

Coccidiosis, the nemesis of newly weaned kids

Every goat producer deals with coccidiosis because goats are fairly susceptible to it. Adult goats develop a fairly strong immunity, but unlike other farm animals, they never develop a complete immunity as the organism is always present in the feces al-

though in relatively small numbers.

Goats are desert animals and coccidia do not survive very well in the desert environment, therefore goats never had to adapt to coccidiosis, which likely explains their susceptibility to coccidiosis. Almost all ani-



BY DR. STEVE HART, PHD

mals on the farm get coccidiosis — from horses, cattle, sheep, goats, pigs, poultry, rabbits, birds and dogs to cats. However, coccidia are specific for one species of animals and do not cross to other species, i.e., bird coccidia do not infect goats. There is additional information on coccidiosis on the Wormx web site as noted at the end of this article.

There are 18 species of coccidia that infect goats and only about four of those species cause significant sickness — with one species being the worst. Coccidia are protozoan, a class of organisms that includes amoeba, paramecium, giardia, toxoplasma, malaria, cryptosporidia and many others.

This means that if you have coccidiosis and you think the diarrhea is caused by worms and you give a dewormer, it will not treat coccidiosis.

It may help the animal some, because an animal with coccidiosis may also have a worm problem. Also, if you have diarrhea caused by worms (and some worms can cause significant diarrhea, such as the black scour worm and threadworm to name a couple), the medicines used to treat coccidiosis will do little for worms.

Sometimes we can say that coccidiosis is likely the cause of diarrhea in just-weaned young animals, but Mother Nature can fool us. After an animal has had diarrhea for 24 hours, there most likely are oocysts in the feces and the vet can readily identify them.

Since almost all animals get coccidiosis, any vet can tell if your goat's diarrhea might be caused by coccidiosis or worms. Also, coccidiosis may cause anemia and will result in a high FAMACHA score (pale eyes) and appear to be worms. Coccidiosis causes bloody diarrhea in calves, but in goats the diarrhea generally does not appear to be bloody.

Coccidiosis causes damage to various parts of the intestine. Coccidia invade cells in the intestine, which rupture, causing loss of fluid, loss of blood, inflammation, scarring and diarrhea. Severe scarring can cause an animal to be a poor doer the rest of its life as they cannot absorb food nutrients efficiently. This makes it very important to treat animals

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promptly to prevent lasting damage. Coccidiosis may also make kids more susceptible to infection by worms due to stress.

Coccidia are normally present in the environment and goat poop at a low level. Two factors determine whether a goat gets coccidiosis: How many coccidia the goat is consuming from the environment and how functional their immune system is.

Young kids do not have a fully developed immune system and when they are stressed by weaning, the immune system is easily overwhelmed by the coccidia. When one animal gets coccidiosis, their poop is loaded with coccidia oocysts. The oocysts require at least two days to become sporulated and able to infect animals. High humidity and temperature in the 80s are ideal for developing infectivity. A leaking water trough, damp or muddy conditions promote oocyst development.

The main route of infection is fecal-oral transfer. The goat is consuming feces or contaminated environment that have these sporulated oocysts present. Often, it is in the feeder or water trough that animals consume feces.

An animal with coccidiosis puts out millions of oocysts and it only takes a small amount of poop or contaminated environment (i.e., dirt, grass, etc.) to infect an animal. Some producers put the feed and water troughs outside pens and cut holes in the panels to keep poop out of feed and water troughs.

Cleaning troughs out before feeding (not just dumping them out — clean with a broom or brush) will help to prevent consuming poop. Also, feeding grain or hay on the ground can facilitate consuming poop or free oocysts and getting infected.

Older animals that have developed resistance can provide contamination for young animals and, therefore, older animals should not be housed with younger animals. Animals are generally infected about 15 days before they have diarrhea, so you need to think back to what happened two weeks earlier that caused the infection. Infective oocysts can survive for more than a year. However, they are killed by heat, dry conditions and sunlight. Most common sanitizers are not effective against oocysts.

The immune system is important in preventing coccidiosis. Stress depresses the immune system, which may be caused by weaning, traveling, new pen mates, overcrowding, poor nutrition, etc. One producer said that you can show a goat a picture of a trailer and they will get coccidiosis.

The biggest stress is the stress of weaning. Weaning stress may be reduced if animals are adapted to feed before weaning, especially a feed that has a coccidiostat in it. Also, weaned kids tend to congregate around the water, bawl and make a mudhole, which promotes oocyst buildup, thus coccidiosis.

Is weaning necessary? If you are going to sell a kid shortly for slaughter, let him stay on mom for a few more weeks before he is marketed.

Something else that can reduce the stress of weaning is low-stress weaning. Cattle people have done some research in this area and a few producers are using it. Basically, it works with rotation grazing. Move animals to a pasture for a day or two and then sort the mothers to an adjacent pasture, separated from their kids by a hot electric fence. The kids and mothers pair up across the fence the first night.

Put a dry nurse doe(s) (doe who lost her kids or dried up for some reason) in with the kids to take care of them. She will lead the kids out to graze and drink. Usually, by the third or fourth night, the does do not come back to see their kids and there is a minimum of stress and kids follow the nurse doe.

One producer in Arkansas has used this technique for at least

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six years and she says no coccidiosis, no weight loss, no bawling and kids don't miss a beat.

Sericea lespedeza (pasture, hay or pellets) has been shown to be very effective at preventing coccidiosis, especially just before and during the weaning process. There may be other plants with condensed tannins effective against worms that are also effective against coccidia. Pine bark has been shown to be effective against coccidia. Oregano oil has also been shown to be effective for prevention and control of coccidiosis.

Two feed additives are used to prevent coccidiosis, Rumensin® and Deccox®. Feeds containing these additives are often called medicated, but you have to confirm that they are medicated with one of these two drugs. Many goat feeds contain Rumensin®. Rumensin® is the only ionophore approved for goats and is more effective for preventing coccidiosis in goats than is Bovatec® which is more effective for sheep.

Cattle creep feeds often contain Rumensin®. These additives are fairly effective, but not 100%. One of the biggest problems is getting animals to eat sufficient feed to get the appropriate dose.

It is important to improve management as described above in addition to feeding medicated feeds. Generally, these medicated feeds are fed for at least three weeks before weaning to a month after weaning to prevent coccidiosis. Some sheep people feed Deccox® to their ewes in their mineral mix a month before lambing to reduce shedding of coccidia before lambs are born and this may help with goats.

The disadvantage of Deccox® is that it is very effective and when it is removed from the diet, coccidiosis may reoccur in some animals because there were not enough coccidia to train the immune system to recognize them as an enemy.

There are forms of Deccox® and Dimethox® (or other forms of this sulfa drug) that can be added to the milk of bottle-fed animals for prevention of coccidiosis in bottle-raised kids. They are added for one week every month.

There are only two approved drugs for treating coccidiosis in goats, 1) Corid® and 2) Albon® or Di-Methox®. Corid® ties up thiamine, which the coccidia needs to reproduce, and giving it at too high a dose or for longer than on the label will cause a thiamine deficiency in goats called polio (polioencephalomalacia) — in which the animal acts like it is drunk and has other neurological problems. This is remedied by stopping Corid® and giving a high dose of thiamine.

Some drugs can be mixed in the water, which is the easy way to dose an animal, but sick goats may not drink sufficient water to get their dose — individual dosing often gives better results.

Goats with diarrhea should be separated from other animals to minimize risk of spread of the disease by feces. In addition, goats

may need treatment with antibiotics for secondary bacterial gut infections and electrolytes to replace electrolytes lost by diarrhea.

There is a new family of drugs approved for use in other species for treating coccidiosis that work well with a single dose. Some producers are using these drugs that include Baycox®, Protazil® (or Clinacox®) and Marquis® — which are not approved for goats. They are pricey, effective with a single dose and some have a long drug withdrawal such as Baycox® (63 day withdrawal in Canada).

In conclusion, sanitation and management are important in prevention of coccidiosis. Prevention of fecal-oral transmission is very important. The use of a coccidiostat such as Rumensin® and Deccox® around weaning and other times of stress is useful. It is important to prevent coccidiosis to have healthier, more productive animals. If coccidiosis happens, treat animals promptly to reduce scarring of the gut and other problems.

For more information, visit the American Consortium for Small Ruminant Parasite Control website: www.wormx.info.

(Steve Hart is a Goat Extension Specialist at Langston University in Oklahoma. He conducts research on internal parasites and presents parasite workshops. He is also a member of the American Consortium for Small Ruminant Parasite Control. He can be contacted at shart@luresext.edu.)

Small ruminant, fiber conference at Cornell University in November

The Cashmere Goat Association has announced the 2019 Small Ruminant Management and Fiber Conference, to be co-hosted with Cornell University in Ithaca, N.Y., will be held on Nov. 9-10.

Professors from Cornell, Langston University and the University of Virginia will deliver lectures on health and management practices relevant to all small ruminants. Distinguished experts in cashmere and other fibers will offer presentations on fiber assessment, fiber production, and marketing concerns.

The variety of classes will appeal to both new and experienced farmers, and the specialized fiber analysis classes will satisfy the many small farm owners responding to the increased interest in American fiber. Sponsors will have the opportunity to take part in our trade show, and our class schedule will ensure that participants have time to explore all the vendor displays.

The event will be held at Cornell University, Morrison Hall, 507 Tower Road, Ithaca NY 14850.

For more information and to register, visit <https://smallruminantmanagementandfiberconference.eventbrite.com>. ■



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