedlot-age lambs. Many infections in these lambs are already established in the respiratory passages long before lambs reach the feedlot and only need the stresses of transportation and the feeding program to result in clinical disease. Refinements in building design and reduced animal density in confinement situations are more effective long-term measures to control pneumonia than antibiotic usage. Experience suggests that flocks which lamb outdoors in the spring tend to have a low incidence of lamb pneumonia.

Diarrhea in young lambs is caused by several kinds of bacteria, viruses and protozoa. Lambs that do not receive adequate colostrum are at greatest risk of developing diarrhea. However, even animals that received adequate amounts may still develop diarrhea if the colostrum did not contain specific antibodies to these agents. In addition, colostral antibody can be overcome by a severe buildup of infectious agents in the environment. Lambs with diarrhea may shed hundreds of millions of infectious organisms in every teaspoonful of manure. For many infectious organisms, ingestion of only a few is necessary to cause disease. As if all this were not bad enough, some ewes act as inapparent carriers of these infectious agents and seed the environment with low numbers.

Overcrowding, excessive moisture or humidity, lack of bedding and poor sanitation all contribute to raising the overall level of contamination by infectious agents to levels that result in disease. Infectious agents in the environment are not only acquired by the lamb nosing about the pens but also by nursing udders which are contaminated by dirty environments. In addition, once a scours outbreak is in progress, much of the environment rapidly becomes contaminated, and many lambs get exposed. Isolating ewe/lamb pairs when diarrhea occurs in the lamb can help reduce the number of cases that develop. Likewise, good overall sanitation with dry, relatively deep bedding can reduce the amount of exposure lambs get to disease-causing organisms.

Most flocks harbor many of the common infectious agents responsible for the bulk of lamb losses caused by infectious disease. These agents are either in the environment or harbored by the animals themselves. Whether or not clinical disease occurs is usually a function of the interactions between animals with their environment**. Our** role is minimizing management factors that contribute to disease development in our flocks.

## Kidding and Lambing Management

*Steven M. Jones, Associate Professor*

Most ewes and does complete parturition without assistance, despite the frequency of multiple births. Softening and total disappearance of the ligaments around the base of the tail are good indications that parturition will occur in the next 12 hours. The mother often waits until all is quiet and may isolate herself from the flock or others may back away to give her space. As a guide for when to interfere, use the 30-30-30 rule. If a ewe or doe goes into labor, allow 30 minutes for delivery to be completed before examining the dam.

If everything appears to be in normal position and posture, allow a further 30 minutes before delivering the lamb or kid. If the mother has had one or more fetuses unassisted but an additional fetus is believed to be present (part visible, further straining), allow a further 30 minutes to elapse before delivering the next fetus. It is imperative to wash the vulva (use a mild dish detergent or betadine), wear a sterile glove (for protection of the ewe or doe as well as for protection of the examiner from zoonotic diseases) and use plenty of lubricant when examining the birth canal or manipulating a fetus. A head snare (available from many supply catalogs as a “lamb puller”) is very useful for correcting a head back position. Most lambs and kids can be delivered in either anterior (head first) or posterior (hind feet first) presentation with one limb retained. Swing the lamb, clear its nose and place it in front of the dam. Check for an additional fetus, and follow up with antibiotics if any major manipulation was required. If you pull one, pull the rest.

Colostrum should be stripped from each teat by hand to ensure that dry plugs in the teats do not prevent suckling and that mastitis is not present.

Obviously, if the lambs or kids are nursing their dams normally, you have no way to know how much they are drinking. Visually observe that they are active, not hunched and look full. If the udder is overfull or unbalanced, enough colostrum should be stripped out to make suckling easier for the neonates. This colostrum can be tube-fed to weak or slow-to-nurse lambs or kids, or it can be frozen in 240-ml (1-cup) quantities for later use in other lambs or kids. When artificially reared, the lamb or kid should consume 1 ounce of colostrums per pound of body weight three times during the first 24 hours. Thus, an 8-pound lamb would receive 8 ounces (about 240 ml) every 8 hours for three feedings if hand fed. The first feeding should be given as soon as possible (tube-fed if necessary) and certainly within 6 hours after birth. When triplets or quadruplets are born, the smaller size of the neonate predisposes it to chilling while it may be weaker or even premature when compared with a single or twin. Additionally, the dam may not have enough colostrum during the first few hours after delivery to adequately feed a large litter.

## Tips for Adding Clover to Pastures and Hay Fields

*John Jennings, Professor - Forages*

The spike in fertilizer prices created a lot of interest in clover and other legumes. Legumes have many desirable traits including excellent forage quality and their ability, along with symbiotic bacteria, to fix nitrogen from the air. Any forage produced by the legume does not require nitrogen fertilizer, and if properly managed, the N in the legume can be recycled to benefit other forages in the pasture. Legumes offer benefits in both fescue and bermudagrass pastures. In bermudagrass, legumes extend the grazing season by providing forage in spring before bermudagrass breaks dormancy, and the N that is recycled through grazing and decaying plant material gives a yield boost for the bermuda. In fescue, legumes reduce fescue toxicity as well as providing N. Both annual and perennial legumes can be grown.

Adding legumes to pastures is not complicated, but following these steps increase success:

1. Most legumes have a higher soil fertility requirement than grasses, so a soil test is the first step. Soil pH should be above 6.0, and phosphorus and potassium levels should be near optimum for best results. Soil tests from several fields can help identify where legumes have the best chance of growing and where major fertility changes are needed before attempting planting.
2. Select a legume species and find a seed source well in advance of planting. Your local dealer may not have the desired seed on hand the day before you want to plant. Annual legumes include crimson and arrowleaf clover or hairy vetch. Other annual clovers include subterranean, rose, ball or berseem. Perennial legumes include white and red clover or alfalfa. Each has different characteristics and growth patterns.
3. Make sure the seed is pre-inoculated or be sure to purchase the correct rhizobia bacterial inoculant for the legume species you selected. Check the label on the inoculant package to match it with the correct legume. Red clover inoculant does not work for crimson clover or arrowleaf clover.

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4. Schedule a week window for planting. For fall planting, late September to mid-October works well most years. Legumes can be planted in dry soil and will come up after fall rains. Delaying planting too late waiting for “ideal” conditions may make the legume germinate during cold weather, which can reduce establishment success. For winter planting, the month of February to early March works well.
5. The grass sod needs to be grazed or clipped short, preferably down to 2 inches or less, before interseeding the legume. Short sod allows the seed to reach the soil easily or allows the no-till drill to place the seed at the right depth.
6. Make sure to get good seed/soil contact, but don’t plant the seed too deep. For broadcasting seed, pull a drag or harrow over the field before or simultaneously with planting. This opens the grass residue so the small legume seed can reach the soil surface. For planting with a no-till drill, set the drill so that the disk openers barely cut the sod or even so that they don’t cut the sod. Use more down pressure on the press wheels to push

the seed into the soil surface rather than depending on the disk openers. Setting the disk openers to cut too deep is a common mistake. The depth of the cut determines the depth of planting, and the seed should not be planted deeper than ¼ inch.

7. Graze across the field in early spring to control fescue, ryegrass or weeds before the clover comes up. This allows more light to reach the legume seedling. Remove cattle when the legume is emerging well.

8. In spring, rotationally graze the field to improve legume persistence. If the legume is in a hay field, make sure to fertilize the field according to soil test recommendations for legume/grass. This means do not apply nitrogen fertilizer. Nitrogen will cause excess competition from the grass, resulting in shading and loss of the legume.

For more information on legumes, inoculation and drill calibration, ask for these fact sheets at your county Extension office or look on the web at www.uaex.edu under publications:

- FSA2139, *General Traits of Forage Grasses Grown in Arkansas*
- FSA2151, *General Traits of Winter Annual Clovers Grown in Arkansas*
- FSA3111, *Calibrating Drills and Broadcast Planters for Small-Seeded Forages*

## Monitor Lamb/Kid Worm Burden

*Steven M. Jones, Associate Professor*

May through September is a critical time to closely monitor the internal parasite burden of lambs and kids. Preferably, monitoring would start in April. The internal parasite of principal concern during the summer months is *Haemonchus contortus*, the barber pole worm. Lambs and kids grazing on pastures contaminated with large numbers of infective *Haemonchus contortus* larvae can get terminally ill very rapidly during warm, wet weather. It would not be uncommon that within a 7- to 10-day period a lamb or kid could go from a perky animal with energy to bounce around a pasture to an animal on the threshold of death, lethargic and with little energy to move about. Unless an effective rescue treatment is applied at this stage, the chance of survival is very low.

Although rotational grazing is a good strategy to manage pasture health and provide quality forage, it does not prevent *Haemonchus contortus* from building up to very high levels on pasture. Under the favorable temperature and moisture conditions existing in most summer pastures, eggs hatch to the infective larval stage in 4 to 7 days. Newly hatched larvae remain near the fecal pellet and pass through three stages of larval development termed L1, L2 and L3. The L3 stage is termed the infective stage because this larva will climb up blades of grass and wait to be ingested by grazing animals. Once the L3 stage has been ingested, it molts into an L4 larva stage and then molts into an immature adult. When adults reach about 14 days of age in the stomach of the infected animal, they begin laying eggs. The entire life cycle from egg to egg can occur in as little as 24 to 25 days.

Depending upon chemical dewormers and a regular deworming schedule is, at best, a short-term fix. By now, sheep and goat owners who are serious about long-term production know that chemical resistance is an issue and that there is documented parasite resistance to all classes of currently available chemical dewormers. No chemical dewormer is 100% effective. Used repeatedly over time, the chemical will lose its effectiveness as the percentage of worms resistant to the chemical increases in the worm population on the farm. It's important to understand that every time a chemical dewormer is used, there is some selection for resistant worms.

There are two main tools livestock owners can use to monitor lambs and kids for internal parasites: the FAMACHA eyelid score system and fecal egg counts.

How should lambs/kids be monitored during this critical period? There are two main tools that livestock owners can use: the FAMACHA eyelid score system and fecal egg counts. Both require time and regular application to be effective. Since few producers have the time, expertise and equipment to do fecal egg counts, they will have to depend upon their local veterinarian. The local vet may not have the time and/or staff to get fecal egg counts done in a timely manner. That leaves the FAMACHA system.

The FAMACHA eyelid color score system uses a scale of 1 to 5 to grade eyelid color. The color of the lower eyelid is correlated with anemia caused by

*Haemonchus contortus* burden within the animal. A chart with eyelid color and scores is matched to the live animal's eyelid color. A bright red color score of 1 or 2 indicates low levels of anemia, and pale pink to white (scores 3 to 5) indicates increasing levels of anemia. Generally, an animal scoring a 3 or higher would be treated with an effective chemical dewormer. The value of the FAMACHA system is that it allows the animals most affected by *Haemonchus contortus* to be identified and selectively treated without using a chemical dewormer on the entire herd/flock.

The most effective use of the FAMACHA system is consistent, regular application. During the critical May through September period, this means checking lamb/kid eyelids every 7 to 10 days. Keep track of scores for individual animals and use this as a record to notice trends that are developing. This is advice that was learned the hard way and here's the story.

Beginning in April, but especially in the June through September period, is a critical time to monitor lambs and kids for internal worm burdens. Livestock owners need to recognize that early-season pasture management will have an effect on parasite burdens. If lambs and kids cannot be moved to a safe pasture or feedlot system, then monitoring by use of the FAMACHA system, combined with an effective chemical dewormer, can help to reduce lamb/kid mortality.

## Calendar of Events

**March 20, 2010** – Arkansas Goat Producers Easter Commercial Goat and Sheep Sale, Southwest District Fairgrounds, Hope.

**March 27-28, 2010** – NEA Spring Show, Paragould. ABGA-sanctioned, two shows on Saturday and one show on Sunday. Early entry deadline is March 19, 2010.

**April 10-11, 2010** – South East Arkansas Spring Fling, Hestand Stadium, Pine Bluff.

**April 17, 2010** – Arkansas Meat Goat Association Membership Meeting, 12 p.m., Western Sizzlin, Benton.

**April 24-25, 2010** – Pike County Boer Goat Show, Pike County Fairgrounds, Glenwood. Arkansas-sanctioned ABGA shows.

**April 30 through May 1, 2010** – Arkansas State Fair Spring Classic Show, Arkansas State Fairgrounds, Little Rock.

**May 1, 2010** – Arkansas State Fair ABGA-sanctioned JABGA Spring Show, Arkansas State Fairgrounds, Little Rock.

**May 7-8, 2010** – Sevier County Boer Goat Jackpot Bash (ABGA-sanctioned), Sevier County Fairgrounds, DeQueen.

**May 15-16, 2010** – Annual Spring Classic Show, Northwest Arkansas District Fairgrounds, Harrison.

**June 7-12, 2010** – JABGA and ABGA National Show in Lousiville, Kentucky, at the Kentucky Expo Center.

**July 24, 2010** – Arkansas Meat Goat Association Annual Membership Meeting and Elections, 12 p.m., Western Sizzlin, Benton.

**July 31 through August 1, 2010** – Caprine Kids Summer Swelter - Northwest Arkansas, District Fairgrounds, Harrison.

**August 14, 2010** – Jackpot Market Meat Goat Show, Northwest Arkansas District Fairgrounds, Harrison

**August 28, 2010** – Back-to-School Show, Northwest Arkansas District Fairgrounds, Harrison.

**September 25-26, 2010** – NAMGA Fall Classic - Northwest Arkansas, District Fairgrounds, Harrison.

**October 7-9, 2010** – Arkansas State Fair, Arkansas State Fairgrounds, Little Rock. Two ABGA-sanctioned Open Boer Goat Shows and one Junior Boer Goat Show.

**October 9-10, 2010** – Arkansas State Fair Junior Market Meat Goat Show, Arkansas State Fairgrounds, Little Rock.

**October 23, 2010** – North Arkansas Meat Goat Association Free Fall Goat Clinic, 8 a.m., Harrison.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

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