

Wild & Woolly



Maryland's Sheep & Goat Producer Newsletter

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Sheep Research @ WMREC

After doing a buck performance test for 11 years (2006-2016), the University of Maryland's Western Maryland Research & Education Center (WMREC) has made a transition to sheep research. The first project was a comparison of ram, wether, and short-scrotum lambs.



2018 project

Sixty male lambs (East Friesian x La-caune) from a commercial sheep dairy were used to compare growth, carcass, and fertility traits of ram, wether, and short-scrotum "ram" lambs. By day 10 of age, every third male lamb was either left a ram (n=19), castrated (n=24), or made a short-scrotum (n=17).

What is a short scrotum?

A short-scrotum is a cryptorchid. It is made by pushing the testicles up inside the body cavity and banding the empty scrotum. It is an easier and more humane procedure than castration (by banding). Because they still have testicles (thus, a source of testosterone), short-scrotum "rams" should demonstrate the superior growth that is common to intact males. But

(Continued on page 6)

4-H Junior Research Academy

by Ashley Travis
4-H Educator, Washington County

The summer of 2018 was not only filled with exciting 4-H events, such as camps and fairs, but was also the premier of the University of Maryland Extension 4-H Junior Research Academy at the University of Maryland's Western Maryland Research and Education Center (WMREC).

This project is a collaborative effort between the Maryland Small Ruminant Research team, comprised of University of Maryland Extension Agricultural Educators, 4-H Educators, and faculty members from West Virginia University and Virginia State University.

Within this program, several youth had experiences unlike any before, as they were able to observe and learn about small ruminant research. The goal of the 4-H Junior Research Academy is for youth to become involved in the scientific process in order for them to gain a better understanding of applied research (field research).

The sheep research project this year was a comparison of growth, carcass characteristics, and fertility traits of rams, wethers, and short-scrotum ram lambs. The youth participating

(Continued on page 3)

Breeding For The First Time

By Susan Schoenian

A common question is: when should I breed my ewes/does for the first time? How old do they need to be?

Though 7 months should be considered the minimum age for breeding, size (weight) is more important than age when deciding when to breed for the first time. Age at puberty is also a factor, as different breeds reach puberty at different ages. Nutrition and season can also influence age at puberty.

Regardless of breed, ewe lambs and doe kids should achieve 60 to 70 percent of their mature weight before being bred for the first time. They should also be in good body condition, 3 or greater. It may be necessary to provide extra nutrition in order for ewe lambs and doe kids to reach sufficient size for early breeding. At the same time, replacement females should not be fed for maximum gain. Research has shown that over-feeding may impact future milk production.

It is important to breed, feed, and manage ewe lambs and doe kids separately from mature females, ideally until they are bred for the second time. They should be bred separately from the mature females because they are less likely to gain the male's attention. Special consideration should be given to the male that will breed young females. Ewe lambs/doe kids should not be mated to males that are too large. They should be bred to males of the same or smaller breeds to prevent potential birthing difficulties.



Ewe lambs and doe kids should be fed and managed separately because they are still growing and have different nutritional requirements as compared to mature females. Generally, a more nutrient-dense diet is required. They may also have difficulty competing with older females for feeder space.

Ewe lambs/doe kids bred to lamb/kid at 12 to 14 months of age tend to experience more problems than mature females, especially with mothering and milk production. For this reason, many producers breed them later than the rest of flock. This way they can give their first-time mothers more attention. Some producers find it advantageous to wean the lambs/kids from yearling dams earlier, so the young mothers have more time to regain their body condition.

At the same time, there are many advantages to breeding ewe lambs and doe kids. Primarily, early breeding is advocated as a means to increase productivity and profitability. There is an earlier return on investment. Research has shown that ewes that are bred to lamb for the first time as yearlings will have a higher lifetime productivity than ewes that are bred to lamb for the first time as two year olds. Ewes that lamb as yearlings will be also better mothers as 2-year olds than the ones that lamb for the first time at 2.

More rapid genetic improvement is made if replacements are saved from yearling dams. The yearlings should represent the best genetics in the flock/herd. Early breeding can serve as an early selection tool to cull out ewe lambs and doe kids that fail to conceive or have poor maternal performance.

With good management, breeding ewe lambs and doe kids to produce offspring at 12 to 15 months of age can be a pleasant experience and profitable practice.

This article was originally published in the Delmarva Farmer and Lancaster Farming.

4-H Junior Research Academy (continued from page 1)

in the academy were able to watch the lambs being weighed and record data, observe carcass scanning, and assist with collecting data from libido and other reproductive testing.

The youth also performed a literature review and explored other studies which were similar to this study. They enjoyed comparing the results of other studies to the results of this study.

Once the reproductive portion of the project was completed, the youth created a research poster that they exhibited at the Maryland State Fair.

A special thank you to Susan Schoenian and the Maryland Small Ruminant Team for their support of our young people and encouraging youth to pursue careers in animal science and research.



Abigail Spielman (L), Kaitlyn Stoy (C) and Ashley Travis (R)



Special Thanks to Shepherds Manor Creamery

Special thanks is extended to Shepherds Manor Creamery in New Windsor, Maryland, for providing the lambs for this year's research program. Shepherds Manor Creamery is operated by Mike & Colleen Histon. It is Maryland's first and only licensed sheep dairy. The farm sells artisan sheep cheeses and soap from their flock of East Friesian x Lacaune ewes.

The lambs from the sheep dairy were healthy throughout the experiment. They had docile dispositions. They produced good carcasses.

<http://www.shepherdsmanorcreamery.com/>

Maryland Small Ruminant Team

Small ruminant research at WMREC is carried out by members of the University of Maryland's Small Ruminant Action Team. Team members include Susan Schoenian (WMREC), Jeff Semler (Washington County), David Gordon (Montgomery County), Ashley Travis (Washington County), Chris Anderson (state 4-H office), and Nelson Escobar (UMES). Meagan Perdue (Worcester County) is the newest member of the team. Out-of-state collaborators include Mary Beth Bennett (Berkeley County) from West Virginia University and Drs. Dahlia O'Brien and Stephan Wildeus from Virginia State University.

Lamb Featured in Dining Halls at UMD Campus

The sixty lambs used in the research project were purchased by University of Maryland Dining Services. Dining Services held a Harvest Festival on September 26, highlighting local food, including the lamb from the research project (and beef from the university's Wye Angus herd).

Braised leg of lamb was served to the students during the evening of the Harvest Festival. Dining Services plans to buy all the lambs from next year's research project.

Thanks to UMD Dining Services



Re-Designed Southern Maryland Meats Website Launched



The Southern Maryland Agricultural Development Commission announced the launch of the redesigned and updated Southern Maryland Meats website.

The newly presented website at southernmarylandmeats.com is a dynamic “virtual” display case featuring forty-eight regional livestock producers of locally raised quality meats. All producers represented on the website are participants in the Southern Maryland Meats (SMM) marketing and branding program, developed by SMADC to raise consumer awareness for the availability and the benefits of local farm-raised meats and increase potential for retail sales for Southern Maryland's meat producing farms.

<https://southernmarylandmeats.com/>

2018 Delmarva Small Ruminant Conference: All Worms All Day

The 2018 Delmarva Small Ruminant Conference ALL WORMS ALL DAY will be held Saturday, December 8, 9:30 a.m. to 3:30 p.m., at the University of Maryland's Western Maryland Research & Education Center in Keedysville. It is a repeat of last year's conference held at Delaware State University; however, the speakers will be assigned different topics.

All topics will pertain to internal parasite control in small ruminants. All speakers are members of the American Consortium for Small Ruminant Parasite Control (ACSRPC; wormx.info): Dr. Dahlia O'Brien, Virginia State University; Dr. Kwame Matthews, Delaware State University; Dr. E. Nelson Escobar, University of Maryland Eastern Shore (UMES); Dr. Niki Whitley, Fort Valley State University (Georgia); and Susan Schoenian, University of Maryland.

The Maryland State Board of Veterinary Medical Examiners has approved five (5) continuing education credits for veterinarians and registered veterinary technicians (RVT) who attend the conference. The conference has also been approved for five continuing education credits for Professional Animal Scientists (ARPAS).

The registration fee is \$50 per person. There are additional fees for paying online (~10%). The registration fee includes a flash drive with resource materials. Morning refreshments and lunch will be provided. When registering, indicate if you are seeking continuing education credits.

To register online, go to <https://allwormsallday.eventbrite.com>.

Instead of paying online, the registration fee (payable to the University of Maryland) can be sent to Pam Thomas at the Western Maryland Research & Education Center, 18330 Keedysville Road, Keedysville, MD 21756. Please include your contact information (name, address, email and telephone number) with your check.

Pre-registration is required by November 23. A program (brochure) can be downloaded from the registration link.

For more information about the conference, contact Susan Schoenian at sschoen@umd.edu or (301) 432-2767 x343.



ALL WORMS ALL DAY



- Researchers in New Zealand found that adding wool proteins to the diets of domestic cats improved their digestive health and could potentially do the same for people. Thus, it's possible that proteins derived from wool could someday be used as dietary supplements.
- In a study comparing popular US livestock guardian dog breeds ("white dogs") to three new European breeds selected for their boldness towards carnivores (Kangal, Karakachan, and Transmontanos), researchers found only subtle behavior differences. They concluded: the individual (dog) is more important than the breed.
- A team in China has created goats that produce a third more cashmere than normal goats. Scientists used a gene-editing technique to disable a gene that limits hair growth in a breed of Cashmere goat.
- Consistent with previous research done with young adults, new research has found that a better night's sleep is achieved when sleeping in wool. The superior night's sleep is attributed to wool's superior thermoregulation.
- In an Oklahoma State University study, consumers found goat meat to be palatable, giving it favorable ratings for tenderness, juiciness, and flavor. Ratings for beef and pork were only slightly higher.
- After more than 15 years, the Japanese market has re-opened to US lamb and goat. Japan had stopped accepting meat from ruminants in 2003, after BSE (mad cow disease) was discovered in a cow in the US. Last year, Japan's lamb imports reached a record value of US\$168 million.
- Montana researchers blended wool with straw to make erosion blankets. In the plots that received wool blankets, researchers observed 3 to 4 times more growth of perennial grasses as compared to the plots that received traditional erosion blankets (straw + coconut hulls). Low grade wool that is otherwise discarded is suitable for the blankets.
- Goats, sheep, and a donkey were used to manage 16 acres of land on the west side of O'Hare International Airport (in Chicago). The initiative began as a pilot program in 2013 and is now in its 5th year. The 30-animal herd serves as a sustainable means for maintaining green space and safe conditions near the airport.
- A recent American Lamb Board survey revealed a growing interest in lamb. Among the general population, 24% report eating lamb in the last year, up from 20% in 2011. Nearly 7 in 10 (68%) said they had a strong desire to purchase American-raised lamb, considering it a good value, even if it was priced 10-15% more than imported lamb.
- A 14-year study conducted by USDA (in California) showed that trapping coyotes did not reduce predation. Because coyotes are territorial, scientists reason that non-killing "well-behaved" coyotes "protect" livestock from sheep-killing predators.

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Sheep Research @ WMREC (continued from page 1)

because short-scrotum rams lack the thermoregulation required for spermatogenesis, they should not be able to get females pregnant, thus enabling them to be co-mingled with females while grazing.

After weaning and transport from the farm to the research center, the sixty lambs were maintained as a single group on pasture. For 100 days, they grazed mostly annual forages. In addition to grazing, they were supplemented with a concentrate ration (whole barley + soybean meal + minerals) at 2-3 percent of their body weight.

The lambs were weighed bi-weekly and assessed for health. No dewormers or other treatments were administered to the lambs during the duration of the project. At day-102, the lambs were scanned to determine carcass characteristics. At day-105, they were evaluated for fertility traits. They were harvested at day-110. After overnight chilling, their carcasses were measured.

Short-scrotum Lambs Demonstrate Superior Performance

Compared to the wether lambs, the short-scrotum ram lambs had heavier final body weights and higher average daily gain (ADG). There was a tendency for sex to influence rib eye area (REA), as determined by ultrasound. Wether lambs tended to have smaller rib eyes compared to ram and short-scrotum lambs. However, when REA was adjusted to a common weight (100 lbs.), there was no difference between the sexes. Sex did not influence other ultrasonic measurements: backfat (BF) and loin depth.

Actual carcass measurements showed wethers to be fatter, having greater BF, thus yield grade. Ram lambs produced the leanest carcasses. The short-scrotum lambs were intermediate. There was a tendency for sex to influence hot carcass weight, with short-scrotum lambs tending to be heavier.

Sex did not affect dressing percentage, body wall thickness, rib eye area (actual or adjusted to a common weight), percent kidney and heart fat (KH), leg conformation score (LC), or percent boneless closely trimmed retail cuts (BCTRC). There was strong correlation between ultrasonic and actual carcass measurements, except for REA in short scrotum lambs

Compared to wether lambs, short-scrotum lambs showed superior growth and produced leaner carcasses.

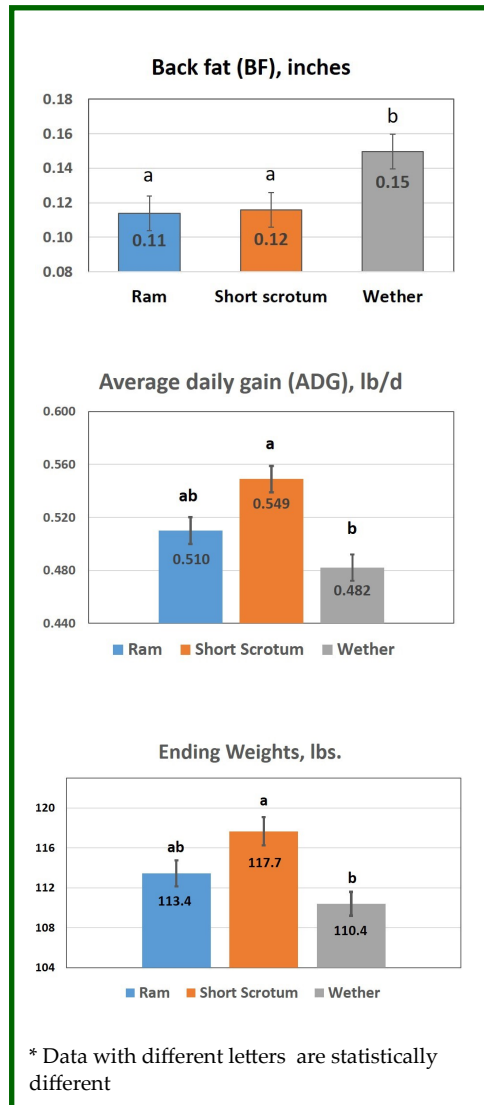
Short-scrotum lambs were sterile

Libido (mating desire) was measured by giving each lamb five minutes to interact with two ewes that were in heat (estrus). Mating behaviors (sniffs, kicks, flehman's response, false mounts, and services) were recorded. Semen was collected from six random ram and short-scrotum lambs. Ejaculates were measured and evaluated for semen quality.

Libido was similar in ram and short-scrotum rams, but ram lambs had more services. However, time to service was not different between ram and short scrotum lambs. As expected, the wethers lacked libido. Ejaculate volumes were similar between ram and short-scrotum lambs, but the ejaculates from the short scrotum lambs were essentially devoid of sperm. The ram lambs had good semen quality.

At slaughter, testicles (pairs) were collected from five random ram and short-scrotum ram lambs. The testicles were dissected. The short-scrotum rams had significantly smaller testes than the ram lambs. The weight of epididymides was also smaller in the short-scrotum rams. Histological examination of the tissues revealed no mature sperm in the testes or epididymides of the short-scrotum lambs.

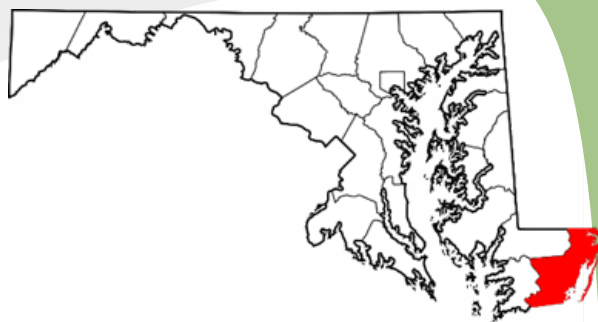
While the short-scrotum rams demonstrated similar mating behavior as the entire ram lambs, they were determined to be sterile (infertile).



New Small Ruminant Educator In Worcester County

Maegan Perdue is the “new” Agriculture Agent Associate in Worcester County (Maryland). She started in that position in February 2018. Prior to accepting this position, she was a Nutrient Management Advisor for the University of Maryland Extension in Somerset County.

Maegan grew up on a small livestock farm in Salisbury, Maryland. She was a member of the Wicomico County 4-H Livestock Club and exhibited sheep and goats in the local county fair. She received her degree in Agriculture from the University of Maryland Eastern Shore.



Maegan Perdue (R)

She has been the 4-H leader for the Somerset 4-H Veterinary Science Club since 2011. Many of her 4-Hers have competed at the State 4-H Livestock Skillathon and the Junior Sheep and Goat Skillathon.

At home, Maegan still raises a variety of livestock including hair sheep and dairy goats. In her new position, she will be focusing on small ruminant production, pastures, and backyard poultry.

You can reach Maegan at (410) 632-1972 or mperdue@umd.edu.

Goat 911



University of Maryland Extension (Lower Shore) is hosting a Goat 911 workshop on November 10 at Farmers and Planters Too in Salisbury, Maryland. This workshop will run from 10 am to 12 pm. It will focus on recognizing the signs of a sick goat, supplies that can be kept on hand for minor illnesses and injuries, recognizing common illnesses that can become life-threatening and when to call a veterinarian. Register online at <https://goat911.eventbrite.com>.

Additional dates and locations will be added in Princess Anne and Berlin. A webinar will be scheduled for December or January. For more information, contact Maegan Perdue at 410-632-1972 or mperdue@umd.edu

The Navy Peacoat: Voice Your Opinion

The wool peacoat has long been a part of the Navy uniform, and is not just an symbol of the strong, rugged sailor, but has also become a timeless fashion statement and pop icon. But the peacoat is now in danger of extinction, to be replaced by a synthetic Cold Weather Parka.

The transition to the synthetic parka will impact small businesses at the heart of the nation’s textile industrial base. Companies across the continental U.S. could see lost revenue and lost jobs if the peacoat is retired.

Time is running out to save the iconic Navy peacoat. Soon, the peacoat will become an optional component of enlisted sailors’ seabags, replaced by the synthetic Cold Weather Parka as the mandatory outerwear.

To learn more and voice your opinion, go to savethenavypeacoat.com.



2019 Lambing & Kidding School

A Lambing & Kidding School will be held Saturday, January 19, 2019, 9:00 a.m. to 4:00 p.m., at the Howard County Fairgrounds in West Friendship, Maryland. The school has been going on for many years. It was originally a biennial event, last held in 2015 in Harford County. It has been held throughout the state of Maryland, and is returning to its first location (Howard County) in 2019.



Dr. Kevin Pelzer
(photo courtesy of VA Tech)

The main speaker will be Dr. Kevin Pelzer. Dr. Pelzer is a Production Medicine Management Specialist in the Department of Large Animal Clinical Sciences at the Virginia-Maryland Regional College of Veterinary Medicine. He received his veterinary degree from Tuskegee University. Dr. Pelzer was the main speaker at the first Lambing & Kidding School. He is passionate about teaching.

Other speakers will include Dr. Kwame Matthews, Small Ruminant Specialist at Delaware State University; Dr. Angela Black, Clinical Veterinarian at the University of Maryland (College Park); Maegan Perdue, Agent Associate (agriculture), University of Maryland Extension (Worcester County); and Susan Schoenian, Sheep & Goat Specialist University of Maryland Extension.

The youth program will be mostly hands-on. It will be taught by University of Maryland Extension youth educators: Chris Anderson, Youth Development Specialist (Animal Science) and Ashley Travis, 4-H Educator (Washington County). The youth program is being geared towards intermediate and senior 4-H youth (ages 11-18).



Participation is limited to 30.

The registration fee is \$60 for adults and \$45 for youth (8-18). There are additional fees (~10%) for paying online. The registration fee includes resource materials on a flash drive. Morning refreshments and lunch are included. The deadline for pre-registration deadline in January 9.

To register online, go to
<https://2018LKSchool.eventbrite.com>.

Instead of paying online (and paying a transaction fee), the registration fee (payable to the University of Maryland) can be sent to Pam Thomas at the Western Maryland Research & Education Center, 18330 Keedysville Road, Keedysville, MD 21756. Please include your contact information (name, address, email and telephone number) with your check or a completed registration form.

A program brochure, with registration form, can be downloaded from the registration link above.

Test Your Knowledge: Is the following statement true or false
Inadequate thiamine levels are the only cause of PEM in Goats and sheep.

False, see article on page 9

UME Small Ruminant Program on Instagram

The University of Maryland Small Ruminant Extension Program is now on Instagram. Instagram is a mobile, desktop, and Internet-based photo-sharing application and service that allows users to share pictures and videos either publicly or privately. Ninety percent of the 1 billion (plus) Instagram users are under the age of 35. Instagram is a great way to share pictures of your farm.

<https://www.instagram.com/umesheepgoat/>



Instagram

“Polio” in Small Ruminants

by Richard Ehrhardt, Ph.D.
Michigan State University

Polioencephalomalacia (PEM) is also known as cerebrocortical necrosis (CCN) and is a relatively common nutritional disorder in sheep and goats. A common name for this disease in sheep and goats is “polio”; however, it has absolutely no relationship with the infectious viral disease found in humans (poliomyelitis). Cases of PEM can be successfully treated if detected early in the disease course, making recognition of early symptoms a critical issue for sheep and goat producers.

Causes of PEM

The most common cause of PEM is thiamine deficiency. Thiamine is a B vitamin (vitamin B1) that plays a critical role in all cells, acting as a cofactor for several key enzymes involved in glucose metabolism. Thiamine is especially important for proper brain function as the brain relies on glucose as its major source of energy. Since the brain controls nearly all bodily functions, adequate thiamine levels in the brain are of critical importance for normal health and well-being. Thiamine is not produced in animal cells but is produced by rumen microbes, which provide the major source of thiamine to adult sheep and goats. Milk-fed lambs and kids must get thiamine preformed from their diet to meet requirements. But then as they transition to becoming ruminants, they rely on their rumen microbes to synthesize thiamine as their thiamine source. The incidence of polio tends to be higher in lambs and kids during the period when they transition to becoming full ruminants.



(photos courtesy of Richard Ehrhardt)

Inadequate thiamine levels are not the only cause of PEM in sheep and goats, but it is responsible for the vast majority of cases observed. Another cause of PEM documented much better in cattle is excessive sulfur intake from sources including water, feed ingredients and forage. Elevated dietary sources of sulfur in sheep and goat diets include by-product feeds of the ethanol industry such as wet or dry distiller’s grains with solubles. The sulfur content of these feeds may vary according to the processing plant or even the batch, as much of the additional sulfur content in these by products results from addition of acidifying agents such as sulfuric acid during the production process. The usage of these sulfur-rich products varies across ethanol plants, so blanket statements regarding ethanol by-product feeds as being high in sulfur cannot be made. Sheep and goats also consume cruciferous or brassica forages such as turnips, rape, mustard and oil seed meals; products which can be high in sulfur as well.

PEM can also be triggered by amprolium therapy for coccidiosis. Amprolium effectively competes with thiamine for uptake into the brain which therefore can induce PEM. Therefore, animals on amprolium therapy should be watched carefully for polio. Induction of PEM with amprolium is uncommon but not rare.

Symptoms of PEM

Thiamine deficiency and/or high sulfur levels within the brain cause destruction of neurons and swelling of the brain which can be diagnosed by histological examination of brain tissue. Therefore, PEM symptoms are manifest as neurological, with early symptoms being partial to complete blindness with the head held erect.

(Continued on page 10)

“Polio” in Small Ruminants (continued from page 9)

This may also be associated with unilateral (uneven) ear droop and/or unusual/exaggerated gait. It is common for the pupils to be dilated and for the eyes to tear. PEM affects animals of all ages but is most common in young lambs and kids transitioning from a milk to solid diet, and especially so in those fed a high-grain diet. PEM is also found in adult small ruminants of either sex at any age but more commonly associated with changes in diet (change in the plane of nutrition, pasture type, pasture to forage feeding, forage feeding to grain addition, etc.). PEM symptoms are similar regardless of age. Early blindness symptoms lead within hours to a day to loss of body control, inability to stand, and seizures. In more advanced states, animals commonly arch their heads back as far as possible. PEM symptoms may present itself similarly to listeriosis and even ketosis. However, thiamine therapy is relatively benign, so it is best to treat with thiamine as a precaution.

Treatment of PEM

Many cases of PEM respond to prompt administration of thiamine (minimum dose of 10 mg/kg bodyweight). Effective but slightly more risky therapy would be to inject the first dose slowly intravenously (IV) followed by another dose provided intramuscularly (IM). Animals occasionally respond rapidly to the initial dose, although slow recovery to standing may take up to 5 days with full recovery evident after 2-3 weeks. The recommended dosage should be given twice per day for 2 days followed by once daily injection for 5 days. Vitamin B complex formulations can be purchased containing thiamine, but it is highly recommended that producers have a bottle of concentrated thiamine on hand (250 to 500 mg/mL) at all times. Concentrated formulations of thiamine are a prescription product, so be sure to work with your veterinarian on any PEM treatment program. Additional therapeutic value may be found by administration of anti-inflammatory drugs to reduce brain inflammation along with thiamine administration. Consult your veterinarian for information on the safe and effective use of anti-inflammatory drugs.

Animals with PEM may take several days to stand on their own, so it is important isolate all cases and provide supportive care to encourage water and feed consumption (provide both grain and forage free choice to encourage standing and feed consumption). Animals that have been down for a few days may require a little assistance and retraining to get them standing. In cases that are more advanced, thiamine therapy may not be able to overcome brain trauma that has occurred and euthanasia may be indicated.

Prevention of PEM

Most cases of PEM are isolated and sporadic in nature and are associated with changes in feed of some sort. Therefore, it is difficult to develop an effective prevention program for these cases, although making gradual dietary transitions will certainly reduce the incidence of PEM along with many other health concerns. In circumstances when PEM becomes common such as in feedlot lambs that are in transition to a high or exclusively grain diet, the risk may be reduced by providing adequate dietary fiber. Lamb/kid finishing diets that are low in fiber may need to be adjusted to raise dietary neutral detergent fiber (NDF) above 15%. Another consideration in situations of high PEM incidence would be to make sure that part or all this NDF is provided in a physical form that encourages rumination, such as forage with a chop length greater than 3 inches. Addition of feed grade thiamine can also be made to the diet, but this therapy can be expensive and its efficacy has not been thoroughly evaluated in growing lambs or kids.

Summary

PEM is a common nutritional disorder in sheep and goats that commonly leads to mortality without intervention. As with many disorders and disease conditions, early detection is key for successful treatment. Producers should work with their DVM to specify a treatment plan and to be sure to have a bottle of concentrated thiamine on hand at all times. Most PEM cases are isolated and sporadic in nature; however, a higher incidence may occur in lamb/kids on finishing diets. In these cases, the first action should be to increase dietary fiber as a preventative measure.

Article and image reprinted with permission of author.

Test Your Knowledge:

How much should a ewe lamb or doe kid weigh before being bred for the first time?

They should achieve 60 to 70 percent of their mature weight. See page 2

Upcoming Events



November 10

Goat 911 (will be repeated at other locations)
Farmers and Planters Too, Salisbury, MD
Info: Maegan Perdue at mperdue@umd.edu or
(410) 632-1972
Registration link: <https://goat911.eventbrite.com>

December 1

Virginia Bred Ewe Sale
Augusta Expo, Staunton, VA
Info: www.vasheeproducers.com

December 8

**Delmarva Small Ruminant Conference:
All Worms All Day 2018**
Western Maryland Research & Education Center,
Keedysville, MD
Info: Susan Schoenian at sschoen@umd.edu or
(301) 432-2767 x343
Registration link:
<https://allwormsallday.eventbrite.com>

January 19, 2019

Lambing & Kidding School
Howard County Fairgrounds, West Friendship, MD
Info: Susan Schoenian at sschoen@umd.edu or
301-432-2767 x343
Registration link: <https://2019lkschool.eventbrite.com>

January 23-26, 2019

American Sheep Industry Association Convention
New Orleans, LA
Info: www.sheepusa.org

February 8-9, 2019

Maryland Sheep Shearing School (beginners)
Dale Lehman's Farm, 8202 Kavanglen Lane,
Fairplay MD
Info: mdsheepshearingschool@gmail.com

More Information On Sheep & Goats Can Be Accessed

<http://www.sheepandgoat.com/> <http://www.acsrpc.org> or wormx.info <http://mdgoatatest.blogspot.com>
<http://www.sheep101.info/> <https://www.facebook.com/MDSsmall> <http://issuu.com/mdsheepgoat>
<http://mdsheepgoat.blogspot.com> <https://www.youtube.com/c/MarylandExtensionSmallRuminantProgram>
<https://www.instagram.com/umesheepgoat/>

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