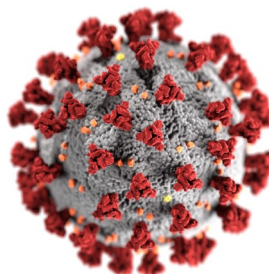




COVID-19: A Different World (at least for now)

By Susan Schoenian

The arrival of Covid-19 has changed all of our lives and continues to be a rapidly evolving situation. While our health and that of our loved ones is of primary importance, the care of our livestock and sustainability of our small ruminant enterprises is also important. Everyone needs to be prepared for how Covid-19 might impact their sheep/goat enterprises.



Volatile Markets

It goes without saying that Covid-19 is affecting demand, markets, and prices. Some sale barns have closed. Others are limiting attendance to buyers. Voluntary price reporting by USDA has been suspended at some auction barns, including New Holland (PA). Nationally, issues of confidentiality are preventing price reporting of lamb carcasses (meat). It is hard to have a free, open, and functioning (competitive) market without accurate price reporting.

The majority of American lamb is sold to food service industries, so the closing of restaurants is having a devastating effect on the national lamb industry. The nation's second largest lamb company (Mountain States Rosen) has already filed for bankruptcy. The American Sheep Industry Association (ASI) has requested USDA step up its purchased of lamb products.

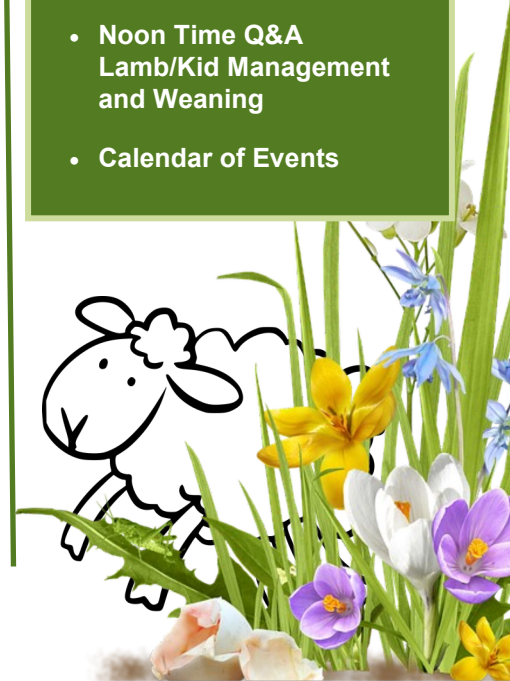
Easter/Passover (April 8-19) is the single largest lamb consumption period of the year. Since the onset of Covid-19, auction prices for lambs have declined more than 40 percent. Heavy lambs have been particularly hard hit. The number of lambs being processed has been reduced drastically. Increasingly, meat processing plants are suspending operations, due to positive cases of Covid-19 and worker fears.

As of April 1, wool prices are 43% lower than a year ago. Globally, wool prices are 26% lower. Lamb pelts continue to be a cost of production, rather than an income source, though their downward spiral began long before Covid-19.

Markets in the East may be a little better insulated from the disruptions caused by Covid-19, as our animals are processed in smaller plants, many are processed on-farm (by ethnic customers), and most end up in non-traditional mar-

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An In-Depth Look at Ivermectin

By Susan Schoenian

Recently, several media outlets reported the success of an in vitro study conducted in Australia regarding the antiviral effects of ivermectin on the virus that causes Covid-19. An in vitro study is performed outside the living organism, such as in a petri dish; whereas, an in vivo study is conducted in a living organism. A treatment may work in vitro but not in vivo or it may work in both or neither.

Ivermectin has shown in vitro activity against the zika virus, but its effect was not repeatable in live animal studies (with mice). Ivermectin has shown antiviral activity against pseudorabies (a viral swine disease) both in vitro and in vivo. There is hope that ivermectin may have an in vivo effect against the virus that causes Covid-19, but there is no PROOF.

After the story about ivermectin broke on social media, some farm stores removed ivermectin from their shelves, in fear of people buying it to self-medicate. Hopefully, by the time this newsletter is received, shelves will have been restocked with ivermectin (and related drugs) and people will have regained their senses.

Ivermectin: the “wonder” drug

Ivermectin was first discovered in 1975. It was cultured from the soil. It became commercially available in 1981 and soon became the top-selling veterinary drug in the world, earning the title of “wonder drug.” Besides being a dewormer for animals, ivermectin has been used to successfully treat various diseases in humans, specifically those caused by roundworms (river blindness) or insects (malaria). However, the formulations used for humans are different from those used in animals. What is safe in animals may not be safe in people.

Ivermectin for small ruminants

Ivermectin has been used to deworm small ruminants for decades. Unfortunately, many of the worms infecting small ruminants have developed relatively high levels of resistance to ivermectin (and other avermectins). This is particularly true on farms in the Mid-Atlantic and southern states, where significant testing has occurred. What this means is that ivermectin (Ivomec®) is seldom effective as the sole treatment for worms (in small ruminants). The expectations would be similar for doramectin (Dectomax®) and eprinomectin (Eprinex®), as they are in the same class (macrocyclic lactones) and sub-class of dewormers (avermectins) as ivermectin.

Ivermectin is generally not included in combination treatment protocols (for small ruminants), since moxidectin (Cydectin®) is the more potent drug in the class; therefore, the better choice. Moxidectin is in the sub-group called milbemycins. However, ivermectin (and other avermectins) is more effective against external parasites (than moxidectin). Specifically, ivermectin is labeled for the removal of nasal bots in sheep. Though not labeled, ivermectin also has efficacy against other ectoparasites, such as ticks, lice, mites, and fleas. Use of ivermectin (and related drugs) to control external parasites (other than nasal bots in sheep) is extra-label and should be used under the supervision of a veterinarian.

Ivermectin is sometimes routinely given to camelids (llamas and alpacas; Rx) to prevent meningeal worm infection, although it is not believed to be able to cross the blood-brain barrier (thus, treat meningeal worm). In fact, a study conducted at Cornell University showed no benefit to including ivermectin (injectable) in treatment protocols for meningeal worm (in sheep/goats). Fenbendazole (SafeGuard®) is the drug of choice for treating meningeal worm.



Sheep Down 1%; Goats up 1%

USDA NASS released its annual Sheep & Goat Report on January 31, 2020. The sheep and lamb inventory declined 1% compared to a year ago. There are 5.1 million sheep in the US. The states with the most sheep are Texas, California, and Colorado. The largest sheep inventory ever recorded was 56 million head in 1942. There is no single reason for the long downward trend in sheep production in the US.

The 2019 lamb crop of 3.23 million lambs was slightly less than 2018. The national average lambing rate was 108 lambs per 100 ewes, 1% higher than 2018. Iowa had the highest lambing rate in 2019: 144 percent. Compared to 2018, wool production declined 2 percent. 3.32 million sheep and lambs were shorn. The average fleece weight was 7.2 lbs. The average wool price was \$1.89 per pound (raw).

The US goat inventory increased 1% compared to a year ago. According to the report, there are 2.66 million goats in the US. The 2019 kid crop of 1.64 million head was up slightly from 2018. Almost 79 percent of US goats are categorized as “meat or other.” However, dairy goats are the fastest growing segment of the US livestock industry, growing 61% between 2007 and 2017. Texas has the most meat and fiber goats, whereas Wisconsin has the most dairy goats.

Source: Annual Sheep & Goat Report. USDA NASS



Connecting Producers With Online Resources

Prairie View A&M University: Information Databases and Mobile Vet App

Prairie View A&M University is one of two land grant universities in Texas. It is a public historically black university that was founded in 1876. It is home to the International Goat Research Center.



Prairie View has developed several online resources for goat producers. From their web site (vetlink.pvamu.edu), you can search symptoms and diseases of goats. Select topic from the menu bar. There are also disease videos.

Dr. Paul Johnson, a researcher at Prairie View has received over \$300,000 in grants to develop a mobile app for goat producers. The app has a database of animal management issues, as well as an interface for communicating with veterinarians. The app is called VetLink. It has been compared to WebMD, except it is for goats. The app can be downloaded for free from the iTunes store.

Langston University: Online Certification and Nutrient Calculators

Langston University is a public university in Oklahoma. Founded in 1897, it is the only historically black college in the state. It is the home to the E. (Kika) de la Garza American Institute for Goat Research. On its web site (luresext.edu/training), Langston offers free online certification courses for meat and dairy goat producers. They have also developed nutrient requirement calculators that can be used to balance rations for all types of goats.

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COVID-19: A Different World (continued from page 1)

kets. Local food may be one of the few “winners” in this horrible pandemic. Goat prices seem to be holding up better than lamb prices, since few goats are sold into food service and most are slaughtered in small plants or “off the grid.”

Markets are likely to remain volatile for the foreseeable future.

Supply Chains

Agriculture is considered to be an essential industry, but producers need to be prepared for disruptions or slowdowns in supply chains. It is important not to wait until the last minute to secure feeds sources and get supplies. It is possible that some products, especially animal health products, will be in short supply. Veterinary clinics are staying open but may have reduced hours and different operating protocols. It may be difficult for some producers to access veterinary care at all during these times.



Events

4-H families are uncertain as to whether they should purchase market lambs and goats for summertime fairs and jackpot shows. At this point, it is not known if stay-at-home and social distancing requirements will be lifted in time for summer and fall fairs and festivals. The Maryland Sheep & Wool Festival has been canceled for the first time in its 47-year history. Instead there will be a virtual online festival at <https://www.facebook.com/groups/mswfOnlineCommunity/>, The Junior Sheep & Goat Skillathon, held in conjunction with the festival, has been canceled. An alternative event is being considered.

Education

While universities, Extension Offices, and research centers have been closed temporarily, extension agents and specialists are teleworking and usually available via phone or e-mail. Some extension professionals have been designated as “essential” workers and are able to make farm visits, if necessary and according to social distancing protocols. Extension programs have moved online: social media, videos, virtual field days and pasture walks, and webinars. Be sure to take advantage of these expanded online learning opportunities.

Financial Assistance

The CARES Act includes \$49 billion to support US agribusiness, farmers, and ranchers impacted by Covid-19. Most of the money will go towards the major commodities or nutrition programs for low income families. Approximately 19 percent (or \$9.5 billion) is designated for specialty crop producers, livestock producers, and producers that supply local food systems. The US Secretary of Agriculture has broad discretion on how these funds will be divided up. The American Sheep Industry is asking for at least \$350 million in assistance.

The American Farmland Trust (farmland.org) has launched a Farmer’s Relief Fund that will award farmers with cash grants up to \$1000 each to help them deal with the market disruptions caused by the coronavirus. The Food Animal Concerns Trust (foodanimalconcernstrust.org) is accepting applications for mini-grants up to \$500 to help livestock and poultry producers transition to online or alternative marketing strategies.

MARBIDCO (marbidco.org) is offering low interest loans to Maryland farmers impacted by Covid-19. Loan applications are due May 31 and may be used for working capital and/or equipment purchases. Farmers are eligible to apply for the federal Paycheck Protection Program (sba.gov) to help cover their payroll expenses, but there is concern that this money has already dried up. Unfortunately, agricultural enterprises are not eligible for the Small Business Administration disaster loans.

(continued on page 5)

COVID-19: A Different World (continued from page 4)

If you get sick

Hopefully by the time this newsletter has been read, the number of Covid-19 cases will have leveled off. While the urban population seems to be more vulnerable, no one is immune to this terrible disease. You need to have a plan in place if you or your family members get sick. Who will do the day-to-day chores? Make a list of chores, if someone has to care for your animals while you are sick.

Stay safe and healthy

It goes without saying that everyone should practice social distancing and good hygiene, according to CDC/government requirements/recommendations. Wash your hands regularly (with soap and warm water) and disinfect high-touch surfaces. Stay home. Enjoy your farm. Play with your lambs/kids.

Covid-19 resources

American Sheep Industry Association
<https://sheepusa.org/covid-19-resources>

University of Maryland
<https://umd.edu/virusinfo>
<https://extension.umd.edu/learn/covid-19-resources>

Protect yourself and others from getting sick

Wash your hands



- after coughing or sneezing
- when caring for the sick
- before, during and after you prepare food
- before eating
- after toilet use
- when hands are visibly dirty
- after handling animals or animal waste



Connecting Producers With Online Resources

(continued from page 3)

ACSRPC: fact sheet series



The American Consortium for Small Ruminant Parasite Control (ACSRPC) was formed in 2003 in response to the critical state of anthelmintic resistance. Consortium members include veterinarian parasitologists, animal scientists and extension specialists.

The consortium is in the process of developing a fact sheet series entitled "Best Management Practices for Controlling Internal Parasites in Small Ruminants." All the fact sheets are written and reviewed by members of the consortium, including at least one veterinarian. So far, 11 fact sheets have been published (in PDF format) to the web site (www.wormx.info/bmps).

The web site also has an image gallery and video library. Since August 2013, consortium members have written 59 "Timely Topics" articles pertaining to internal parasite control in small ruminants. *WORMinfo* is the monthly newsletter of the American Consortium for Small Ruminant Parasite Control. It is available at www.wormx.info/worminfo.

University of Maryland Presentation Videos

Many of the presentations from the 2019 Lambing & Kidding School and Small Ruminant Pasture, Grazing, & Browsing Conference were recorded and converted to YouTube videos. Links to the videos are available on the Maryland Small Ruminant Page (www.sheepandgoat.com/videolinks). The page containing the video links also includes video links to previous webinar short courses (2011-2016).

Pasture, Grazing, & Browsing Conference

Healthy soil as a foundation for good pasture management (Maegan Perdue)

Setting up a grazing system (Matt Morris)

What do I plant? (Amanda Grev)

Lambing & Kidding School

Lamb and kid necropsy (graphic) (Kevin Pelzer)

Managing the periparturient egg rise (Kwame Matthews)

Preparation for parturition; getting ready for the big day (Maegan Perdue)

www.sheepandgoat.com/videolinks



Dr. Amanda Grev

Special thanks to Peter Coffey for recording and editing the presentations. Peter is the Agricultural Extension Agent in Carroll County, Maryland. The aforementioned presentation videos were uploaded to Carroll County's Youtube channel, which has other videos pertaining to livestock production. Search Carroll County Extension YouTube to find the channel.

Using Whole Grain to Increase the Profitability Of Pasture-Raised Lamb

There are numerous advantages to pasture-raised lamb (or goat), but pasture-raised livestock often face nutritional and disease challenges. The Maryland Grain Producers Utilization Board has funded a University of Maryland study that will compare the health, performance, and carcass characteristics of pasture-raised lambs that graze only vs. those that graze, plus receive a daily supplement of whole grain (energy; TDN).

In early June, approximately 80 Katahdin lambs will begin grazing at the University of Maryland's Western Maryland Research & Education Center in Keedysville. Electric netting will be used to sub-divide pastures into smaller areas for rotational grazing. The 10-acre pasture system is planted in a mixture of grazing tolerant orchardgrass, Mountain Meadow brome, tetraploid perennial ryegrass, Freedom red clover, ladino clover, and forage chicory. There is an additional 2.5-acre silvopasture area that is mostly MaxQ™ tall fescue.

The lambs will be weighed bi-weekly and assessed for health. Fecal samples will be collected to assess parasite loads. At the end of the grazing period, at least fifteen lambs from each group will be harvested to collect carcass data. A sample of the longissimus dorsi muscle will be used to determine fatty acid profile of the meat from the two groups.

Visit the WMREC sheep research blog to learn more: <https://wmrecresearch.blogspot.com>

Farm(s) Wanted For On-Farm Study To Evaluate Combination Deworming Treatments

Farms (preferably goat) are wanted to evaluate the efficacy of a combination deworming treatment. Approximately 100 animals are needed. The animals would be split into four groups. One group (n=25) would serve as a “control” group and not receive any deworming treatment. A second group (n=25) would be treated with a commercial dewormer (either albendazole or ivermectin). The third group (n=25) would be treated with copper oxide wire particles (COWP). A 4th group (n=25) would receive the combination treatment: COWP + dewormer.



Fecal samples would be collected at the time of treatment and 10 to 14 days after. A handling system is a must. All goats would be weighed prior to treatment to ensure a proper dosage of dewormer. Any animal with an initial fecal egg count (FEC) of less than 250 EPG would be excluded from the study. A sufficient parasite challenge is necessary to compare treatment options; ideally, a group average of 500 epg or more. FEC reductions will be calculated to determine the efficacy of the different treatment options. A pooled sample will be analyzed for larvae ID. Ideally, resistance status would be known ahead of time.

If you'd like to learn more or are interested in hosting a study (this year or next), contact Susan Schoenian at (301) 432-2767 x343 or sschoen@umd.edu.

National Lamb Check-Off Yields Returns

Through an extensive Return on Investment Analysis, the American Lamb Board (ALB) learned that the American Lamb Checkoff Program added 2.4 to 2.7% to the annual value of retail lamb, due to increased consumption of lamb and a modest retail price increase. In short, each \$1 invested in the Checkoff Program yielded a return of \$14.20.



ALB's FY2019 budget of \$2,47,877 devoted \$1,615,681 for promotion, \$420,289 to communication, \$187,119 to research, and \$255,688 toward administration and USDA oversight. The complete report, which covers the fiscal year October 1, 2018, through September 30, 2019, can be downloaded at www.LambResourceCenter.com.

Are you submitting the check-off?

All sheep or lambs of any age, including ewes and rams, are subject to the national lamb checkoff assessment. The live weight assessment of \$0.007 per pound is collected at sale barns and deducted from sale proceeds. At the time of slaughter, an additional assessment of \$0.42 per head is due. This is usually paid by the processor (first handler).

Because direct marketers still own their lambs at the time of slaughter, they are required to remit both assessments to the American Lamb Board. Direct marketers who sell live animals (only) are responsible for sending the live assessment to the lamb board. This includes 4-H/FFA members selling their lambs at county or state fairs, as well producers who sell breeding stock and/or club lambs.

Do Livestock Guardian Dogs Pay?

Predation is a major threat to the economic viability of the US sheep industry and one of the top reasons that people leave the industry. Coyotes and domestic dogs are the primary culprits. Predator control requires on-going efforts and can be costly. Livestock guardian dogs (LGDs) are one of the most common non-lethal methods of predator control. But are they cost effective?

The Hopland Research & Education Center (in California) used station data from 2013 to 2017 to estimate the cost effectiveness of LGDs on a representative commercial sheep operation with 500 breeding ewes. Since research suggests that a LGD can provide protection for approximately 100 ewes in most settings, five LGDs were used in the study. Benefits (reduced lamb and ewe losses) were compared to the costs associated with investing in and maintaining LGDs. The data were analyzed over a 7-year period, as this is considered to be the useful life of a dog.

The researchers estimated that the LGDs reduced lamb losses to coyotes by 43% each year. At an average reproductive rate of 1.12 lambs per ewe, the dogs saved 27 lambs per year. The annual savings from reduced lamb losses was calculated to be \$2,404 (27 lambs x 65 lbs. x \$1.37/lb). Deployment of LGDs was estimated to reduce ewe predation by 25% or 4 ewes per year. Ewes were valued at \$244.75 each. Total annual savings was \$979. Over the 7 year period, the economic benefit of the LGDs was estimated to be \$16,200.

The LGDs were purchased as puppies for \$400 each. It was assumed that young dogs were not effective at reducing predation the first year and only 50% effective the second year. Since 45% of livestock guardian dogs die or are put down during their useful life, a replacement cost of \$728 was added to the model. Veterinary costs were estimated to be \$210 per dog per year. Food costs averaged \$654 per dog per year. The total costs associated with the five LGDs was \$29,612. Over the 7 year period, costs exceeded estimated benefits by \$13,412. The benefit: cost ratio was only 0.55 (\$1 spent, only \$0.55 returned).

If the dogs were more effective at reducing predation, the benefit: cost ratio would have been better and the

value of reduced predation would have exceeded the cost of the dogs. In fact, past survey data suggests that some dogs eliminate predation entirely. If this had happened, the benefits of reduced predation would have exceeded the cost of the dogs by \$12,154 over the 7-year period, resulting in a benefit: cost ratio of 1.41 (\$1 spent; \$1.41 returned).

The cost-effectiveness of livestock guardian dogs will depend upon many factors, including predator risk, the effectiveness of dogs at reducing/eliminating predation, the labor associated with keeping dogs, and the value of the saved lambs and ewes.



Determining Colostrum Quality

By Sara Beth Routh

North Carolina State University

Colostrum is the first milk produced by an animal after giving birth. After years of raising many species of livestock, I have always followed proper protocol to make sure my expectant mommas received all their needed vaccines at just the right time to ensure their colostrum was packed full of antibodies. Neonates are born without an immune response. Quality colostrum is the only source of antibodies to help fight the diseases they are exposed to.

Methods of measuring colostrum

The old farmers' method of color doesn't necessarily hold true when evaluating colostrum for quality. Testing colostrum is the only way to know the true quality of the first milk the offspring are receiving. There are many methods of testing colostrum, from a Brix to the old school hydrometer. In recent years, research has shown that the hydrometer's results can be skewed by temperature.



Newborns need quality colostrum.

The Brix refractometer currently is the standard for testing colostrum. The Brix comes in a few different forms. The digital is pricey, but extremely easy to use. The optical brix is more wallet-friendly. Both the digital and optical brix allow for accurate results, utilizing a specific gravity scale that measures how much light is able to pass through a liquid. When selecting a brix refractometer make sure the one being purchased has a scale from 0 to at least 35.



Brix refractometer Image by Sara Routh

What exactly is being measured in the colostrum?

Colostrum contains a product called IgG. IgG is the major immunoglobulin class found in ruminant colostrum. Research shows that IgG concentrations vary from animal to animal and will change depending on time of year, disease exposure, amount of colostrum, and even breed. This is why it is important to test animals and store quality colostrum for use when needed.

IgG levels can vary and the difference between good quality and poor quality can mean the difference between failure and success in not only passive transfer of immunity but also the animal's ability to thrive. Colostrum containing 20mg/ml or greater is considered to be good quality for small ruminants. Quality colostrum will yield higher IgG blood serum levels which directly correlate to successful passive transfer of immunity.

Weekly Worm Webinars

Extension specialists from Maryland, Georgia, Delaware, and Virginia are teaming up to present weekly worm webinars. The webinars will be live and held via ZOOM. Each webinar will be presented at noon time on Tuesdays (12 noon EST). The first webinar will be held on April 21. Webinars will continue weekly through June 9.

Presentations will last approximately 30 minutes, with additional time allotted for questions. Questions can be sent ahead of time (to sschoen@umd.edu) or asked in the chat box. All webinar topics will pertain to internal parasites (worms + coccidia). Webinars will be recorded and uploaded to YouTube.

Pre-registration is required. Go to <https://go.umd.edu/worm-webinars>.

April 21

The Periparturient Egg Rise

Susan Schoenian, University of Maryland Extension

April 28

Fecal egg counting primer

Dr. Dahlia O'Brien, Virginia State University

May 5

Public enemy #1: barber pole worm

Dr. Kwame Matthews, Delaware State University

May 12

Grazing away parasites

Dr. Niki Whitley, Fort Valley State University

May 19

The other enemy: coccidiosis

Dr. Kwame Matthews

May 26

Deworming right

Susan Schoenian

June 2

What to do when deworming's not enough

Dr. Niki Whitley

June 9

Breeding worm resistant animals

Dr. Dahlia O'Brien



REGISTER NOW

Online FAMACHA® Certification

Due to Covid-19, some universities are offering online FAMACHA® certification via live webinars. University of Maryland Extension is offering online FAMACHA® certification on Thursday, May 7, 1 to 3:30 pm (via Zoom). Pre-registration is required. Go to <https://go.umd.edu/FAMACHA> to register.

The webinar is free, but FAMACHA® cards will cost \$13 (check payable to University of Maryland). Cards will be mailed to participants, following completion of requirements for certification. It will be necessary to pass a test and demonstrate proficiency in FAMACHA® scoring technique (via submitted video).

Instructors for the course will be Susan Schoenian and Dr. E. Nelson Escobar. Previously, online certification was only available via the University of Rhode Island.

FAMACHA® is system for determining the need to deworm individual sheep, goats, and camelids. It utilizes a color eye chart that estimates the level of anemia in an animal. Anemia (pale mucous membranes) is the primary symptom of barber pole worm (*Haemonchus contortus*) infection. The barber pole worm is the primary parasite in warm, moist climates and/or during periods of summer rain fall.

<https://go.umd.edu/FAMACHA>



Noon Time Q&A: Lamb/Kid Management & Weaning

Small Ruminant Extension Specialists from Delaware, Georgia, Maryland, and Virginia are teaming up to offer another hour-long Noon Time Q&A via ZOOM. The second Q&A will be held Friday, April 24 at 12 noon EST. The topic will be Lamb/Kid Management and Weaning. Panelists will include Dr. Kwame Matthews, Delaware State University; Dr. Dahlia O'Brien, Virginia State University; Susan Schoenian, University of Maryland; and Dr. Niki Whitley, Fort Valley State University.

Pre-registration is required. Go to <https://go.umd.edu/lamb-kid-mgt> to register. Submit questions ahead of time at the time of registration or send them to Susan Schoenian at sschoen@umd.edu. Questions can also be entered into the chat box during the webinar.

The first Q&A webinar was held on April 10. It covered lambing and kidding. Seventy-four people participated. For a copy of Lambing/Kidding Q&As from the webinar, contact Susan at sschoen@umd.edu. Please let us know what other topics you are interested in for future Q&As.

<https://go.umd.edu/lamb-kid-mgt>



Upcoming Events



April 21-June 9

Weekly Worm Webinars
Maryland-Delaware-Georgia-Virginia Extension
Register at <https://go.umd.edu/worm-webinars>

April 24

Friday Noon time Q&A Webinar: Lamb and Kid Management and Weaning
Maryland-Delaware-Georgia-Virginia Extension
Register at <https://go.umd.edu/lamb-kid-mtg>

April 27

Kentucky Worm Talk Webinar (Q&A)
KY Sheep/Goat Development Office and University of Maryland Extension
Register at https://go.umd.edu/KY_Wormtalk

May 2-3

Virtual Online Maryland Sheep & Wool Festival
Go to <https://www.facebook/groups/mswfOnlineCommunity/>

May 7

Online FAMACHA® Certification
University of Maryland Extension
Register at <https://go.umd.edu/FAMACHA>

August 20 (tentative)

Small Ruminant and Pasture Field Day
Washington County Agricultural Education Center & Western Maryland Research & Education Center
Info: Susan Schoenian at sschoen@umd.edu or (301) 432-2767 x343

December 5 (tentative)

Biennial Lambing & Kidding School
Westminster High School, Westminster, Maryland
Info: Susan Schoenian at sschoen@umd.edu or (301) 432-2767 x343

Find more information online

Maryland Small Ruminant Page: <http://www.sheepandgoat.com>

American Consortium for Small Ruminant Parasite Control: <http://www.wormx.org> or acsrpc.info

Lamb research @ WMREC: <http://wmrecresearch.blogspot.com>

Sheep 101 and Beginner's Guide to Raising Sheep: <http://www.sheep101.info> and /201

Facebook: <https://www.facebook.com/MDSmallRuminant>

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

YouTube channel: <https://www.youtube.com/c/MarylandExtensionSmallRuminantProgram>



UNIVERSITY OF MARYLAND EXTENSION

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