



Newsletter of the  
**MARYLAND**  
**SHEEP BREEDERS**  
**ASSOCIATION**

WINTER 2022

# Ziegler named 2021 Shepherd of the Year

MSBA is pleased to name Denise Ziegler as the 2021 MSBA Shepherd of the Year in honor of her past and continuing commitment of time, energy, experience, expertise and overall support.

Denise began her foray into the sheep industry when her daughter was given a complete flock of Montadales from a retiring breeder to raise as a 4-H project. Over time, her family’s flock grew to include not only Montadales, but also Shropshires, Suffolks, and commercial market lambs. She and her husband Fred were active and dedicated members of MSBA for many years.

Ziegler’s own involvement with the industry grew along with the flock, from 4-H parent to volunteer, always willing to step up into leadership roles. She has assisted with both the Carroll County and Maryland State Fair 4-H & FFA sheep shows, and in 2014 took over as the Open Sheep Superintendent for the Maryland State Fair and continues to do an outstanding job of making this an enormously successful show—which continues to attract some of the best breeders from the region.

Denise is also a former secretary of the Maryland Sheep Breeders Association. She serves on the vendor and finance committees



of the Maryland Sheep & Wool Festival, and regularly judges fleeces at the Carroll County 4-H & FFA Fair.

Ziegler has two adult children and lives in New Windsor with her husband.

Image courtesy Leo Tammi, Shamoka Run Farm, Virginia

## In This Issue

- 1 Shepherd of the Year
- 1 New building at MSWF
- 2 President’s message
- 3 Climate change & ruminants
- 4 Coccidia and ‘poor doers’
- 12 April Shepherds’ Market
- 12 Mobile processing unit to hit the road
- 13 Scholarship opportunity
- 13 MIWW winners
- 14 New MSBA directors

With faith that the Omicron variant will be in our rear-view mirror, Maryland Sheep & Wool Festival staff and volunteers are charging ahead with plans for an in-person festival May 7-8.

The Howard County Fairgrounds has completed construction of a new building—the Main Exhibition Hall Annex—which means changes are in store for where things happen at the Festival.



The Fleece Show & Sale will be moving next door to the building that had been used for t-shirt sales, t-shirt sales will be moving to the Bingo Hall, and the competitions that had been held in the Bingo Hall (Skein & Garment, Sheep Photo, Fine Arts, and Sheep Promotion) will be moving to the new building.

The new building will be a “Fiber Exploration Zone,” to include Fiber Arts Demonstrations, Sheep-to-Shawl Competition, Junior Spinning Competition, and Make It With Wool. The Rabbit Barn will be re-purposed as a “Picnic Pavilion” with much-needed seating for festival attendees. —Kris Thorne

## New annex and MSWF plans

### Festival mask protocol

In order to protect all attendees, vendors, and volunteers, especially those most vulnerable, we strongly recommend that everyone age two and older wear a mask while indoors at the Festival. There is also a chance that wearing a mask will be a requirement for admittance to specific indoor locations. So come prepared to wear a mask. The complete policy, including a list of locations where masks are required, will be posted at <https://sheepandwool.org/covid-19-protocols/>. These protocols may relax or become more strict as conditions warrant.



# President's Message

**"Together again, in person"**

**Jeff White is President of MSBA**

We had a full house at our MSBA annual dinner at Dutch's Daughter in October, and had a great time.

Thanks to coordinator Judy Williamson, again we had a great fashion show from the winners and contestants of Maryland's 2021 Make It With Wool competition. Caroline and Preston Clark (junior and preteen winners) were joined by contestant Trennen Latham, modeling the garments they sewed.

Senior winner Lynne Thomas, away at school, was unable to attend, but sent a thank you note to MSBA for supporting the MIWW competition. Lynne also is our 2021 scholarship recipient. Lynne's mom Anita was with us at the dinner. See page 13 for exciting news about her success at the National Make It With Wool competition, in January in San Diego.

Our 2021 shepherd of the year is Denise Ziegler. Denise is superintendent of the open class sheep shows at the Maryland State Fair and has been a longtime volunteer at the Sheep & Wool Festival. We are happy to recognize her for her long service to sheep producers.

At the annual dinner we appointed four new board members. Please welcome Gary Keller, Susan Schoenian, Penny Sica, and Kate Warner.

I am pleasantly surprised at how far some of our members come to attend. Ollie King comes from Doylestown, Pennsylvania, Steve Breeding comes from the Eastern Shore, and our ASI representative, Lisa Weeks, comes from Virginia. I want to thank everyone who volunteers valuable time and talent. You help make this organization successful.

We are on course for an in-person Sheep & Wool festival this May 7 and 8. As our website says,

"Together again... in person." I write this as the omicron COVID wave ripples across Maryland, but it's hard for to believe we won't have reached herd immunity by the time May rolls around. I am so looking forward to being together again.

The 2023 Festival marks a milestone—it will be our 50th! We are already in the planning stages for that anniversary celebration.

You can help!

Do you have a favorite picture or story from the festival, especially from the early years? Please consider sharing them with us. I can be reached at chestnutcreekfarm@gmail.com.

Here's hoping each of you have an easy lambing season and a productive year.

Good shepherding,

—Jeff



Maryland Sheep News is published three times a year by the Maryland Sheep Breeders Association, Inc., and is sent to MSBA members. See back page for membership application.

### Ad Rates

Size	Specs (inches)	Price
Full page	7.5 x 9.5	\$95, \$320/year
Half vert.	3.3 x 9.5	\$60, \$200/year
Half horiz.	7.5 x 4.25	
Third	7.5 x 3	\$45, \$150/year
Quarter	3.3 x 4.25	\$30, \$100/year
Biz card	3.3 x 2	\$15, \$50/year
Classified	230 characters	\$10

Acceptable formats are PDFs, Word docs or jpegs.

#### Issue deadlines for ads and copy:

Winter January 1                      Summer May 12  
Fall September 12

#### Send copy to :

**Martha Polkey, Editor**  
sheep@budiansky.com

#### Send payment to:

Treasurer, MSBA  
1126 Slingluff Lane  
New Windsor, MD 21776



The role of ruminants in climate change was a topic in both national and regional conferences in January, with speakers at the American Sheep Industry Association convention and the Virginia Forage and Grassland Council addressing misinformation on the impact of grazing animals on climate. Presenters laid out the role that ruminants can play in sequestering carbon as they provide necessary protein to the human diet, especially using land unsuited for cultivation. At the VFGC winter conference, author, activist (and former vegan) Nicolette Hahn Niman, author of *Defending Beef*, laid out the case for grazing animals as a necessary part of regenerative agriculture. Alan J. Franzluebbers, USDA Professor of Soil Ecology at North Carolina State University, enumerated the ecosystem services that forages provide.

Below is MSBA Board member Polly Matzinger's report on a talk that Dr. Frank Mitloehner presented at the ASI convention regarding livestock and climate change. Mitloehner is professor in the UC-Davis Department of Animal Science and at the CLEAR Center (Clarity and Leadership for Environmental Awareness and Research). He is also on the United Nations Intergovernmental Panel on Climate Change.

Mitloehner focused on two often-cited claims about livestock and climate change:

- Livestock produce 18% of all anthropogenic greenhouse gases (GHGs) globally.
- Livestock produce more GHGs than transportation.

These statements come from a 2006 United Nations publication titled "Livestock's Long Shadow"—and contain three fundamental errors, Mitloehner stated.

**They used global numbers to represent regional numbers** (in this case, the United States).

• U.S. farm production is highly efficient. For example, American cows produce 23,000 pounds milk/cow/year—more from one cow than 20 cows in India, or 5 cows in Mexico. But the same amount of GHG/cow is produced. A glass of U.S. milk adds much less GHG than does a glass in other countries.

• Most nations don't use fossil fuel transport as much as we do, or use as much energy. So farming is a bigger part of the worldwide picture, with transportation worldwide a much smaller part.

• In the United States, transportation, power production and industry produce 82% of



GHGs. Agriculture emits 9%, of which animal agriculture emits 3.9%; sheep emit only 0.03%.

**They used bad science.** When the United Nations compared agriculture and transportation, they measured them differently.

- For agriculture, they used lifetime carbon assessment, or LCA—that is, everything that goes into a gallon of milk. Breeding, feed, transportation, processing, packaging, refrigeration, etc.
- For transportation: they used only tailpipe emissions, not the construction or maintenance of cars, planes, ships, harbors, airports etc.

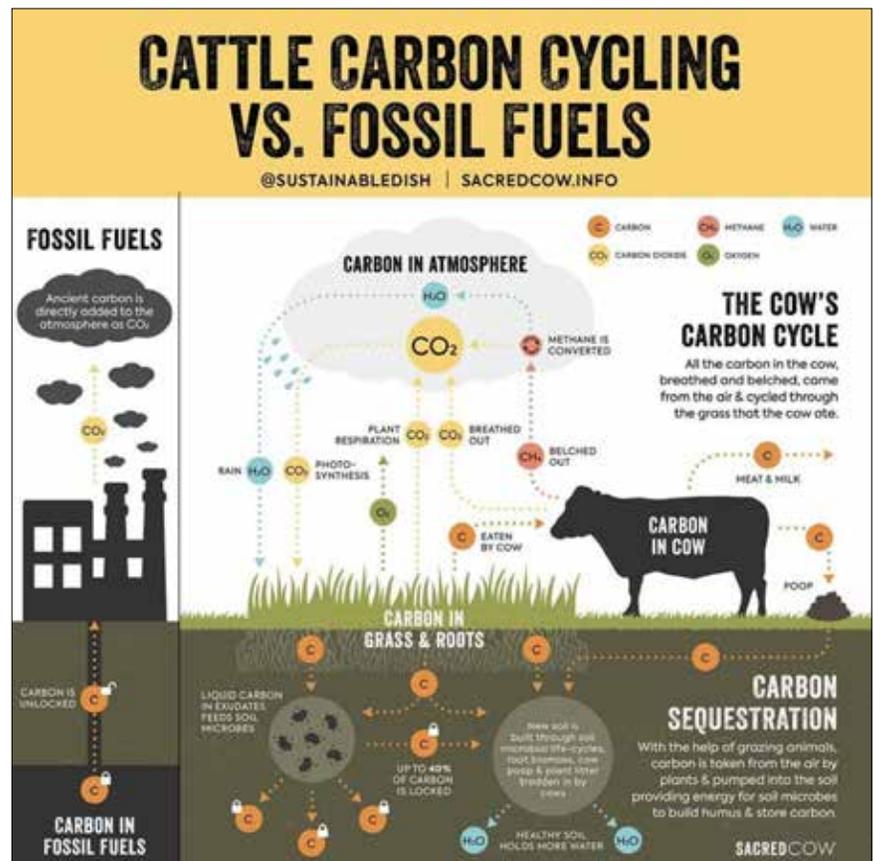
**The study conflated new and recycled greenhouse gases.** The carbon in the fossil fuels that are used by cars, trucks, planes, ships, etc., has been buried in the ground for millions of

**Ruminants:  
part of the  
climate  
change  
solution**

**Polly Matzinger**

*is an MBSA board member*

See *Ruminants & climate*, page 11





Kingdom's National Animal Disease Information Service (NADIS). Coccidiosis in sheep and goats is caused by infestation by coccidia belonging to the genus *Eimeria*; the two pathogenic species are *E. ovinoidalis* and *E. crandallis*. Most coccidia are host-specific, meaning sheep, goats, and chickens do not harbor the same species.

Most shepherds are familiar with clinical (or acute) coccidiosis (image below). It is a major cause of scours in lambs 1 to 4 months of age, although younger lambs and occasionally older sheep may also become affected. The diarrhea that is the most obvious sign of clinical coccidiosis is usually not bloody, although at times it can contain blood or mucus. Apart from scours, clinical coccidiosis is also responsible for poor feed conversion and weight gains or even losses in lambs, reduction in production (meat, wool, or milk), condemnation of carcasses or intestines, reduced fertility (affected females tend to breed later), and even mortality. Affected animals may be susceptible to concurrent diseases, as the damage caused by coccidia to the cells of the intestine is often conducive to bacterial colonization.

Subclinical coccidiosis shares most of these adverse consequences (notably poor growth); it differs in that it is not typically associated with condemnation of carcasses or intestines, and affected animals do not exhibit scouring or mortality. Subclinical and acute coccidiosis differ only in severity. Of the two, subclinical

## "Poor doers": Subclinical and acute coccidiosis in lambs

Lynn Roberts  
is an MBSA board member

Ever wonder why lambs born at the later part of the lambing cycle often grow much more slowly than those born earlier—despite great FAMACHA scores and the absence of other signs (such as scours) or parasites? Subclinical coccidiosis may be to blame. A December 2020 webinar presented by Dr. Berit Bangoura, DVM, of the University of Wyoming and Wyoming State Veterinary Laboratory, guides producers to the best management and therapeutic strategies for controlling this tenacious parasitic infection.

### What is coccidiosis?

Coccidia are single-celled protozoa that infest the intestinal system of host animals of many species. They are found in all climates, and in all types of flock management, although flocks raised under conditions of intensive farming (whether indoors or out) are at highest risk. Most species of coccidia are harmless; indeed, a few may even be beneficial, according to the United

### In a nutshell: Important things to know about coccidiosis

- Coccidia are a one-celled internal parasite of many species—and most parasitize just one species (sheep, or goats, or poultry). Some may be beneficial; some are harmless; some are harmful.
- Sheep develop resistance to infections as they mature, but will still harbor the parasite. Lambs are most susceptible to acute illness.
- Coccidia burrow into intestinal walls, and their later emergence from the lining damages the intestines' ability to take up nutrients.
- Severe infections can cause slow growth and permanent damage to the intestines—even in lambs that have subclinical cases. Lambs born in the latter portion of the lambing period are more likely to be adversely affected, because coccidia numbers in the environment then are likely to be higher.
- Control of coccidiosis begins with good management—good farm hygiene, good nutrition, low stress, good pasture management. Timing is important.
- Coccidiostats arrest the growth of coccidia; coccidiocidal drugs kill the parasites. As with other parasites, excessive and inappropriate use can allow coccidia to develop resistance to the drugs we have.
- It's no longer recommended to administer drugs for prevention, but to treat after infection and before infected lambs shed oocysts, and then to intervene if and when clinical signs (diarrhea, etc.) are seen. Weekly or bi-weekly fecal testing, while it may seem expensive initially, will save on treatment costs and result in higher returns on marketed lambs, and overall flock health.
- Consulting your veterinarian on treatment dosages is important, because labeled dosages for other species are inadequate for sheep. Those extra-label uses require a veterinarian-client-patient relationship.
- A few drugs not labeled for sheep can be prescribed by your veterinarian.
- Alternative treatments (to maintain organic standards) are limited, but sericea lespedeza (in pasture or fed as hay, silage, or pellets), also is useful in controlling barberpole worms.



coccidiosis is the more common, according to Maryland Cooperative Extension small ruminant specialist Susan Schoenian. Because subclinical coccidiosis is a silent disease that can dramatically limit growth of lambs, it merits closer attention. Its hidden effects can be prolonged or lifelong. Coccidiosis (both subclinical and acute) ranks among the most economically significant diseases affecting sheep. Subclinical coccidiosis if anything represents the costlier of the two, Schoenian says.

### Life cycle of coccidia

Coccidia are ubiquitous in sheep; according to Bangoura, the objective should not be to eliminate them, but rather to control and to manage them in order to minimize the potential for damage to the flock.

The organism is very hardy in the environment (capable of surviving moderate heat, freezing, and drying). It can be killed by sunlight or by drying, or by extreme cold—conditions more often encountered on pasture than in enclosed housing. Nevertheless, they are quite capable of overwintering on pastures, albeit typically at low levels. Adult sheep are generally resistant to coccidiosis, although they typically harbor modest levels of coccidia, providing a source of infection that is essentially impossible to eradicate.

The life cycle of coccidia begins when oocysts (eggs) are shed in feces of affected animals. Once excreted, the oocysts require a period of time in the environment to become “activated” (to convert to the infective “sporulated oocyst” form). The time required for sporulation to occur varies depending on environmental conditions; it happens more rapidly at moderate temperatures and under moist conditions.

Infection of lambs begins by ingestion of sporulated oocysts, typically by grazing on pasture or via consumption of contaminated feed or water. (Note that freshly shed oocysts are not infective; according to Bangoura, accidental ingestion during nursing by lambs of fecal-contaminated teats is not a major route of transmission.) Once ingested, the sporulated oocysts hatch in the intestine, and undergo several asexual reproductive cycles, followed by sexual reproduction.

The parasites invade the cells lining the intestinal walls (small intestine, large intestine, and caecum), and begin to multiply at a rapid rate. Coccidia then break through the inner linings of the intestinal cell walls, damaging

them and reducing the efficiency with which they can take up nutrients. This damage to the intestinal walls can be permanent.

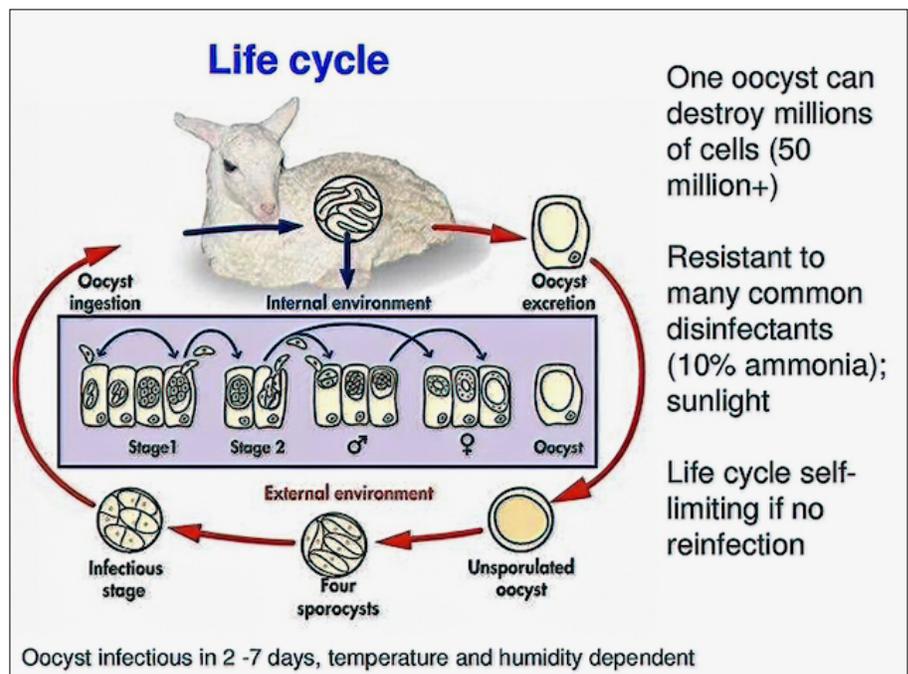
As coccidia begin to multiply, they start to produce oocysts, which are shed in the feces. Each sporulated (infective) oocyst ingested can ultimately generate millions of oocysts. The overall life cycle is completed in about one month, depending on moisture and temperature and the coccidia species. Both the nonsporulated and the infective sporulated forms are capable of surviving for up to 2 years under appropriate conditions (although most will die after a single year).

Adult animals tend to acquire immunity to coccidia, but will always harbor them, normally continually shedding a moderately low level of oocysts. These numbers may increase somewhat owing to periparturient rise late in pregnancy or during lactation. Nonetheless, early-born lambs are typically initially exposed to relatively low numbers of infective sporulated oocysts. By the time internal burdens of coccidia have increased in these early-born lambs, their immune systems have often had a chance to mature sufficiently as to fight the coccidia, although they will still shed increasingly larger numbers of oocysts.

The situation is different with later-born lambs. These will be exposed to a much higher initial dose of oocysts being shed by their older cohorts. Their less-mature immune systems are poorly equipped to resist coccidia. These late-born lambs are much more likely to display subclinical or clinical coccidiosis, typically by the age of 4 to 8 weeks, often progressing to younger and younger

### ◀ Management

**SHOW YOUR VET THIS ARTICLE. Because some of the drugs discussed here are used in an extra-label fashion, before using any of these products related to the information contained within this article, you must have approval from your veterinarian.**



**Management** ▶ lambs as the season (and environmental exposure, whether to contaminated pastures or housing) progresses. If coccidia are not controlled, growth of lambs may be permanently stunted, owing to the damage to their intestinal walls.

### Diagnosis

Although clinical signs (especially scours) in lambs that are approximately 1-4 months of age can be highly suggestive of coccidiosis, definitive diagnosis can be challenging. Diagnosis often begins with analysis of fecal samples. (It's not necessary to collect fecal samples from individual young lambs; fresh samples can be collected from the ground.) Coccidia oocysts are much smaller than Trichostrongylid-type eggs, and can easily be missed by individuals conducting their own fecal analyses unless they are familiar with the appearance of coccidia oocysts.



*Likely suspects.*

In addition, results of fecal egg counts should be interpreted with caution: not all species of coccidia are pathogenic (most are harmless), and it may take an accredited laboratory to confirm the species. This may explain why large numbers of oocysts have occasionally been found in animals that appear unaffected.

Another challenge in relying on fecal analyses for diagnosis is that lambs can be infested by significant numbers of pathogenic coccidia that don't show up in fecal samples, simply because the coccidia have not yet begun to shed oocysts. These complexities are partly why no threshold for treatment has been established.

A count of >20,000 oocysts per gram of a pathogenic species is regarded as typical of coccidiosis in lambs, Schoenian says. Response to treatment can support the diagnosis, but necropsy is definitive: affected animals display tell-tale light-colored nodules on the intestinal walls, 1-6 mm in diameter (image below), and regions of the intestine may appear reddish or bloody.

*Nodules on intestinal walls show the damage from severe coccidiosis.*



### Limiting exposure

Keeping coccidiosis from becoming a problem is an issue of management: good hygiene, reducing stress, and reducing infective pressure through efforts that include pasture rotation.

**Practice good hygiene.** Clean your barns and birthing areas prior to lambing. Bangoura recommends starting each day by working with the youngest animals that are the most susceptible to infection in order to reduce becoming an agent of transfer. Clean equipment and boots should be used each day. Coccidia are immune to most disinfectants, but exposure of boots or pens to a 10-15% bleach solution for two hours will greatly reduce numbers of infective oocysts. Clean pens regularly (every 2-3 days, daily if stocking rate is high) and disinfect. If removal of soiled bedding that frequently is impractical, Schoenian says, at least maintain clean and dry bedding on top of a manure pack. Lambing jugs should ideally be cleaned and limed after each litter.

Avoid fecal contamination of feed and water. Feeders should be elevated; feeding in tubs on the ground invites lambs to play and sleep (and defecate) in them. If feed pans or troughs are used, they should be turned over or removed after feeding to limit fecal contamination. Outdoor feeders should be moved daily to reduce contamination of the surrounding soil (image opposite page). Moist areas around waterers create "hot spots" for coccidia infection; waterers should be moved regularly, leaky fittings repaired, and additional bedding placed around indoor waterers to reduce exposure.

**Reduce stress.** Coccidiosis (subclinical or acute) is especially likely to manifest itself in lambs during times of stress: when lambs are weaned; during periods of extreme weather (especially warm or moist conditions); during the transition between winter and spring; following periods of heavy rainfall; in the presence of concurrent disease; when lambs are shipped; when their ration is abruptly changed; if they are stressed by inadequate nutrition, inadequate space at feeders (image page 8), or competition for feed by larger, stronger lambs; or when their access to coccidiostats is abruptly removed.

Maintaining a well-nourished, healthy flock helps avoid disease; animals should receive a balanced ration, with adequate nutrients and minerals (including vitamins).

Weaning is a particularly stressful time for lambs. Keep newly weaned lambs in familiar settings

(moving the ewes rather than the lambs to a new location). Schoenian notes that although fence-line weaning poses advantages in other species, it does not seem to reduce stress in lambs. See the excellent article “Coccidiosis” (see Sources) for more ways to reduce stress in lambs.

**Reduce infective pressure.** Management options to limit infections include:

- limiting group sizes (the larger the group, the greater the risk of infection),
- ensuring as tight a lambing window as is feasible,
- segregating lambs into different groups by age (say within a one-month age range),
- rotating pastures (even though oocysts are very hardy, good exposure to UV light for 2-3 weeks can greatly reduce their numbers),
- allowing older lambs to follow younger lambs on rotating pasture grazing, and
- avoiding too high a stocking density.

Avoiding grazing damp or low-lying areas can also reduce exposure to coccidia. Although there is no clear consensus as to whether colostrum directly protects lambs against coccidiosis, adhering to a vaccination schedule and ensuring they receive adequate colostrum will prevent concurrent diseases that can increase their susceptibility to coccidiosis.

It might seem advantageous to select for genetic resistance to coccidiosis. Evidence exists that some breeds, and individuals within a breed, may be more resistant than others to coccidia. Limited data indicates that heritability is similar to that for gastrointestinal nematodes (such as barberpole worm). Unfortunately, far less emphasis has been placed on selecting for resistance to coccidia than to nematodes, says Schoenian, and no long-term selection studies have appeared. Moreover, absent a correlation between resistance to coccidia and to nematodes, selecting for both simultaneously may not be feasible.

### Treatment and timing

Although good management is of vital importance, most producers will also need to resort to one or more treatments. Because damage from coccidia may be permanent, early intervention is important. There are several treatment options, with varying efficacy.

Proper timing for intervention is critical to the success of avoiding either subclinical or acute coccidiosis. There are three options:

- **prophylactic:** administering therapeutic agents before infection;
- **metaphylaxis:** administering therapeutic agents after infection but before the start of oocyst shedding; and the third is
- **therapy,** intervening once oocyst shedding has begun.

Waiting until clinical signs appear is not recommended; most of the damage to the intestines has occurred by this point. In the past, prophylactic intervention was recommended, particularly adding therapeutic agents to the feed of ewes during the periparturient period (roughly corresponding to the month before lambing) to reduce the number of oocysts shed.

According to the NADIS, such a prophylactic approach is no longer recommended, because

- The cost of treating ewes that are not clinically affected is high.
- Coccidia oocysts can overwinter on pasture; medicating ewes during the periparturient period will not eliminate this source of transmission, while long-term prophylactic treatment of a flock could give rise to resistance.
- Prophylactic treatment of lambs (beginning the second week of the lambing season and continuing until they are approximately six months old) also becomes quite expensive.
- There may be benefits to exposure of young lambs to low levels of coccidia; exposure to low levels of coccidia during their first few weeks helps confer immunity.

*Muddy areas in which lambs congregate provide an ideal environment for coccidia.*



## Management ►

Bangoura recommends basing timing for therapeutic intervention on the results of periodic (weekly or biweekly) fecal egg counts determined from samples obtained from lambs. Such an approach helps identify when lambs are first positive. This may initially seem expensive, but what is spent on fecal analyses is offset by savings in treatment costs. Bangoura notes that a few years' worth of data are likely to reveal similar temporal patterns, enabling producers to anticipate when intervention should begin, as well as to reduce the frequency of testing. Depending on the therapeutic agent, lambs should be dosed at least a week or two (and some would advise three to four weeks) before clinical disease is expected, to avoid permanent damage to affected lambs.

**Coccidiostats** arrest the growth of coccidia, and eventually starve them.

**Coccidiocidal agents** rapidly kill coccidia.

Note that very young animals (less than two weeks of age) can be harder to treat, as most treatments are incorporated in feed, which very young lambs are not yet consuming in sufficient quantity.

### Treatment options for control

Understand the difference between coccidiostats and coccidiocidal drugs: Coccidiostats arrest the growth of coccidia, but do not immediately kill them. Coccidiocidal drugs rapidly kill the parasite. If administered for a sufficient period of time, coccidiostats will eventually cause coccidia to die of starvation. One important caveat is that many coccidiostats and coccidiocidal drugs are extra-label for sheep in the United States. This means that such therapeutic agents can only be administered with the consent of a veterinarian within the context of a valid client-patient

*Adequate feed bunk space ensures that all lambs get their share of feed.*



relationship; indeed, it is illegal to do otherwise, even if some products are available over the counter or online.

Whichever treatment option is pursued, it is important to always treat the entire group of susceptible animals, recognizing that coccidiosis is a flock disease. This means, specifically, treating the young lambs, within the first two months.

### Coccidiostats

Because coccidiostats arrest the development of coccidia instead of directly killing them, it's essential to administer them for a sufficiently long period (in most cases at least 28 days if added to feed) to ensure that the coccidia eventually die of starvation. The exception to this 28-day rule is amprolium, for which a 5-day course of administration suffices if used to treat acute coccidiosis; a shorter duration may suffice for subclinical cases. If coccidiostats are discontinued too early, coccidia will simply resume growing. Coccidiostats have little therapeutic value if administered after the onset of acute coccidiosis. The coccidiostats available in the U. S. include decoquinat, amprolium, and sulfa drugs, says Bangoura.

**Decoquinat** (Deccox) is a coccidiostat that is approved for control of coccidia in lambs. It is frequently incorporated in commercial lamb feed or lamb milk replacer. It is available as a powder for mixing with loose mineral or as a top dressing for lamb creep feed; it has a wide margin of safety, and is probably the safest coccidiostat to use. A challenge in offering it mixed with mineral is to ensure that lambs are ingesting the appropriate amount. If added to feed, 1 lb Deccox (6% decoquinat) should be added per ton of creep; this assumes lambs are consuming 3.3% of their body weight in creep per day to ensure ingestion of 0.5 mg/kg body weight per day. The rate of addition can be increased as appropriate if lambs are consuming less creep. Administration should be continued for a minimum of 28 days, ideally throughout the entire period of risk.

Lambs consuming less than 1% of their body weight per day in creep medicated at this level may be ingesting inadequate decoquinat. Note that decoquinat is only active in the small intestine; affected lambs may still shed oocysts from their large intestine even if they are consuming adequate amounts of medicated feed. There is no withdrawal time for meat; this agent is not approved for sheep producing milk for human consumption.

**Amprolium** (Corid) is a coccidiostat that is sold over the counter as a 9.6% solution for treating or preventing coccidiosis in cattle. Its use is, therefore, extra-label in sheep. It operates by



inhibiting the uptake of thiamine, required for growth of coccidia. The label indicates that it can be added to drinking water as a treatment for coccidiosis in cattle for a period of five days (assuming that no other source of water is available) or administered as a drench for five days.

Recent evidence suggests that the label dosage for cattle is inadequate for control of coccidia in sheep. Dr. Hollie Schramm (DVM, Clinical Assistant Professor, Department of Large Animal Clinical Sciences, Virginia Tech) recommends administering 50 mg Corid per kg of lamb for treating acute coccidiosis. If using liquid Corid formulations developed for cattle, the appropriate dose translates to 0.23 cc of undiluted liquid Corid (9.6%) per lb of lamb per day for a period of 5 consecutive days, given directly as a drench. Note that this is substantially higher than the label dosage for cattle. Dr. Jean-Marie Luginbuhl (North Carolina State University) recommends accompanying this regime by a one-time injection of vitamin B1 to prevent thiamine deficiency; this helps to protect against nerve damage. Note that offering lambs a creep feed that is rich in thiamine may compromise the effectiveness of amprolium. The appropriate withdrawal time is 10 days for meat, according to recommendations provided to Dr. Kevin Pelzer (Virginia-Maryland College of Veterinary Medicine) by the Food Animal Residue Avoidance Databank (FARAD).

For treating subclinical coccidiosis or as a preventative, Schramm notes that a lower dose (25 mg/kg) is often effective, again given for five days; this sequence is typically administered every 2 weeks (normally for three rounds, depending on age and developing resistance). North Carolina State Extension recommends a somewhat different regimen of Corid as a preventative (0.24 cc/lb of 9.6% Corid, given as a single dose). Show your veterinarian this article and get his/her recommendation.

### Sulfa drugs

A few sulfa drugs are available for treating coccidiosis in sheep. According to Pugh (2002), sulfa drugs appear to be clinically beneficial, but may simply act through reducing secondary or concurrent bacterially triggered scours. Sulfa drugs are available by prescription only,

to be administered under the guidance of a veterinarian. Such agents include sulfamethazine (Sulmet) and sulfadimethoxine (Albon; Di-Methox). These can be added to drinking water or used as a drench; administering as a drench provides a more certain means of ensuring that lambs are receiving the proper dosage.

### Coccidiocidal agents

Coccidiocidal agents directly kill coccidia on contact; this means that they work more quickly. According to Bangoura, coccidiocidal agents available (though not always approved) for sheep in the U. S. include the ionophores (lasalocid and monensin). There are several triazine derivatives (toltrazuril, ponazuril, diclazuril) that are approved for sheep in other countries (including the European Union)—these are illegal to use in the United States.

**Lasalocid** (Bovatec) is a coccidiocidal agent approved for use in sheep raised in confinement conditions. It is an ionophore antibiotic, with antibacterial properties in addition to its function as a coccidiocide. Bovatec kills “free-living” stages of coccidia. The appropriate dosage is 30 g per ton of feed.

**Monensin** (Rumensin) is illegal to use in sheep, because Bovatec is approved for sheep and has the same efficacy against coccidia as Rumensin. It is intended for administration to goats raised in confinement. An ionophore, it is active against three different life stages of coccidia. It can be highly toxic to sheep if overdosed; underdosing is ineffective. In addition, Rumensin is highly toxic to horses and dogs. Bovatec is a safer option.

Another drug illegal to use in the United States is toltrazuril, a triazine-based coccidiocidal drug that is licensed for sheep as an oral drench in other countries (including in the European Union and the United Kingdom). Its principal downside is, first, its long withdrawal time: 48 days in Canada. (It is hard to use a withdrawal time recommendation from another country, as the limit of the drug in tissue maybe different than in the United States.) The second downside is its expense: treating a 50-lb lamb at 20 mg/kg (1 mL per 25 kg of lamb of a 5% suspension, given as a drench) costs about \$5 (vs. ~\$1.80 for a 5-day course of Corid at 50 mg/kg).

**Ponazuril** (toltrazuril sulfone) is the major metabolite of toltrazuril; it also has coccidiocidal properties. While it is not approved for use in sheep in the United States, it can be prescribed by a veterinarian as an extra-label use. According to the University of Maryland Small Ruminant

## ◀ Management

### Management Calendar

#### March 8

##### Virtual Novel Tall Fescue Renovation Workshop 2022.

Alliance for Grassland Renewal. Register at <https://www.eventbrite.com/e/virtual-novel-tall-fescue-renovation-workshop-2022-tickets-248812503897>

#### March 11

**Deadline for USDA Conservation Reserve Program signup.** Start here to find your local service center: <https://www.farmers.gov>

#### March 30

**Novel Tall Fescue Renovation Workshop - Boonsboro.** Alliance for Grassland Renewal. Register at <https://www.eventbrite.com/e/novel-tall-fescue-workshop-maryland-tickets-228445435447>

#### May 13

**Deadline for USDA Grassland Conservation Reserve Program signup.** Start here to find your local service center: <https://www.farmers.gov>

**Management** ▶ Program, a single dose (10 mg/kg) of ponazuril has been found as effective in reducing oocyst counts in kids as a five-day treatment of Corid (50 mg/kg). As with toltrazuril, it has a very long withdrawal period.

Diclazuril (Clinacox, Vecoxan) is another triazine derivative that is licensed in the European Union (and other countries), but not in the United States, for treatment of coccidiosis in lambs. It has the advantage of not having any meat withdrawal period; it does, however, require two treatments (at 1 mg/kg, given 10-14 days apart) to take effect. As it does not possess residual activity, proper timing for administration is key.

### Supportive therapy

Note that lambs experiencing acute coccidiosis should also receive supportive therapy (such as fluid replacement or electrolytes to prevent dehydration). Pre- and probiotics have also proven to be beneficial in stabilizing the bacteria in the gut; this reduces the risk of secondary infections. Examples of such products include Probios (available as a dispersible powder for multiple species, or as oral boluses or feed granules for ruminants) and Star Igniter (available as a top dress). Consideration should also be given to administration of appropriate antibiotics to avoid concurrent bacterial infections of damaged intestinal linings.

### Alternative therapies

The goal of employing alternative control measures is to avoid the use of drugs, especially if the objective is to raise animals on organic operations. At present such options are fairly limited.

Schoenian reports that one of the most promising approaches is to feed sericea lespedeza, a perennial warm-season legume, either as a component of pasture or when fed as hay, silage, or pellets. It is useful in controlling barberpole worm as well as coccidia; control of coccidia is best achieved when it is fed for 1-2 weeks prior to weaning and for 3-4 weeks afterwards. Continuous feeding of sericea lespedeza is not recommended. Unfortunately, sericea lespedeza pellets are hard to obtain (the only producer is in Alabama) and can be expensive.

Other legumes or pea plants, such as sanfoin, Chinese bushclover, carob bush/locust tree, may help but are less effective than drugs, according to Bangoura. A number of studies have shown that oregano oil or other essential oils can be of benefit in controlling coccidia, he states.

*Fat lambs with clean behinds show good management. [Image courtesy Hidaway Farm Icelandics]*

### Sources

Bangoura, Berit. University of Wyoming and Wyoming State Veterinary Laboratory, 2020. "Coccidia Management in Sheep and Goats." Webinar presented through the University of Idaho Extension Sheep and Goat webinar series, December 10, 2020. Available: [youtube.com/watch?v=6NKDLxh62eM](https://www.youtube.com/watch?v=6NKDLxh62eM).

"Baycox (Toltrazuril) 5% Oral Suspension (Canada)." Available: <https://www.drugs.com/vet/baycox-toltrazuril-5-oral-suspension-can.html>. Accessed November 6, 2021.

Khodakaram-Tafti, A.; Mansourian, M., 2008. "Pathogenic lesions of naturally occurring coccidiosis in sheep and goats." *Comparative Clinical Pathology*: 17(2), 87-91.

Luginbuhl, Jean-Marie. "Medications Commonly used in Sheep and Withdrawal Times." Available: <https://smallruminants.ces.ncsu.edu/wp-content/uploads/2013/04/Sheep-Dewormers-Withdrawal-Times.pdf?fwd=no>. North Carolina State University: Raleigh, NC. Accessed November 6, 2021.

National Animal Disease Information Service (NADIS), 2021. "Coccidiosis in Lambs." Available: <https://www.nadis.org.uk/disease-a-z/sheep/coccidiosis-in-lambs/>. Accessed October 29, 2021

North Carolina State Extension, 2021. "Sheep and Goat Dewormer Dosages." Available: <https://smallruminants.ces.ncsu.edu/wp-content/uploads/2013/04/Sheep-Dewormer-Dosages.pdf?fwd=no>. Accessed November 6, 2021.

Pugh, D. G. (Ed.) 2002. *Sheep & Goat Medicine*. Saunders: Philadelphia, 468 pp.

Schoenian, Susan. 2021. "Coccidiosis." Available: <http://www.sheep101.info/201/coccidiosis.html>. University of Maryland Small Ruminant Program Accessed Nov. 9, 2021.

Schramm, Hollie. Department of Large Animal Clinical Science, VA-MD College of Veterinary Medicine: Virginia Tech, Blacksburg, VA (personal communication dated November 5, 2021).

Whitley, N. 2017. "Coccidiosis." Prepared for the Delmarva Small Ruminant Conference: All Worms, All Day. Delaware State University, Dover, Delaware, December 9, 2017. Available: <https://www.slideshare.net/schoenian/coccidiosis-83938465>.



years. In the past 100 years or so, we've extracted about half of it and burned it. Burning it produces CO<sub>2</sub>, which lasts in the atmosphere for 1,000 years. We add to it every time we drive, fly, mow the lawn, heat the house, etc. This is new carbon added to the atmosphere.

By contrast, the carbon in the methane that cows produce is recycled: It comes from the plants they eat, which pulled that carbon out of the air (as CO<sub>2</sub>) and made proteins and carbohydrates with it. The methane that ruminants emit lasts about 10 years in the atmosphere before it is turned into CO<sub>2</sub> again by hydroxyl oxidation; it's then taken up by plants. This cycle has been going on in the United States since before Europeans arrived.

There are about as many cows, pigs, and sheep in the United States today as there were bison and deer before Europeans arrived. And animal numbers are going down as efficiency increases. In the 1970s, there were about 25 million dairy cows in the United States. Today there are 9 million, and they produce 60% more milk than they did 50 years ago. So the carbon footprint of a glass of milk is two thirds of what it was. The figures are similar for beef and pork.

### Capturing carbon

Research has shown that grasslands capture as much carbon as forests. They turn it into soil, whereas forests turn it into trees. Grazing allows even more carbon to be sequestered. How? Grazing results in dieback of some plant roots; subsequently soil microbes transform them into soil (soil is about 90% carbon). The grass regrows, makes new roots, and the cycle repeats, making new soil each time the plant is grazed.

In the United States, agriculture plus forestry emits 550 million metric tons of GHG per year, but sequesters 720. So together these are a net sink of greenhouse gasses. Grasslands emit less and capture more than cultivated land because the soil is left undisturbed.

Grazing ruminants are part of the solution, Mitloehner says, not part of the problem.

### Feeding the human population

Mitloehner presented this analogy: If the Earth were a sheet of letter-sized paper, the total amount of land on it would be the size of a post card. The agricultural land would be the size of a business card. And the arable land would be a third of that. The other two-thirds is "marginal" land (e.g., unsuitable for growing crops). Today we use it for grazing ruminant animals. Those asserting that humans should get rid of

ruminants are saying that we should not use two thirds of the planet's agricultural land.

Although the new world and Europe aren't growing much, world population will be about 9 billion by 2040. Much of this growth is in Africa, where the population is currently doubling every 10 years, and food efficiency is minimal. The places where population is growing the most is thus where agriculture isn't very efficient. Food insecurity is rampant and getting worse.

We can't feed people if we stop using two thirds of the agricultural land on the planet. We need to grow food where it is most efficient, Mitloehner stated. Ruminants are again part of the answer.

Research is now underway to reduce the methane emissions of ruminants; it includes development of feed additives that reduce methane emissions of gut bacteria. Ruminant livestock can not only be a way to use nonarable land to feed people, they can become even better at capturing carbon.

### Your role

Having the facts on the complex issue of ruminants and climate change can help you counter the myths and mistakes so frequently promulgated, and promote productive conversations about the role of ruminants in sustainable food systems and our planet's health.

**"Farm animals enhance biological cycling by consuming resources that would otherwise be wasted, and returning nutrients to soils in biologically available forms. Omnivorous chickens, turkeys and pigs can eat kitchen scraps, farm by-products, and surplus crops. Grazing cattle, sheep and goats trigger plant growth by pruning and mowing naturally occurring rain-watered vegetation, and can be moved around according to local conditions. All of these creatures – through the aggregate impact of their mouths, feet, urine, and manure -- catalyze biological activity in soils. Ecologically vibrant soil fosters water-holding capacity, vegetative growth, and carbon sequestration, building the foundation for ecosystem biodiversity."**

– Nicolette Hahn Niman

### Ecosystem services from pastures and grasslands

**Biomass production.** Converting sunshine and CO<sub>2</sub> into stored energy.

**Air purification and climate regulation** through greenhouse gas exchange—the ability of forages to fix CO<sub>2</sub> and emit oxygen—are key ecosystem processes that sustain life on Earth.

**Soil formation and retention.** The forage canopy helps form new soil, prevents erosion, and nourishes soil organisms.

**Water cycling, quality, and infiltration.** Forages capture and hold water in leaves and roots, cleanse water as it passes through the soil profile into groundwater reservoirs, and reduces nutrient runoff.

**Nutrient cycling.** Nutrients captured in forages and bound to organic matter are more protected from loss through leaching, runoff, and losses to the atmosphere.

**Habitat provision.** Pasture and grassland provide abundant habitat for bacteria, fungi, and fauna—from insects, spiders, small animals and birds to roaming wildlife as well as livestock.

**Aesthetic experience.** The beauty of native, naturalized and agriculturally managed grasslands is personal, like all works of art, yet like all natural resources exposed for our viewing pleasure, grasslands are unique in their grandeur and simple features.



# Marketing

Promotion  
underway  
for April  
Shepherds'  
Market

Promotion is underway for the Frederick Sheep Breeders Association's second Shepherds' Farm Market at the Great Frederick Fairgrounds on Saturday, April 2.

"Consumers striving to support local businesses and producers when buying food for their table or decor for their homes will enjoy the diversity on display at this local market. Products range from locally raised lamb; sheep and goat cheeses; milk-based soaps; hand-dyed yarn and staples for fiber artists and craftspeople—beautiful raw fleeces, batting, and roving," the promotional brochure states.

"There will also be fiber art, felted and knitted clothing and toys, sheepskins and felted fleeces that look like sheepskins; baked goods, veggie seedlings and more. Plus, we will be joined by Cookin' with Greece, a local food truck featuring scrumptious Greek lamb and other dishes."

Some open slots remain for this outdoor market. A requirement is that the products offered (fiber, meat, cheese, soaps, etc.) come from producers' own farms. Fiber in all of its forms is welcome (raw fleeces, yarn, fiber art and anything in between). The vendor fee is \$30 (for a 10 by 10-foot space); organizers can help locate tent rentals if necessary.

The market will be open from 11 a.m. to 3 p.m., in the grass lot across from the main fairgrounds gate at the corner of East Patrick and Franklin streets.

Contact market organizers for an application form and other information: Patricia Sanville, 240-357-1437, [patriciasanville@gmail.com](mailto:patriciasanville@gmail.com), or Polly Matzinger, 240-444-2047, [amblingbrookfarm@gmail.com](mailto:amblingbrookfarm@gmail.com).



VA mobile  
processing  
unit  
prepares  
to hit the  
road

Virginia State University's small ruminant mobile processing unit (MPU) soon will be operational, and shepherds had an opportunity to tour the unit and watch a fabrication demonstration on January 27 at the Virginia Tech Agriculture Research and Extension Center in Middleburg.

After the demonstration, VSU Cooperative Extension small ruminant specialist Dahlia O'Brien and Wally Brousseau answered questions. Brousseau has joined VSU's Small Ruminant Extension team as an Extension associate and the Mobile Unit Coordinator. Brousseau previously worked for the Virginia Department of Agriculture and Consumer Services (VDACS) as a consumer safety officer in the Office of Meat and Poultry Inspection, after a retail career that included owning and operating a slaughter and processing facility in Maine.

Those seeking to lease the unit (and their helpers) must complete a five-module certification program. Modules will include unit design and

usage, animal harvesting and carcass fabrication, regulations (state and federal), marketing, and hands-on training on operating the MPU.

More about the online certification program is available at <https://www.ext.vsu.edu/mobile-processing-unit>.

The cost to lease the unit for 4 days (you can slaughter and cut up 30 animals during this time) is \$100, plus a \$15/head unit maintenance fee. The unit comes with everything you need to slaughter and process, including packaging material. When a certified producer leases the unit, the unit coordinator, Brousseau, will drive the unit to the farm/location and be there to assist set-up and breakdown and take it away once the leasing period is over. He will also be there during all slaughter and processing for any guidance and to complete all paperwork/logs.

The processed meat on the mobile unit can either be done custom (not for sale/home consumption only) or under state or federal inspection (able to sell meat at farmers' markets, retail, across state lines' etc.). Brousseau will also arrange to have an inspector on site if inspected meat is desired. There is no additional cost for inspection.

The unit coordinator also will advise clients on site inspection and permitting requirements to ensure proper disposal of offal.



The Maryland Sheep Breeders Association, in conjunction with the Maryland Sheep & Wool Festival, is offering a scholarship in the amount of \$1,000 to a student who has been accepted or is in the process of applying for continuing education at a college or university, technical school, or vocational school. All academic majors will be considered, but priority will be given to agricultural or agriculture related majors (such as food science, veterinarian, ag. teaching, etc.).

Preference will be given to those applicants who are members or whose families are members of the Maryland Sheep Breeders Association. Payment will be made upon provision of school acceptance documentation and/or evidence of attendance.

Applications can be downloaded from [maryland-sheepbreeders.org/awards/scholarships](http://maryland-sheepbreeders.org/awards/scholarships) and must include: a completed application, a 500-word essay, two letters of recommendation, and a recent high school or college transcript.

Selection criteria:

- experience and involvement with sheep and or sheep related activities (4-H, FFA, Make It With Wool, etc.)



- agriculture or agriculturally related education/ career goals
- community service activities
- leadership and/or extra-curricular involvement
- high school/college academic achievement.

Applications will be accepted through April 15, 2022. The scholarship presentation will be made in the Show Ring at the Maryland Sheep & Wool Festival on Sunday, May 7 at 3:15 p.m. The winner will also be honored at the Maryland Sheep Breeders Annual Dinner in October.

Please email Carolann McConaughy, [Stillpoint-farmsheep@gmail.com](mailto:Stillpoint-farmsheep@gmail.com), if you have any questions or need additional information.

2022  
scholarship  
deadline  
April 15

### Make It With Wool winners shine at annual dinner & in San Diego

Maryland Make It With Wool senior and junior winners of the October 2021 contest traveled to San Diego in January to compete nationally, with senior winner Lynne Thomas from Harford County (at left in photo taken in San Diego) selected as third runner up in the Senior Division at the National Contest. (Lynne received MSBA's scholarship last year.) Junior Winner Caroline Clark (Frederick County) competed with her cape and skirt combination.

Preteen champion Preston Clark, right top, modeled his vest and shorts at the MSBA annual dinner in October, along with his friend and fellow contestant Trennan Latham (right bottom), who wore his vest. Both boys live in Frederick County.

Jamie Frank, former Maryland winner, served as chaperone. Caroline's mother Mary Ellen Clark also attended.

MSBA is a proud sponsor of the Maryland MIWW. For more information, email [mdmiww@aol.com](mailto:mdmiww@aol.com).



Maryland News ▶

We thank outgoing MSBA board members Ken Farrell, Gwen Handler, Meredith Null, and Lynn Roberts for their service to the association, and welcome four new board members for a three-year-term.

**Gary Keller** has a flock of more than 70 Dorper ewes at Windy Hollow Farm in Keymar. He began in the dairy cattle and sheep business before moving on to beef cattle and sheep.

He is a past MSBA director and is ready to serve again. He is also currently involved in the Frederick County Farm Bureau. Gary has judged livestock all over the East Coast.

Gary has served as president and deputy chief at the Graceham Volunteer Fire Company, as well as being a past chief at New Midway Volunteer Fire Company. He is now retired from the Baltimore County Fire Service.

**Susan Schoenian** is the recently-retired Sheep & Goat Specialist for University of Maryland Extension. Susan earned animal science degrees from Virginia Tech and Montana State University. She was editor of *Maryland Sheep News* for 10 years. She was named MSBA Shepherd of the Year in 2002.

Susan has contributed to the Maryland Sheep & Wool Festival in a variety of positions. Currently she is chair of the junior sheep and goat skillathon and the shepherds seminars committee.

She previously served as the ASI director for Maryland. Susan currently serves on three ASI committees: PERC, podcast, and EID. She has served on other committees in the past. She has written and reviewed fact sheets for ASI. She is the recipient of several grants from ASI's Let's Grow program.

Susan has a flock of 38 Katahdin ewes in Western Maryland. She sells seedstock and lambs for meat. Susan would like to help MSBA expand its educational role for producers of all types.

**Penny Sica** and her husband own Greenridge Farm in Fairfield, Pennsylvania. She has a daughter who recently graduated high school and is attending college.

She has a small flock of registered Suffolk ewes on her farm, which started as a 4-H market lamb project in 2012 and has grown to include sheep for breeding, market lambs, and wool products.

During the years her daughter was involved in 4-H, Penny volunteered in the Tom's Creek 4-H Club when her daughter was a member; since then she has helped with multiple Frederick

County Sheep Breeders Association fundraisers. She has also volunteered her time and talent with the Fiber Tent at the Great Frederick Fair, demonstrating spinning and discussing fiber.

Penny has attended shearing days and has mentored youth and adults on proper wool handling and skirting, and has worked side by side with instructors at the Maryland Sheep and Wool Festival in the Family Tent.

Penny currently teaches math at Thurmont Middle School. She has taught in Frederick County Public schools since 2000.

**Kate Warner** is the vice president of R F Warner Sons, Inc., a small feed mill in Lineboro. The mill, in the Warner family since 1932, is currently owned by Kate and her husband.

She and her husband have spent 40 years raising sheep, cattle, laying hens, broilers, and turkeys. Currently they have a small flock of Katahdins; they previously raised purebred and crossbred Suffolk.

Kate enjoys sharing her knowledge of agriculture through advising customers at the feed mill and through her years of serving as a 4-H leader. She has also enjoyed sharing her love of Christ through various leadership roles in her church.

Kate and Allen have two grown daughters: Anna, who teaches agriculture education at Washington State University, and Katie Rae, who teaches the nursery and landscape courses at York County School of Technology.

Kate has a master's degree in Early Childhood Education from Towson University, and she taught in Carroll County Public Schools before her children were born.



New MSBA directors bring diversity of experience



# Maryland Sheep Breeders Association, Inc.

## Officers & Directors

### Executive Committee

<b>President</b> Jeffrey White 3610 Baker Road Westminster, MD 21157 410-746-5768 chestnutcreekfarm@gmail.com	<b>Vice President</b> Andrew Keller 28301 Clarksburg Road Damascus, MD 20872 301-676-6287 vistaviewfarms@gmail.com	<b>Secretary</b> Carolann McConaughy 8253 Dollyhyde Road Mt. Airy, MD 21771 301-829-6950 stillpointfarmsheep@gmail.com	<b>Treasurer</b> Colleen Histon 1126 Slingluff Road New Windsor, MD 21776 240-388-6633 shepherdsmanorcreamery@verizon.net	<b>Past President</b> Lee Langstaff 24020 Old Hundred Road Dickerson, MD 20842 301-908-9332 lmlangstaff@gmail.com
------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------

### Ex Officio

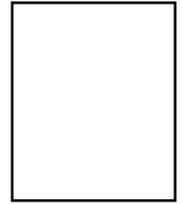
<b>American Sheep Industry Association Liaison</b>	Patricia Sanville	4637 Cap Stine Road Frederick, MD 21703	240-357-1437	patriciasanville@gmail.com
<b>Membership</b>	Kris Thorne	1130 Martin Drive Westminster, MD 21157	410-598-2459	msbmembershipchair@gmail.com
<b>Sheep &amp; Wool Festival</b>	Gwen Handler	935 Bloom Road Westminster, MD 21157	410-596-6096	gwenhandler@gmail.com
<b>Make It With Wool</b>	Judy Williamson	6924 Girl Scout Road Boonsboro, MD 21713	301-432-0281	judy10503@aol.com
<b>Maryland Shearing School</b>	Aaron Geiman	429 Hook Road Westminster, MD 21157	443-340-2322	adgeiman75@gmail.com

### Board Members

<b>2022 Directors</b>	Sarah Campbell	4956 Muddy Creek Road West River, MD 20778	443-994-4864	sarah@newroots.farm
	Nancy Cox Starkey	12895 Colonial Drive Mt. Airy, MD 21771	301-253-4732	ncstarkey@aol.com
	Ollie King	23477 Path Valley Road Doylesburg, PA 17219	717-414-8553	rivertonfarmsllc@gmail.com
	Lisa Westra	1227 Morris Road Freeland, MD 21053	410-357-5336	westra@feederbrook.com
<b>2023 Directors</b>	Steve Breeding	4602 Stein Highway Seaford DE 19973	302-381-6129	spbreeding@gmail.com
	A.J. Hesketh-Tutton	13370 Route 144 West Friendship, MD 21794	202-706-1026	fordbronco1@live.com
	Polly Matzinger	4810 Elmer Derr Road Frederick, MD 21703	240-444-2047	amblingbrookfarm@gmail.com
	Patty Sanville	4637 Cap Stine Road Frederick, MD 21703	240-357-1437	patriciasanville@gmail.com
<b>2024 Directors</b>	Gary Keller	12230 Simpsons Mill Road Keymar, MD 21757	301-606-2676	kgwff18@aol.com
	Susan Schoeninan	15007 Hicksville Road Clear Spring, MD 21722	301-582-4317	sschoen@umd.edu
	Penny Sica	550 Middle Creek Road Fairfield, PA 17320	717-408-5745	pennysica@gmail.com
	Kate Warner	5241 South Mill Street Lineboro, MD 21102	443-508-1154	akwarner81@gmail.com
<b>Maryland Sheep News Editor</b>	Martha Polkey	14605 Chapel Lane Leesburg, VA 20176	703-727-5604	mp@budiansky.com
<b>Website Coordinator</b>	Kris Thorne	1130 Martin Drive Westminster, MD 21157	410-598-2459	msbmembershipchair@gmail.com



1126 Slingluff Road • New Windsor, MD 21776



www

Maryland Sheep Breeders Association:  
marylandsheepbreeders.org

Maryland Sheep & Wool Festival:  
sheepandwool.org

like us!



Join *the*

### MARYLAND SHEEP BREEDERS ASSOCIATION

...and become part of an active organization that sponsors the Maryland Sheep & Wool Festival (the premier event of its kind in the nation), Sheep Shearing School, various youth activities, and a variety of educational functions.

You can join and pay online at <http://marylandsheepbreeders.org>, and fill out your member profile page. If you prefer to register by mail, fill out the form at left and mail with your \$25 check.

The Maryland Sheep Breeders Association Board of Directors meets every other month. Meetings are open to members. For minutes of meetings, contact the MSBA Secretary (see p. 15). 2022 meeting dates: Feb. 7, April 4, June 6, Sept. 12, Oct. 21, Dec. 5.

#### Here are sponsored events and activities for 2022

- January 29-30: Maryland Sheep & Wool Festival Winterfest
- February 18-19: Beginning Shearing School
- May 7-8: Maryland Sheep & Wool Festival
- October (date TBD): Annual Meeting & Dinner

### Membership application

#### MARYLAND SHEEP BREEDERS ASSOCIATION

#### As a member you will:

- Join an active and friendly community of shepherds and others
- Support the core activities of the MSBA.
- Receive the Maryland Sheep News, MSBA's informative newsletter, 3 times a year.
- Receive regular publications from the American Sheep Industry Association.
- Receive priority consideration for enrollment in the Maryland Shearing School (applicable only if you own sheep), and your family members will be given priority consideration for the annual MSBA scholarship.
- Receive free admission to the Maryland Sheep & Wool Festival and be mailed a free copy of the catalog.
- Pay a reduced commission on all fleeces sold at the Maryland Sheep & Wool Festival Fleece Show & Sale.
- Be able to promote your farm or business through a free profile page on the MSBA website.

**Annual membership/subscription fee: \$25.** The membership year runs from October through September. Dues for membership received prior to June 1, 2022, will be accepted as paid through September 30, 2022. Dues received on or after June 1 will be accepted as paid through September 30, 2023.

Name: \_\_\_\_\_

Farm Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Please include me in the MSBA Breeders Directory.

Web URL: \_\_\_\_\_

Breed(s): \_\_\_\_\_ No. Ewes: \_\_\_\_\_

*Send form and \$25 check made payable to MSBA to Kris Thorne, Membership Chair, 1130 Martin Drive, Westminster, MD 21157. She will contact you for additional information for the breeders directory and online profile.*