



# Wild & Woolly



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## First -Ever Maryland Small Ruminant Expo

The first-ever Maryland Small Ruminant Expo will be held Saturday, February 28, 2015, at the Frederick County 4-H Camp & Activities Center in Frederick, Maryland.

The all-day event will feature separate educational programs for adults and youth. The adult program will be divided into four educational tracks: 1) forage/pasture; 2) marketing; 3) production and health, and 4) alternative enterprises. Two tracks will be held concurrently.

The youth program will include sessions related to fiber, dairy, meat, and science (wet lab). Activities will be mostly hands-on. Lunch will be a taco bar, with a choice of lamb and/or goat meat and sheep and/or goat milk cheese. Meats and cheeses will be sourced locally.

Speakers will include extension experts, as well as producers. One of the featured speakers will be Dr. Lindsay Lane. Before



Dr. Lindsay Lane

attending veterinary school in the Cayman Islands and Minnesota, Dr. Lane was the farm manager for the University of Maryland College Park. She managed the campus farm, which includes a flock of mostly Katahdin sheep.

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## New Lambing & Kidding Resources

With the help of additional sponsors and partial funding from Northeast SARE, Cornell University has created two valuable resources for sheep and goat producers. Kidding With Confidence is a Kidding Season Mentoring Program for Northeast Meat Goat Producers.

<http://www.ansci.cornell.edu/goats/Resources/GoatArticles/GoatHealth/KidCare/KiddingHandbook.pdf>

The Low Input Lambing & Kidding Guide is a Resource Guide for Managing Lambing and Kidding Without Sacrificing Animal Well Being.

[http://www.ansci.cornell.edu/goats/lowinput\\_birthing.html](http://www.ansci.cornell.edu/goats/lowinput_birthing.html)

Additional copies of these publications can be ordered through the Cornell Sheep & Goat Extension Program, Room 114, Morrison Hall, Dept. of Animal Science, Cornell University, Ithaca, NY 14853.



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## When to Test Sheep For Mineral Levels: Part I

By Joan Burke  
USDA ARS, Booneville, Arkansas



### Introduction

We are told to provide a good trace mineral for our sheep, especially when forages cannot meet their needs. How do we know that will be enough to meet the needs of the sheep? There are 16 essential minerals for sheep. Both macro, needed in relatively large amounts, and trace minerals, needed in very small amounts, are vital for many physiological functions including growth and development, immune function, and reproduction.



If there is a deficiency of any mineral, a bodily function may be compromised. For example, selenium is important in maintenance and development of muscle; a deficiency can lead to poor growth rates in lambs. However, too much of a mineral can lead to toxicity. In the case of selenium, too much can lead to sore feet and poor reproductive performance; too much copper can cause death of the animal.



Thus, it is important to provide the right balance of minerals. This is complicated by mineral interactions. For example, too much molybdenum in plants or soil can reduce the amount of copper available to the animal. Or, if phosphorus is deficient, calcium is not efficiently utilized, and both can be deficient to the animal. Other factors that affect mineral requirements are breed, age, gender, and stage of production.

Macro	Micro/trace
Sodium (Na)	Iodine (I)
Chloride (Cl)	Iron (Fe)
Calcium (Ca)	Copper (Cu)
Phosphorus(P)	Molybdenum (Mo)
Magnesium (Mg)	Cobalt (Co)
Potassium (K)	Manganese (Mn)
Sulfur (S)	Zinc (Zn)
	Selenium (Se)
	Fluorine (F)

Source: Sheep Production Handbook (2002)

The form of a mineral offered can affect the bioavailability to the animal. Environmental or management factors can play into mineral requirements or toxicities. Use of poultry litter to fertilize pastures can lead to extra copper taken up by

plants and greater availability to the grazing animal. Or, mixing errors can lead to too much or not enough of a particular mineral. Some areas of the country are deficient in copper or selenium.

### How do we know when our animals have a deficiency or toxicity of a certain mineral?

Testing of feeds, forages, and soil can give an indication of whether minerals are in balance, and are specific to the area of grazing or feeds available to the animal. Collection of animal tissue or blood can more specifically identify a suspected deficiency or toxicity within the flock.

### Why is testing important?

Testing for minerals can help troubleshoot flock health problems. Common deficiencies or toxicities of minerals occur in sheep, and largely depends on geographical location. The trace minerals included for analysis include cobalt, copper, iron, manganese, molybdenum, selenium, and zinc as a trace mineral panel.

Deficiencies of trace minerals can cause reduced appetite or feed intake (cobalt or zinc), reduced growth or weight loss (cobalt, copper manganese, molybdenum, or zinc), anemia (cobalt, iron, or selenium), suppressed or impaired immune function (cobalt, copper, manganese, zinc or selenium), and problems with reproduction (cobalt, copper, iodine, manganese, molybdenum, or selenium). In addition, copper deficiency can lead to rough or discolored hair coat and a selenium deficiency can lead to white muscle disease (nutritional muscular dystrophy). An iodine deficiency can result in goiter.

Issues with toxicities are most common with copper and selenium. For copper toxicity, liver from deceased animals will need to be collected for diagnosis as blood is not a good sample in this event. Selenium is the most toxic of the essential minerals, leading to blind staggers (likely from excess selenium in

*(Continued on page 4)*

## 2015 Winter Webinar Series: Pasture Management

A five-part webinar series will be held on consecutive Wednesday evenings in February and March 2015. All webinars will start at 7:00 p.m. EST and last for one hour. Each webinar will be followed by a question-and-answer period. The instructors will be Jeff Semler and Susan Schoenian.



Jeff Semler

A webinar is a seminar or short course conducted over the world wide web. Interaction is via a chat box. All webinars will be conducted via Adobe Connect. Anyone (anywhere) with an Internet connection may participate. A high speed connection is recommended. The webinars are open to the first 100 people who log in..

While pre-registration is not required, interested people are asked to subscribe to the University of Maryland's small ruminant webinar listserv. To subscribe, send an e-mail message to [listserv@listserv.umd.edu](mailto:listserv@listserv.umd.edu). In the body of the message, type subscribe sheepgoatwebinars. The listserv is used to communicate with webinar participants and to notify subscribers of upcoming webinars. You can

always unsubscribe to the webinar listserv by sending an e-mail message to the same address; in the body of the message, type unsubscribe sheepgoatwebinars.

The webinars will be recorded, minimally edited, and made public for viewing. PowerPoint presentations will be available for viewing and downloading at SlideShare. Links to webinar recordings and PowerPoint presentations will be available at <http://www.sheepandgoat.com/recordings.html>.

Recordings will also be converted to YouTube videos. In fact, we are in the process of converting all previous webinar recordings into YouTube videos. Visit the Maryland Extension Small Ruminant YouTube Channel to listen to any previously recorded webinar.

Previous webinar series have covered ewe and doe management, feeding and nutrition, breeding and genetics, health and diseases, ethnic marketing, foot health, internal parasites (worms), and the National Sheep Improvement Program (NSIP).

For more information contact Susan Schoenian at (301) 432-2767 x343 or [sschoen@umd.edu](mailto:sschoen@umd.edu) or go to <http://www.sheepandgoat.com/programs/2015webinars.html>.

#	Date	Time	Topic
I	February 4	7 p.m. EST	Planning a pasture system
II	February 11	7 p.m.	Pasture plants, including alternative forages
III	February 18	7 p.m.	Pasture and grazing management
IV	February 25	7 p.m.	Pasture nutrition
V	March 4	7 p.m.	Pasture health problems

## Congratulations to Marylanders

Congratulations to Michael and Colleen Histon. They were presented with the 2014 Shepherd of the Year award at the Maryland Sheep Breeders Association annual meeting on October 25. The Histons are owners, since 2010, of Shepherd's Manor Creamery, Maryland's first and only sheep dairy.

Congratulations to Dawn and Steve Richardson from Grindstone Ridge Farm in Myersville. They were named the Frederick County Sheep Breeders Association 2014 Shepherds of the Year. The award was presented at the association's annual banquet on November 6.

Congratulations to the Maryland Sheep Breeders Association (MSBA) for being named this year's winner of the American Sheep Industry Association's (ASI) state membership contest. The Maryland association logged a 56-percent increase in membership for states with \$2,000 or less annual dues. New Mexico recorded a 142-percent increase in the larger dues category.

## Featured Breed: Savanna(h)

The Savanna goat is relatively new to the United States, having been imported in the late 1990's. While the popularity of the breed is growing, the number of Savanna goats is significantly less than the other meat goat breeds, such as Boer, Spanish, Myotonic, and Kiko.



Savanna goats

(image courtesy of North American Savannah Assoc.)

The Savanna goat was developed in the 1950s from the indigenous goats of southern Africa. It was developed from similar goats as the Boer and Kalahari Red, but different traits were emphasized. The Savanna was developed in harsh bush country to thrive in a minimum care, Savannah environment. A breed registry was established in South Africa in 1993.

Savanna goats are typically all-white. Their skin is black-pigmented. They have lop ears, similar to the Nubian. Their ears may be speckled with black hairs and pigments. Their horns are dark black and grow backwards from the crown of the head.

Savannas are considered to be a material breed. According to the North American Savannah Association, the traits that are important in preserving the integrity of the South African breed are exceptional mothering, hardiness, and vigorous kids. The breed's adaptability to different production environments is another priority of the breed association.

Savanna goats are purported to have a long breeding season, being able to breed at any time during the year. A high twinning rate is possible.

While Savannas seem to resemble their Boer cousins in all but coloration, there are claims that they are hardier and more resistance to internal parasites. Unfortunately, there is no data to support these claims (yet). Fortunately, several universities have initiated research projects to evaluate Savanna goats and determine their role in commercial US meat goat production systems.

<http://savannahassociation.com>

### When to Test Sheep For Mineral Levels" Part 1 (continued from page 2)

forages), abnormal movement or posture, respiratory distress or diarrhea, emaciation or anemia. Excess molybdenum, typically found in forages, can lead to a copper deficiency due to the antagonistic nature of these minerals.

While there can be imbalances of the macro minerals, some like phosphorus and potassium are difficult to measure because they don't correlate with dietary status, but electrolytes can also be measured.

#### What should be collected from the animal for testing?

Serum and whole blood are the most common samples to collect from the live animal. Serum can be used for most minerals (macro minerals, cobalt, copper, iron, molybdenum, selenium (as an indicator of dietary selenium intake but does not tell if the sheep is deficient in selenium), and zinc). Labs that use inductively coupled plasma/mass spectroscopy (ICP/MS) should be used for trace mineral analysis.

Blood concentrations of some minerals like copper represent primarily the transport pool (an indicator of

dietary intake) rather than a functional fraction, and liver is the sample of preference, but less practical on farm or ranch. Whole blood should be used for manganese and selenium. The liver can be used for cobalt (liver is better than serum), copper, iron, manganese, molybdenum, selenium (represents functional levels), and zinc. Recently, serum analysis of iodine became available at Michigan State University DCPAH.

#### What blood or collection tubes should be used and how should samples be stored or shipped?

For most farmers, unless submitting whole blood, it will be most feasible to have a veterinarian collect, process and ship samples since the blood needs to be centrifuged to separate the serum. The best type of collection tubes for serum or whole blood is the royal blue-top vacutainer tubes because they are mineral free.

Serum should be separated from the clot within two hours of collection. Tissue samples can also be stored and shipped in these tubes. Liver samples (from a biopsy or a deceased animal) can be frozen, refrigerated or shipped immediately. Contact the diagnostic lab for shipping procedures.

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## Changes to the 2015 Western MD Pasture-Based Meat Goat Performance Test

Several changes will be implemented for the 2015 Western Maryland Pasture-Based Meat Goat Performance Test. The purpose of the changes is to get better growth rates (ADG) and produce bigger (heavier) bucks by the end of the test, while still being able to effectively evaluate the bucks for parasite resistance and resilience.



Soy hull supplementation

The test will start and end later.

Bucks must be delivered to the test site on Friday, June 26, from 9 a.m. until 2 p.m. After a 13-day adjustment period, the bucks will be weighed on July 9 and 10 to determine starting weights. The later starting date will allow the goats to graze the warm season annual grasses and legumes upon arrival. The test will last for 84 days. Midway through the test, the goats will be switched to the cool season grass paddocks. Final data will be collected on October 1.

The test bucks will be supplemented with soybean hulls throughout the test. Supplementation will begin during the adjustment period and will be gradually increased until it reaches 0.75 lbs. per day or approximately 1.5 percent of body weight. Data from last year's test showed that the goats' pasture diet was deficient in energy.

The first half of the test will serve as a "growth challenge." The warm season annual pastures will be free from infective worm larvae when the goats begin grazing them. The second half of the test will serve as a "parasite challenge." The cool season grass paddocks will have been pre-contaminated with infective worm larvae by grazing sheep.

At the end of the test, the 10 top-performing bucks will be identified and recognized. As in previous years, the

primary selection criteria will be growth (ADG), parasite resistance (fecal egg counts), and parasite resilience (FAMACHA© scores and anthelmintic treatments). Other criteria will include WDA, ultrasound data, scrotal circumference, teat structure, and hoof health.

The nomination period for the 2015 test will be April 15 through June 1.

Eligible bucks must be born between

January 1 and March 15, 2015, and weigh a minimum of 40 lbs upon delivery to the test site on June 26. Any breed or breed cross is eligible, with or without registration eligibility. A farm may consign up to five male goats to the test. A maximum of 80 goats will be accepted for the 2015 test. Goats which fail to adapt to test conditions will be removed from the test.

The total fee for testing a goat in 2015 will be \$120, which includes a \$20 per head nomination fee. Discounted fees will be offered to Maryland residents and consignors who consign five half-sibs (bucks with same sire) to the test or whose herds are enrolled in the National Sheep Improvement Program (NSIP). NSIP is a quantitative genetic evaluation program that calculates EBVs (estimated breeding values) for meat goats (and sheep). The purpose of the latter two discounts is to encourage more meaningful genetic evaluation.

2015 will be the 10th year of the Western Maryland Pasture-Based Meat Goat Performance Test, which is conducted at the University of Maryland's Western Maryland Research & Education Center in Keedysville. Please direct any questions about the 2015 test to Susan Schoenian at (301) 432-2767 x343 or [sschoen@umd.edu](mailto:sschoen@umd.edu). Additional information is available on the blog at <http://mdgoatstest.blogspot.com>.

### When to Test Sheep For Mineral Levels" Part I (continued from page 4)

Source: Katahdin Hairold, Winter 2014. Reprinted with permission of author and editor.

#### *In the next issue:*

When is blood less accurate for assaying trace minerals?

Are there concerns about factors that could alter concentrations of minerals?

What are the costs of testing for minerals?

Are all mineral preparations the same?

## The Periparturient Egg Rise

by Susan Schoenian

Around the time of parturition (lambing/kidding), small ruminant females lose some of their naturally-acquired immunity to internal parasites (worms). It is called the periparturient egg rise.



The length and intensity of the parturient egg rise varies by species, breed, individual, and season of parturition. It may start 2-4 weeks before lambing/kidding and last for up to 6-8 weeks after. When lambing/kidding occurs in the spring, the eggs deposited during the periparturient egg rise are largely responsible for the infections that lambs and kids acquire during summer grazing.

There are several options for dealing with the periparturient egg rise. The traditional approach has been to deworm females prior to breeding or soon after the first killing frost. The rationale behind this treatment is to kill the hypobiotic worms.

Hypobiotic worms are immature worms that go into a dormant state instead of continuing their development. In most climates, this occurs in the winter. In the spring, the worms resume their life cycles, and when combined with the periparturient egg rise can result in significant pasture contamination. In the more northern climates, hypobiotic worms are the primary means by which worms overwinter.

A good strategy for spring lambing and kidding is to deworm pregnant females during the last month of pregnancy. Deworming ewes and does soon after parturition may be a more convenient option. As with the prior strategy, it is important to use a dewormer that is effective against hypobiotic larvae. The macrocyclic lactones (e.g. Ivomec® and Cydectin®) are considered to be the most effective against hypobiotic larvae.

Nowadays, there are more sustainable approaches to dealing with the periparturient egg rise. Targeted selective treatment can be used to identify those females that require

deworming or may benefit from treatment. Leaving some animals untreated will increase refugia and slow the rate of anthelmintic resistance. Unfortunately, the worms have developed varying degrees of resistance to all dewormers and dewormer groups.

Targeted selective treatment involves use of the FAMA-CHA© system and Five Point Check©. The Five Point Check© is an extension of the FAMACHA© system. It involves five checkpoints on animal's body: eye (anemia), jaw (bottle jaw), back (body condition), tail (scours), and nose (nasal discharge) and/or coat condition; and can be used to determine treatment need for all internal parasites that commonly infect small ruminants. The FAMACHA© system is limited to blood-feeding parasites, such as the barber pole worm.

Another more sustainable approach is to increase the level of protein in the late gestation ration. Studies have shown that higher protein diets reduce fecal egg counts in periparturient ewes. By-pass protein is especially beneficial. By-pass protein is protein that by-passes the rumen and is digested in the small intestines.

Feed composition tables usually list the percentage of by-pass protein in a feedstuff. Proteins of animal origin (e.g. fish meal) are usually higher in by-pass protein. Co-products, such as corn gluten meal and distiller's grains also tend to be higher in by-pass protein than traditional feedstuffs. Roasted soybeans are another good source.

A final option is management. If sheep and goats are housed indoors (in pens or dry lot) during the periparturient period (late gestation through early lactation), the periparturient egg rise will not be an issue, as ewes and does will not be depositing worm eggs onto the pasture. FAMA-CHA© and the Five Point Check© can identify females that are clinically parasitized and require deworming.

For more information about internal parasite control in small ruminants, be sure to visit the web site of the American Consortium for Small Ruminant Parasite Control (ACSRPC) at [www.wormx.info](http://www.wormx.info) or [www.acsrpc.org](http://www.acsrpc.org).

### More Information On Sheep & Goats Can Be Accessed At:

<http://www.sheepandgoat.com/>  
<http://www.sheep101.info/>  
<http://mdsheepgoat.blogspot.com>

<http://www.acsrpc.org>  
<https://www.facebook.com/MDSsmall>  
<https://twitter.com/MDSsheepGoat>

<http://mdgoatquest.blogspot.com>  
<http://issuu.com/mdsheepgoat>

## Research Updates



- At Fort Valley State University, there was no effect of pre-slaughter diet management on hormone and blood metabolite concentrations in goats and sheep. Pre-slaughter diet (hay vs. concentrate) and feed deprivation time (12 or 24-hr) also had no effect on total coliform counts and *E. coli* counts of carcass swab samples. [J. Anim Sci & Biotech, August 2014].
- In a Texas Tech Study, there were no differences in rectal prolapse occurrence in short, medium, or long-docked lambs. Ewe lambs were no more likely to prolapse than male lambs, and no lambs expressing the callipyge phenotype prolapsed [Sheep & Goat Res. J, March 2014].
- According to New Zealand researchers, sex of lamb has a big impact on meat yield. At the same age, female lambs are fatter, on-average, than male lambs. Researchers also determined that time of slaughter should be different for male and female lambs, as meat quality can be adversely affected by sex. [GlobalMeatnews.com, November 2014].
- Researchers at Kansas State University found that sheep will voluntarily graze sericea lespedeza, and therefore could help sustainably control the noxious weed in parts of Kansas and neighboring states. [K-State Research & Extension News, May 2014] Editor's note: sericea lespedeza is purposely planted in other states, as it is a high-tannin forage that has been scientifically proven to reduce parasite loads in sheep and goats.
- At West Virginia University, lambs artificially-infected with 10,000 *Haemonchus contortus* infective larvae and supplemented with oral Vitamin E (10 IU/kg BW) had lower PCV reduction, fecal egg counts, and 49% less worm burden than infected lambs receiving the NRC recommended level of Vitamin E in their diet (5.3 IU/kg BW). Further studies are needed to determine the mechanism by which vitamin E affects greater recruitment of innate effector cells to the abomasum. [J. of Vet Parasitology, September 2014].

- Adult worms collected from young goats fed 75% sericea lespedeza leaf meal pellets (vs. alfalfa pellets) suggest a possible mechanism of sericea lespedeza against female *H. contortus* in the abomasum: direct action of the condensed tannins on the cuticle of the worm. Worms recovered from treated animals showed a shrunken, disheveled cuticular surface. [J. of Vet Parasitology, November 2014].
- South African researchers concluded that selection for parasite resistance in Merino sheep will not result in unfavorable, correlated responses in the vast majority of subjective wool and body conformation traits. In fact, sheep with high fecal egg counts are likely to have excessive wool oil, thicker and bulkier staples, and lower scores for top line [South African J. of Animal Science [2014].
- Brazilian and French researchers used visible spectroscopy of fat to discriminate lambs that were pasture-fed, concentrate-fed, or concentrate-finished after pasture-feeding. Their methods correctly classified lambs 95.6 and 95.9 percent of the time, respectively. [Meat Science, In Press, March 2015].
- In West Virginia, meat samples from goat kids finished on alfalfa, red clover, or orchardgrass pastures did not differ in ash, intramuscular fat or crude protein content, or in concentrations of omega6 and omega3 fatty acids or the omega6 to omega3 ratio. Kids fed on orchardgrass had higher 18:1trans-11 fatty acids. Carcass conformation score was greater for kids finished on alfalfa vs. red clover (intermediate) or orchardgrass. [Meat Science, December 2014].
- A new study links accumulation of muscle and intramuscular fat to earlier puberty in lambs. Researchers at the University of Western Australia determined that muscle is involved in sending signals to the brain about the maturity of the body. The signal from muscle might be the hormone follistatin. Intramuscular fat produces the hormone leptin, known to control puberty (Phys.org, December 2014).

## Timely Topics - from the American Consortium for Small Ruminant Parasite Control

Each month, the web site of the American Consortium for Small Ruminant Parasite Control ([www.acsrpc.org](http://www.acsrpc.org) or [www.wormx.info](http://www.wormx.info)) features a "Timely Topic." The article is usually written by a member of the consortium. The consortium was organized in 2003 in response to the widespread emergence of anthelmintic-resistant worms. Members include small ruminant veterinarians, animal scientists, and extension specialists from multiple states and countries.

### Timely Topic: January 2015

#### *Silver Bullet Seconded: Can the Right Grazing Strategy Control Parasites?*

by Dave Scott  
NCAT-ATTRA - Montana

We have a 200-ewe operation in southwest Montana that is pasture-based. Now, you may be thinking that Montana and the dry ol' West can never have as many parasite problems as the Southeast and Northeast. However, under the right conditions, we certainly can -- and do. The conditions are: irrigated pasture and lots of sheep.



Within five years of startup, we were deworming our ewes and lambs three to four times a summer and once in the fall. We did not know anything about FAMACHA© back then, so the shotgun blast was the order of the day. When the white wormers lost their effectiveness, Ivomec® was the only dewormer that we had left. Uh oh!

Here's what we did. We divided up our 30 acres of pasture into 36 paddocks with temporary fencing (electric nets) and increased our pasture rest from 22 days to 35 days. Next, we moved the sheep to a new paddock every day. Lastly, we made every effort to exit a paddock leaving six to eight inches of grass behind. Then we ratcheted our deworming down, down, until, after three years, we were not deworming any lambs or ewes at all.

It worked. In 2013, we ran 180 ewes and 280 lambs on the 30 acres from May 1 until August 31. We dewormed no lambs and no ewes. By 2014, we had learned how to FAMACHA© and we found 16 out of 330 lambs with a score of 4 or 5. The rest were scored 1, 2, or 3 and were not dewormed.

Read full article at <http://www.wormx.info/Resources/Topics/Scott2015.html>.

### Timely Topic: December 2014

#### *Sericea Lespedeza: "Wise Man's Alfalfa"*

by Dr. Tom Terrill  
Fort Valley State University

Because of its ability to tolerate infertile, acidic soils and grow well on sloping land with minimal lime and fertilizer inputs, the perennial warm-season legume sericea lespedeza (SL; *Lespedeza cuneata*) has earned the nickname "Poor man's alfalfa." With recent research on the potential health and environmental benefits of including SL in the diet of ruminant animals, it may be time for a new nickname: "wise man's alfalfa."

Like other forages that contain condensed tannins (CT), a compound that binds to protein when the plant is chewed and digested, SL is non-bloating. It also lowers the production of methane from the animal's rumen, reducing the contribution of this powerful greenhouse gas to global warming.

However, for farmers trying to keep their livestock healthy during a period when anthelmintic drugs are rapidly losing their effectiveness, the excellent anti-parasitic properties of SL in fresh (grazed) or dried (hay, leaf meal, pellets) forms in the diet of sheep, goats, and other ruminants may be most important.

Read full article at <http://www.wormx.info/Resources/Topics/Terrill2014.html>.



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**Timely Topics - from the American Consortium for Small Ruminant Parasite Control (continued from page 8)**

**Timely Topic: November 2014**

*The Silver Bullet of Worm Control in Small Ruminants*

by Paul Casey

Heifer Project International

I manage a 60-ewe sheep flock at Heifer Project International's Ranch in Perryville, Arkansas. About 10 years ago, we started looking at alternative methods of controlling gastrointestinal parasites in sheep. We tried garlic juice, papaya seeds, pumpkin seeds, an herbal dewormer, grazing chicory, grazing sunn hemp, and intensive rotational grazing. In the end, rotational grazing was the only practice we kept. We implemented stringent culling and rotational grazing at the same time and within a few years parasite problems in the ewes were nearly non-existent.

While I know that our strict ewe culling and ewe lamb selection helped reduce our worm problems, I believe the grazing is what made it successful. By controlling what the sheep eat, when they eat it, and how long they are on a given section of pasture, the manager controls forage intake, forage quality, plant regrowth, and relative ingestion of parasite larvae. Grazing management is the most powerful tool we have for maintaining animal health and performance.

While we had minimal problems with the ewes, obtaining consistently good lamb weight gains, especially after weaning (at 4-6 months old) was very difficult. Grazing more summer annuals and speeding up the rotation may have helped improve the weight gains.

Read full article at <http://www.wormx.info/Resources/Topics/Casey2014.html>.

**Timely Topic: September 2014**

*Disgusting Tapeworms*

by Dr. Anne Zajac

VA-MD Regional College of Veterinary Medicine

While many internal parasite infections of sheep and goats can only be diagnosed with the use of a microscope, tapeworm infections are all too apparent. Tapeworm segments, either individually or in long chains, can be seen in manure or even emerging from the host animal, and are a familiar sight to most sheep and goat owners. The most common tapeworm of sheep and goats is *Moniezia expansa*.

Adult tapeworms live in the small intestine. A mature tapeworm consists of hundreds or thousands of segments. By the time a segment reaches the end of the worm it is packed with fertilized eggs. The segment is released from the worm and passes out into the environment.

There are various pros and cons to treating sheep and goats for tapeworms.

As with other worms, animals will vary in their susceptibility to tapeworms. Young sheep and goats and adults with poor nutrition or other health problems will be more susceptible. Drug treatment can supplement, but never replace, good nutrition and management.

As with barber pole worm, the best strategy is to learn to live with the parasite and aim for control, not eradication. A treatment in spring when segments first appear in the manure will help reduce the level of infected mites for the grazing season. If desired, a treatment in fall might reduce the number of mites overwintering with the tapeworm larva.

Read full article at <http://www.wormx.info/Resources/Topics/Zajac-Tapeworms.html>.

**Pros to treating sheep and goats for tapeworms**

Some people find tapeworms distasteful

There is some evidence that weight gains in lambs are improved by treatment

It has been suggested that heavy loads of tapeworms may alter intestinal function enough to create a more favorable environment for other disease causing organisms

**Cons to treating sheep and goats for tapeworms**

There aren't many studies, but the conclusion from the majority is that there is no production benefit from treatment. This means there was no weight gain advantage or reduction in clinical disease (diarrhea, etc.) in treated animals

The hypothesis that heavy tapeworm infection may be associated with changes in intestinal function that could predispose sheep and goats to bacterial disease has not been tested in any controlled experiments.

The only approved product in the U.S. for treatment of sheep for tapeworms is albendazole (Valbazen®).

Treatment for tapeworms with Valbazen® increases selection for resistant barber pole worms.

The most effective drug for tapeworm treatment (praziquantel), which has no activity against barber pole worms, is not approved for use in small ruminants in the U.S.

*(Continued on page 10)*

## Timely Topics - from ACSRC (continued from page 9)

### Timely Topic: August 2014 Should I Consider Using LongRange™ Dewormer for Para- site Control in Small Ruminants

by Dr. Ray Kaplan  
University of Georgia



LongRange™, a relatively new product from Merial Ltd, is gaining wide scale use in cattle, for which the product was developed. LongRange™ contains the drug eprinomectin. Eprinomectin is in the same family of drugs as ivermectin (Ivomec®). This family of drugs, the macrocyclic lactones (or MLs), also includes the drugs doramectin (Dectomax®) and moxidectin (Cydectin®).

LongRange™ is a new and novel formulation of eprinomectin whereby the drug is present in the tissues for a very long period after it is injected. The pharmacology could very well differ among different types of animals. It is quite possible, even probable that the drug levels achieved in goats will be below those necessary for full effectiveness.

If you already have high-level ivermectin or moxidectin resistance, which is quite common, the product will be ineffective on day one. If you are one of the few lucky farms without ivermectin resistance, you likely won't be for long if LongRange™ is used. The one place where LongRange™ might serve a useful purpose is for the prevention of meningeal worm (*P. tenuis*) where this worm is a significant concern (particularly in camelids).

Read full article at <http://www.wormx.info/Resources/Topics/Kaplan2014.html>.

## Zactran® Eliminates Foot Rot

Gamithromycin (Zactran®) is macrolide antibiotic licensed for cattle in the treatment and control of bovine respiratory disease. It is not approved for sheep (or goats); however, it may be prescribed by a veterinary for extra-label use.



Foot rot is caused by the anaerobic bacterium *Dichelobacter nodosus*. *D. nodosus* does not survive for long in the environment, so the main reservoir of infection is in the animals. In theory, foot rot can be eliminated from a flock, through a combination of vaccination and/or antibacterial treatment (parenteral or topical) and/or culling of infected animals, coupled with good biosecurity.

In a German flock with a high prevalence of foot rot, 184 sheep were given the standard dose of Zactran® (6 mg/kg). The injection was given subcutaneously in the axilla. On day 23, 19 sheep were re-treated with Zactran®. On day 45, no lame sheep or positive lesion scores were observed.

In a Danish study, 48 flocks comprising around 9000 sheep were given the standard dose of Zactran®, subcutaneously on the side of the neck. Of the 48 participating flocks, 44 remained free of foot rot and *D. nodosus* more than one year later.

The results from both studies showed that whole-flock, systemic antibiotic treatment can eliminate foot rot and *D. nodosus*. In the Danish study, a single treatment with gamithromycin was sufficient. In the German flock, two treatments at an interval of 22 days were required to eliminate foot rot in some sheep.

Source: Short Communication, Veterinary Record, January 2014

## Penn State Extension Home Study Courses



Penn State Extension offers several home study courses: sheep, meat goats, beef, and livestock grazing. All are six week courses. The next sheep, meat goat, and beef courses are scheduled to begin on February 4, 2015. The registration deadline is January 26, 2015. Registration is now open. The Livestock grazing course is held in the fall.

There are six lessons in each course. Lessons are mailed weekly for six weeks. The first lesson will be mailed or emailed on February 6. Postal participants will receive a CD of materials. Participants read lesson materials and complete a worksheet. The worksheet is returned to the instructor for comments and suggestions for ways to improve the participant's own operation.

The cost of each course is \$50 via internet/e-mail and \$85 via the postal service.

<http://extension.psu.edu/courses/sheep>

<http://extension.psu.edu/courses/meat-goat>

**First –Ever Maryland Small Ruminant Expo (continued from page 1)**

Pre-registration is required by February 14. The registration fee is \$35 per adult and \$25 per youth (ages 8-18).

You can register online line via EventBrite at <http://2015mdexpo.eventbrite.com>. You can pay by credit card, but there is a small fee to do so. Alternatively, you can mail your registration information along with a check payable to the University of Maryland for payment to the MD Small Ruminant Expo, WMREC, 18330 Keedysville Road, Keedysville, Maryland 21756.

In addition to the University of Maryland’s Small Ruminant Extension Program, sponsors of the event will include the MPWV Meat Goat Producers Association and the University of Maryland’s Beginning Farmer Program.

For more information contact Susan Schoenian at (301) 432-2767 x343 or [sschoen@umd.edu](mailto:sschoen@umd.edu) or go to <http://www.sheepandgoat.com/programs/2015Expo.html>.

Time	Track 1 Pasture	Track 2 Health/Production	Youth track
8:30	Registration		
9:30	Alternative forages and forage identification (Jeff Semler & David Gordon)	Working with your veterinarian (Dr. Lindsay Lane) Hoof Health (Susan Schoenian)	Dairy (April Barczewski)
10:45	break		
11:00	Finishing lambs/kids on pasture (producer panel)	Drug use in small ruminants (Dr. Lindsay Lane) Internal parasites (Susan Schoenian)	Meat (Chris Anderson)
12:15	Lunch: Taco Bar		
	Track 3 Marketing	Track 4 Profit centers	Youth track
1:15	Marketing options for small ruminant producers (Ginger Myers and Susan Schoenian)	Wool production and marketing (producer panel)	Fiber (Mary Beth Bennett)
2:30	break		
2:45	Producer marketing experiences (producer panel)	Small Ruminant dairying (producer panel)	Science (Dr. Lindsay Lane)
4:00	adjourn		

**2015 Maryland Shearing School**

The 2015 Maryland Sheep Breeders Association (MSBA) Sheep Shearing School will be held Friday and Saturday, April 17-18 (Friday and Saturday), 9:30 a.m. to 3:30 p.m. at Ridgely Thompson's farm at 1942 Uniontown Road, Westminster, MD 21157.

The school is open to anyone in Maryland, Delaware and surrounding states who wants to learn to shear sheep. The New Zealand method of shearing will be taught. Shearing machines will be provided. Blade shearing will not be taught. Instructors are Aaron Geiman and Emily Chamelin-Hickman. Aaron is an Agriscience teacher at North Carroll High School. Emily is a professional shearer.

The registration fee is \$80 per person and includes a copy of ASI's Sheep Shearing Notebook and an instructional DVD. Pre-registration is required. No registrations will be accepted after April 5. Participation is limited to 20 people. The minimum age is 16.

Checks should be made payable to the Maryland Sheep Breeders Association, Inc. and mailed to Aaron Geiman at 429 Hook Road, Westminster, Maryland 21157.

Download registration form at <http://www.sheepandgoat.com/programs/2015ShearingSchool.pdf>.

### Calendar Of Events

#### January 28-31

American Sheep Industry Convention  
Reno, Nevada  
Info: [www.sheepusa.org](http://www.sheepusa.org)

#### March 13-14

Appalachian Grazing Conference  
Morgantown, West Virginia  
Info: <http://www.grazeappalachia.org/>

#### February 4, 11, 18, and 25 and March 4

Webinar Short Course: Pasture Management for Small Ruminant Producers  
Info: <http://www.sheepandgoat.com/programs/2015webinars.html>

#### February 4-7

PASA Farming for the Future Conference  
State College, Pennsylvania  
Info: <http://conference.pasafarming.org/>

#### February 12

Mid-Atlantic Women in Ag Conference  
Dover Downs Hotel & Casino, Harrington, Delaware  
Info: <http://extension.umd.edu/womeninag/2015-conference>

#### February 28

Maryland Small Ruminant Expo  
Frederick County 4-H Camp & Activities Center, Frederick, Maryland  
Info: Susan Schoenian at [sschoen@umd.edu](mailto:sschoen@umd.edu) or (301) 432-2767 x343 or  
<http://www.sheepandgoat.com/programs/2015Expo.html>

#### March 13-14

Appalachian Grazing Conference  
Morgantown, West Virginia  
Info: [www.grazeappalachia.org/](http://www.grazeappalachia.org/)

#### April 17-18

Maryland Shearing School  
Ridgely Thompson Farm, Westminster, Maryland  
Info: <http://www.sheepandgoat.com/programs/2015ShearingSchool.pdf>

## UNIVERSITY OF MARYLAND EXTENSION

*Solutions in your community*

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