



Scottish Blackface is featured breed at Festival

Festival coordinators are pleased to announce Scottish Blackface as our Featured Breed for the 2026 Maryland Sheep & Wool Festival.

Scottish blackface sheep have a rich and important history, having been one of the most consequential breeds in the world. Yet, they are uncommon in the United States where, despite having been in the country for many years, they remain a niche breed.

Their most prominent characteristic is, without doubt, their hardiness. You name it—cold, rain, poor forage, disease—a Scottish Blackface will handle it all in stride and pop out one of the nicest lambs you'll find. This trait makes them one of the easiest sheep breeds to care for.

In the United States, they have a long coarse white fleece with black-and-white mottled faces, a look valued by most American breeders. Their appearance is, however, a throw-back to the sheep found in Scotland of several decades past. Both males and females have horns, hard black hooves, and legs with black-and-white markings, often with black "knee pads." They are a handsome looking sheep.

In keeping with their reputation for hardiness, the sheep are "independent in spirit." That might be polite language for difficult, but to characterize them as such would too easily dismiss their cleverness. They can be feisty, certainly, but also recognize the shepherd's care and are accommodating when necessary. It is this very spirit that made them so important, for in Scotland, where they are numerous, they have been able to thrive in harsh conditions, on their own, rearing their lambs high on the Scottish hills—essential contributors to the well-known success of the Scottish sheep industry.

This resourceful and powerful breed has much to offer American shepherds who are interested in raising sheep in low-input settings. They are

a strong crossing sheep, producing high quality meat lambs on their own or when bred to a terminal shire. And there is untapped potential in the Scotch mule (offspring of a Scottish Blackface ewe bred to a Bluefaced Leicester ram) that has been foundational in the UK sheep industry.

In the past, Scottish Blackface wool was knitted into socks, sweaters, and other clothing. In more recent years, it has been used commercially, for carpets and such. But there are a small number of enthusiasts working with the yarn and revisiting its potential—most notably the fashion line Merrick, based in Scotland. American fiber enthusiasts are also taking an interest.

Come meet these handsome sheep at the festival and see the display to learn more about their lives with American shepherds.

Look for special prizes for the breed in the Fleece Show & Sale, Skein & Garment, Fine Arts, and Photo Competitions.

On Sunday at 11 a.m., come to the 4-H Hall to learn about this indestructible sheep breed, the role it has played in Scotland, and what it offers American shepherds!



An American Scottish Blackface flock [Image from Littledale Farm, Wisconsin]

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President's Message

Steve Breeding
is President of MSBA

Spring spirits
and new
beginnings

Spring is finally in the air, and I don't know about you, but I'm more than ready to trade the winter chill for some green grass and active pastures! We all know that farming has had its share of uncertain days lately—between fluctuating costs and the general unpredictability of the industry—but if there's one thing shepherds are legendary for, it's rolling with the punches and staying optimistic. We've got a lot to be excited about, and there's no better time than right now to focus on the incredible community we've built together.

The best part of this season? Lambing is officially here! There is absolutely nothing like the energy of a barn full of new lambs to remind us why we love this life. It's a season of renewal, hope, and plenty of late nights, but it's worth every second. I'm looking forward to hearing about successful lamb drops and seeing healthy, thriving flocks popping up all across the state. Those new arrivals are a great reminder that no matter what's happening in the world, the cycle of the farm keeps moving forward.

Of course, the absolute highlight of our year is fast approaching: the Maryland Sheep & Wool Festival! Mark your calendars for May 2nd and 3rd at the Howard County Fairgrounds. This year is shaping up to be a total blast, especially with the rugged and iconic Scottish Blackface taking center stage as our featured breed. Whether you're showing, selling, or just there for the lamb



This year's poster was designed by rural Connecticut printmaker Andrea Wisnewski. Her linocuts, enhanced with watercolors, are inspired by the natural world, gardening, knitting, and animals of all kinds. Visit [Running Rabbit Press](#) to view more of her work.

ASI logo makeover

A svelter, less angular logo has accompanied the arrival of the new executive director and redesigned Sheep Industry News magazine.



sandwiches and the camaraderie, it's going to be a fantastic weekend.

Let's keep our heads up, our fences tight, and our spirits high. I am constantly inspired by the grit and passion of our members. Let's make this our best season yet—I can't wait to catch up with every one of you at the festival!

— Steve



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.

Ads and article submissions

Article ideas and submissions are welcome. If you have an event or topic you would like to see covered, or if you would like to write an article for an issue, please contact the editor.

The Maryland Shepherd accepts advertising; inquire for rates and sizes. Acceptable formats are PDFs, Word docs or jpegs.

Issue deadlines for ads and copy:

- Spring, April 7
- Summer, June 30
- Fall/Winter, Oct. 30

Send inquiries/ads to :
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National news ▶

A grant program for U.S. sheep and lamb producers offers an opportunity to enhance the profitability and sustainability of their operations.

ALB funds available to help boost profitability, sustainability

The American Lamb Board (ALB) has received a grant through the United States Department of Agriculture (USDA) Advancing Markets for Producers (AMP) program. This initiative is designed to help producers improve efficiency and increase productivity by integrating technology and sustainable management strategies. The program also aims to expand market opportunities and support the next generation of sheep producers.

A total of 150 producers will be selected to participate. Each will work with a technical service provider (TSP) to develop operational plans, implement recommended improvements, and organize farm data to identify best management practices that both mitigate emissions and enhance productivity.

Producers accepted into the program may receive up to \$23,000 to develop and implement improved sheep and land stewardship management plans. Additional benefits of enrollment include:

- Access to a technical service provider
- Electronic livestock identification system
- Soil sampling services



- NSIP ultrasound and genetic consulting services

Applications are open now through May 1. Selected applicants will be notified by June 1, 2026. Once eligibility documentation is completed, individual producer programs will begin and run through September 30, 2028.

More information and the application are available at [this link](#).

To qualify for the program, producers must:

- Establish farm records with the USDA Farm Service Agency
- Complete Form AD-2047 (Customer Data Worksheet)
- Certify they are not a foreign entity
- Certify they are not receiving funding from other government programs (such as EQIP) for the same practices on the same acreage
- Agree to share farm data to support analysis of production efficiency and land stewardship practices
- Participate in required educational workshops and webinars.

ASI's Wool Council is sponsoring a Small and Midsize Mill Meetup on July 28-29 in Sheridan, Wyoming, for mill owners interested in expanding their operations and production.

The conference aims to support small and midsize wool mills, helping them to increase efficiency, gain productivity and profit, and plan for the future.

ASI sponsors mill meetup in July

selected to attend and their representatives will receive:

- Conference attendance
- Hotel room for up to 3 nights
- \$200 travel reimbursement
- Breakfasts, lunches, and 1 dinner
- Cost to participant: Travel costs over \$200

Ten additional spaces available for mills or interested parties:

- Receive conference attendance
- Receive 2 lunches and 1 dinner
- Participants are responsible for hotel and flight costs plus a \$100 conference fee.

Priority will be given to:

- Owners and operators of small and midsize wool mills in the United States
- Interest in and motivation to expand operations or increase production
- Have been in production for at least 3 years
- In and from across the United States (a variety of mill sizes will be selected).

A series of speakers will address topics including scouring, maintaining a workforce, gaining capital, and marketing.

The applications deadline is April 20; [apply at this link](#).

Twenty mills will be

Grad student scholarship offered

The Sheep Heritage Foundation Memorial Scholarship offered through the American Sheep Industry Association, provides \$3,000 in financial support for a graduate student pursuing a sheep-related study that will support the advancement of the U.S. sheep industry, lamb and wool. Eligibility requirements are:

- Any graduate student involved in sheep and/or wool research in such areas as animal science, agriculture economics or veterinary medicine.
- Applicants must be enrolled in a graduate school in the U.S.
- Applicants must be a U.S. citizen.

Application requirements are a completed application, two letters of reference, and proof of graduate school acceptance/enrollment.

Application Deadline: May 31. Access the application [here](#).

Eight shepherds' seminars are offered at this year's Maryland Sheep & Wool Festival; all but the FAMACHA® training are free.

Friday, May 1, 9:30-11 a.m. FAMACHA® Training and Certification

The FAMACHA® system is a targeted selective treatment tool that enables small ruminant producers to assess anemia levels in sheep and goats by examining the lower eyelid. This approach helps identify animals most likely affected by barber pole worm infection and supports more informed, selective deworming decisions, thereby improving parasite control while slowing the development of anthelmintic resistance.

The class fee is \$20 per person, and there is a 25-student maximum. It will be taught in the Rabbit Barn. Each student will receive a FAMACHA® card upon passing the hands-on test at the end of the class. Pre-registration is required: <https://mswf2026.eventbrite.com>.

The class will be taught by Dr. David Brown, assistant professor at the University of Maryland Eastern Shore (UMES), with a three-way appointment in teaching, research, and Extension. His work focuses on sheep and goat production, nutrition, and health. Dr. Brown's applied research emphasizes low-input small ruminant production systems and the use of biological and integrated management approaches to reduce gastrointestinal nematode (GIN) challenges in sheep and goat operations.

Saturday, 9-11:30 a.m. Trees and Sheep: Designing a Silvopasture System to Benefit Your Flock

Meet Harrison Rhodes in the Dining Hall to learn how the right trees in the right place on your farm can reduce heat and cold stress on your flock, increase forage production, provide valuable fodder, benefit soil health, and be beautiful. But the wrong trees in the wrong place can do just the opposite. In this session you will learn how to practically integrate beneficial trees into your fields without extra headaches or losing valuable pasture for the benefit of your sheep (and other animals too). We will discuss the whys and hows of silvopasture design, planting, and funding to make your planting a success as well as some of the common mistakes and pitfalls of trying to

Rhodes is an agroforestry consultant with Trees for Graziers, a company that specializes in integrating trees into pastures on farms. He's also a homesteader/farmer, who designed, planted, and managed for 7 years Rising Locust Farm, a diverse multi-species grazing farm



Image courtesy
Leo Tammi

Management

that incorporated silvopasture into all of its enterprises. The farm raised Highland cattle, Katahdin hair sheep, pastured hogs and pastured laying hens, and marketed its products direct-to-consumer through a CSA subscription. Harrison is currently starting a new silvopasture project from scratch with his family in Dillsburg, Pennsylvania, this year.

Saturday, 11:30 a.m. to 1 p.m. Fecal Samples

Join Dr. Eric Dubbins and Dr. Aislinn Latham in the Dining Hall to learn a little about the nematode life cycle, how to process fecal samples for floatation, how to mount a slide and how to scan the field for eggs. Then, along with your vet, how to use the data to create a parasite program.

Dr. Eric Dubbins is a veterinarian with large animal experience. He practiced in Virginia, Florida, and Maryland including food animals, equine, and small animals. He's taught at all academic levels and really enjoys the practical application of science to medicine and learning. He will discuss field necropsy and intestine parasite diagnosis and treatment.

Aislinn Latham graduated from Purdue in 2022 and has been practicing veterinary medicine since. Growing up being involved in 4-H and breeding sheep on her family farm in Thurmont, Maryland, it was clear early on that Dr. Latham had a passion and skill for the field. Her professional interests include all aspects of large animal medicine, specifically sheep as well as a developing interest in small animal surgery. She

Eight Shepherds' Seminars coming to Festival

A silvopasture created from an existing wooded area in Virginia.



Management ▶ lives on her family farm with her two dogs and about 100 sheep. In her free time, she enjoys art, writing, and exercising.



Students at a lamb necropsy workshop in 2011.

Saturday, 1:30 p.m. to 3 p.m.
Necropsy

Meet Dr. Eric Dubbins and Dr. Aislinn Latham in the Dining Hall to learn how to conduct a sheep necropsy: how approach and assess the patient externally, how to incise the skin and open the body cavities, then how to expose the organs and inspect them for abnormalities. In this session, the instructors will also discuss field necropsy and intestine parasite diagnosis and treatment.

Sunday 11 a.m. Scottish Blackface: Queen of Hill Sheep

Come to the 4-H Hall to learn from Bird Cupps about this indestructible sheep breed, the role it has played in Scotland, and what it offers American shepherds. Expect lots of pictures and a friendly interactive session.

Cupps hails from southwestern Wisconsin, where she raises a flock of 100 Scottish Blackface. She specializes in imported genetics, sourcing semen and embryos from Perth-style Blackface sheep in Scotland.

Sunday, 9-10:30 a.m. Shepherds' Panel Discussion: "It's OK to not be OK"

Shepherding is built on strength, resilience, and hard work — but even the strongest among us face seasons that feel overwhelming. Barn fires. Flock loss. Illness. Financial strain. Burnout. The realities of agriculture can weigh heavily, and too often we carry that weight alone.

Join us in the 4-H Hall, where the Maryland Sheep Breeders Association (MSBA) is proud to lead this important conversation, bringing our community together to talk openly about the



**Kidd is new
Frederick
ag extension
agent**

Sara Kidd is the new agricultural Extension Agent for Frederick County, filling a year-long vacancy. She spent nearly 15 years in North Carolina prior to accepting the Maryland position.

Kidd said she looks forward to pointing the county's farmers to resources to help with all the challenges they face today, including rising fuel costs, farmland access and loss through development, and to connect them with grants,

hard parts. This panel will share real stories, practical ways to care for your mental wellness, and reminders that reaching out is a sign of strength—not weakness.

When tragedy happens, community matters. Support matters. Showing up for one another matters. You are not alone. It's okay to not be okay — and together, we move forward stronger.

Sunday, 12:30-1:30 p.m. Forage Identification and Selection

Selecting forages to fit within a production system can feel overwhelming. In this presentation Dr. Amanda Grev will provide an overview of some of the most common forage species used across the mid-Atlantic. Discussion will include different species and their growth habits, how forage growth type affects grazing management, and how to choose appropriate forage species for your operation. A variety of forage samples will be available for some hands-on forage identification practice.

Dr. Grev received her M.S. and Ph.D. degrees in Animal Science at the University of Minnesota, where her research focused on animal nutrition, forages, and pasture management. In 2019, Dr. Grev joined the University of Maryland Extension team as the Forage Extension Specialist. In this role, she works to support forage producers, livestock owners, and industry professionals across the region through a combination of research and Extension programming in the areas of forage production and pasture management.

Sunday, 2-3 p.m. The ABC's of Maintaining a Healthy Pasture Stand

What does your pasture need? Join Dr. Amanda Grev in the 4-H Hall to learn more about pasture maintenance, including fertilizer, weed control, and other management strategies to keep your pastures healthy and productive over the long term.

programs and technical assistance. She'll also coordinate with 4-H programs.

She [told the *Frederick News-Post*](#) that labor shortages remain a persistent challenge for farmers. She previously worked on apprenticeship programs in North Carolina, and said that promoting similar efforts could help connect experienced farmers with newcomers while preserving farmland.

Contact her at skkidd@umd.edu, 301-600-3576.

At January's Virginia Forage & Grassland Council forage conference, Dr. Terry Swecker, professor emeritus of the Virginia-Maryland School of Veterinary Medicine, discussed an integrated pest management approach to dealing with flies on the farm: tree swallows.

Face flies cause eye irritation and serve as a vector for the bacteria that cause pink eye in livestock, and horn flies (the small blood-sucking flies found on the sides and backs of cattle and other livestock) reduce animal gain and performance when numbers exceed roughly 200 flies per individual.

There are many chemical options available for fly control, but Dr. Swecker noted the important role that bird predators play in reducing fly populations in the pasture setting. Researchers at Smithsonian's Virginia Working Landscapes program are currently conducting a study in which they are determining how many pest insects tree swallows and eastern bluebirds eat by analyzing fecal samples from birds nesting on cattle farms.

While we eagerly await the results of this study (with published data expected by next year), let me summarize some of the findings of a 1999 Cornell University study regarding the potential of tree swallows as beneficial predators of face and horn flies. This 5-year study featured dietary analysis of hundreds of individual tree swallows.

According to the study, tree swallows:

- demonstrate a dietary preference for flies, which make up to roughly 25% of the diet,
- appear to prefer flies within the size range of the face fly, but flies within the size range of the horn fly tend to make up a greater part of the diet in terms of total mass consumed per day,

- spend approximately 45% of their foraging time at an altitude of less than 7 feet (i.e., close to the ground), and

- tend to forage within 700 feet of their nest during the nesting season (late April-July in Virginia).

Using daily total insect consumption data from a University of Pennsylvania study and some back-of-the-napkin math, I calculated that an individual tree swallow might consume 150 face flies, 850 horn flies, or some combination of the two daily. These numbers would likely drop by as much as 60% after the nesting season is over, but tree swallows in your pastures still have a lot of potential to reduce the fly pressure on livestock through late August.

Nest box designs that can be used by both tree swallows and bluebirds (another grassland insect predator) are easy to [find online](#) or at your local Cooperative Extension office.

If two nest boxes are placed 5 to 25 feet apart, bluebirds and tree swallows will likely peacefully share the same territory. They don't compete for food because bluebirds hunt for insects on the ground, while tree swallows catch them in flight.

Once both pairs are established, they often work together to drive away common intruders, like house sparrows. When installing many over a large area, each pair of boxes should be separated from the next pair by at least 100 to 300 yards.

Two final tips: You're more likely to get bluebirds and swallows in your boxes if you place them in the open. Placing them too close to trees or wooded areas can attract house wrens and chickadees, and make the boxes more accessible to predators. It is also recommended to use predator guards (see above link for types).

Adapted from an article in Virginia Forager.

◀ Management

Feathered fly control: A strategy to embrace

Matt Booher

is a Virginia Cooperative Extension agent



Paired boxes for tree swallows (top) and bluebirds (above) allows coexistence for these bug-eaters.

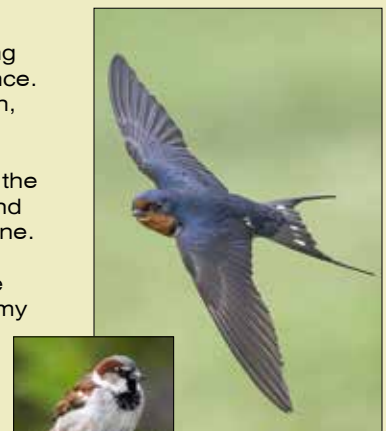
The barn swallow/house sparrow war, and...a sequel?

One of the pleasures of the summer chore of clipping pastures is watching the deft flying of barn swallows circling the tractor in pursuit of flying insects arising from the disturbance. And their collegial and noisy presence as they built or refurbished their nests in the barn, after they returned each spring, was another bright spot of the summer season.

That is, until the great Battle of the Barn three years ago, when after a days-long battle the aggressive, non-native house sparrows drove my cherished swallows away. I glower and curse these invaders, and cheer whenever my (mostly rodent-focused) barn cats nab one.

I still have a smaller group of barn swallows keep me company on the tractor, and have seen the odd newer swallow nest in the tractor shed, but the elegance they brought to my avian neighborhood is gone, replaced with the sloppy housekeeping and intra-species feuding of the sparrows.

I've put in a request to my farm woodworker to manufacture a few more next boxes to pair with the existing bluebird houses, in hopes of enjoining both swallow and bluebird to harass the sparrows in a new avian conflict. I don't know if I'll eventually get "my" barn swallows back, but it's my new integrated pest management tool. — *Martha Polkey*



Barn swallow and house sparrow.

Management ▶

A look into AI and embryo transfers

Martha Polkey

*Maryland Sheep News
editor*

A sedated ewe is placed in the AI cradle at Applied Reproductive Concepts in Greencastle, Pennsylvania. [Image by Martha Polkey]



In a March 2026 podcast, host Dr. Jake Thorne, Texas A&M University, spoke with Dr. Daniel Poole, associate professor of Animal Science at North Carolina State University, about artificial insemination (AI) and embryo transfer (ET) in sheep.

Poole's research focuses on understanding how environmental and management factors impact reproduction, and explores the cellular and molecular mechanisms regulating ovarian function, to optimize livestock reproduction.

Poole didn't grow up around sheep, but in graduate school at Ohio State University he met his future wife, who grew up with Corriedales. They moved to eastern North Carolina, found that the climate did not suit the Corriedales well, and switched to Dorsets, which their children now raise, show, and sell. They have used AI and ET in their own operation.

Thorne asked Poole where these reproductive technologies stand now, and where would we like them to be. Poole said that the U.S. sheep industry is a little behind Australia and European nations, but is catching up. The general technology for sheep has not changed much in the past 20 years, he said, but there has been some advancement in semen preservation, estrus synchronization, and embryo transfer here in the United States. "We have challenges to overcome, and we learn from each hurdle" as that knowledge advances, he said.

Among the most important refinements in the past decade, Poole said, has been better understanding of the proper timing for the sperm to meet the egg, a better understanding of the ewe's biology, and better control of the ewe's estrus cycle to maximize AI success.

Much of the recent research in this nation has focused on AI protocols, Poole said, with land

grant universities fine-tuning those protocols for their state's climate, conditions, and flock management systems.

At North Carolina State, Poole has worked with fellow associate professor Dr. Andrew Weaver (Cooperative Extension specialist) on a project with Katahdin sheep. Weaver developed metrics for evaluating feed efficiency, to identify sires that rank high (and low) for that moderately heritable trait. They then harvested semen and studied the heritability of that trait being passed on to progeny

through embryo transfers (where the embryos' dam and sire rank high on feed efficiency), to answer the question: Using advanced reproductive techniques (ET), how fast can we create this highly efficient strain? And what is the cost for the producer?

"As our land resources continue to diminish across United States, feed efficiency is becoming more critical to animal agriculture," Poole said. And using reproductive technologies can speed up genetic improvement.

The selected embryos are to be implanted in the University flock's Katahdin ewes this April.

"AI is tremendously viable when we think of how quickly we can bring in genetics," Poole said, and it complements on-farm management by allowing rams on the farm to serve longer than their usual 3-year term, because of the unrelated AI ewes added to the replacement flock.

Embryo transfer is the next level of even more rapid improvement. The harvested eggs of high-ranking ewes are fertilized with semen from similar rams and those eggs are planted in surrogate dams. "It multiplies the production that a single superior ewe can manage, and allows rapid expansion of superior females in our flocks, Poole said.

In answer to Thorne's question about what is most important to successful artificial insemination, Poole stated that all aspects are crucial.

The protocol

The laparoscopic insemination process (sedation of the ewe, placement in the cradle, preparation and incision, placement of the semen from the straw [or the embryo], recovery and observation period) is well established, with research indicating minor tweaks to pharmaceutical dose for different breeds and management environments. (See box, next page.) Once mastered, the technique is not difficult (certifications are not required and a trained technician can perform it), Poole said, but the pharmaceuticals require a veterinarian's oversight.

The ram

Improvements have been made in the quality and consistency of semen collected, with samples analyzed before and after collection for good morphology (shape and structure) and motility (movement). Collection locations across the country (and the world), use carefully researched preservation media for the semen—usually a proprietary formula. "Those special concoctions to keep those sperm alive influence the quality and can differ from station to station," Poole said,

“but as long as you are purchasing semen from a reputable location you’re going to be in good shape.”

Not all rams’ semen survives the freezing process well, Poole said, and as the NC State project showed. Fresh or chilled semen can be an option in some areas.

The importance of morphology and motility becomes obvious when one considers the difference between the number of sperm released via natural breeding in a ram’s natural ejaculation (from 9 to 15 billion), and the number present in a straw of semen—just 5-20 million sperm cells. That smaller number is effective, if the sperm is of high quality, because they don’t have to travel as far (they are inserted close to the egg inside the uterine horn).

The ewe

Of course, optimal success depends upon the female. Is she in good body condition (scoring 2.5 to 3.5), with all the nutrients on board that will support follicular development and nourishment of the embryo?

Will the stress of handling, from pre- through post-treatment, be low enough that the fertilized egg survives? “We need to handle them three times” during the AI process, Poole said, “and

this poses a challenge in our various management systems.” Those systems range from large confinement operations in the Midwest (where ewes are more used to handling) and pasture based farm flocks, to range ewes that lamb and forage with little close human contact for most of the year.

Keeping nourishment levels even following AI procedures is also critical. “A positive energy balance and consistent intake fosters more embryonic survival,” Poole said. Kicking ewes out to pasture only after AI can result in a 10 percent reduction in the success rate, he said.

The environment

The time of year and physical environment of course affects the success rate for AI. The doses of pharmaceuticals (especially when the desired AI time is outside of the normal estrus period for the breed) can be adjusted, but heat stress can be a difficult obstacle.

“Heat stress in ruminants is a main area of my research here at NC

◀ Management



Dr. Rachael Weiss places a straw of semen into a sedated ewe’s uterine horn. [Image by Martha Polkey]

The AI protocol: Hormonal management and the insemination process

The protocol for laparoscopic artificial insemination is based on manipulation of the ewe’s estrus cycle to pinpoint the time of ovulation, so that the semen can be placed in the uterine horn at the optimal time to meet the egg. The ewe group being inseminated are synchronized so they can sequentially undergo the procedure.

Scheduling thus is counting backwards from the date and time of the insemination appointment, to implant and inject hormones that will inhibit and then precipitate ovulation.

In addition to flushing recommendations (increasing the amount of nutrients provided to the animal), some veterinarians will advise injection of vitamin and mineral supplements (e.g., Vitamin A D E and Bo-Se) to ensure an optimal nutrition profile, prior to hormonal manipulation.



A CIDR.

CIDRs (which stands for controlled intravaginal drug release) for sheep, which contain the hormone progesterone, are placed in the ewe’s vagina using a sterile procedure (and surgical gloves to protect the applicator from exposure to the hormone).

Progesterone is used to synchronize estrus (heat) and ovulation across a flock. By mimicking a phase of the estrous cycle, it inhibits ovulation, and upon removal, results in a high percentage of ewes coming into heat within a predictable window.

The CIDRs remain in the ewe for 10 to 14 days. Just before withdrawal ewes are given a dose of a prostaglandin (Lutalyse) or a synthetic analog of it (such as Estrumate), to induce heat (ovulation).

Two days before insemination the CIDRs are removed at a precise hour and another hormone containing gonadotropin

(a hypothalamic hormone that regulates reproduction by stimulating the pituitary gland to release follicle-stimulating hormone [FSH] and luteinizing hormone [LH]) is administered. About 24 hours later a teaser ram is placed with the ewes to further stimulate ovulation. Feed is removed 24 hours before the procedure, and later water also is withdrawn.

At the facility (or on-farm), ewe is sedated, placed in the cradle, and the incision area is prepared (shaved and disinfected),

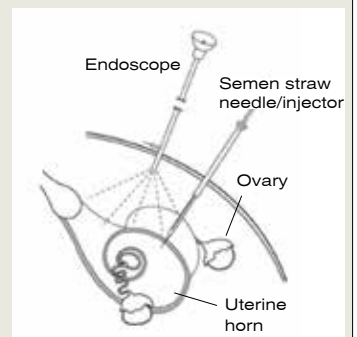
An endoscope is a special telescope with a fiberoptic light is inserted in one incision, and an insemination device pierces the uterine horn and empties the straw of semen into it, repeating on the other side.

The sedation is reversed, ewes may be given a dose of antibiotics, and observed to ensure recovery.

In the weeks following the procedure, a low-stress environment for the ewes is important. The greatest risk of embryo loss from heat and humidity stress is the first 7 days; the embryo is implanted in the uterine wall by days 20 to 24. The shepherd should avoid unnecessary handling or working the flock with dogs.

The average “take” rate for laproscopic AI is from 60 to 80 percent.

A detailed description of the process is on the SuperSire LTD [website](#).



Management ▶

State,” Poole said. “I’m particularly interested in the resulting reproductive failure.”

He reported that as temperatures increase, there are changes in (and reduced) follicular development, “so as we use these pharmaceutical products, we see that heat stress is going to stall the [follicles’] growing process, and reduce ovulation rate.”

Poole says they are literally “cooking” the system, with decreased response to hormones, lower quality eggs, thus lower quality survival. Plus, heat decreases appetite.

This leads him to ask whether early August AI in North Carolina looks “something like insanity. Are we setting ourselves up for failure?”

Another consideration, particularly when implanting embryos, is the environment in which those high-ranking sheep live—and if those progeny are suited for the climate in which they will live on your farm. For example, a Merino sire and dam produce superior wool quality in arid regions of Australia, but how will those fleeces do in the upper Midwest or the Mid-Atlantic? If there is doubt, semen (instead of embryos) is the best option.

Costs and availability

The initial costs of AI are prohibitively high for some producers, especially if they find it difficult to readily quantify the medium and long-term economic advantages of genetic improvements. This requires sitting down and doing the math, which consequently still may consist of some fuzzy “maybes.”

Semen cost depending on breed and origin (domestic or imported) can range from \$15 to \$150 per straw/ewe (and up to \$500 at an upper end of the scale). Costs for pharmaceuticals, supplements, and the AI services can be from \$150 to \$200 per lamb born.

Simpler and cheaper AI methods available for other species (e.g., cattle and goats, which don’t require laproscopic intervention) have a poor success rate with sheep, because of their cervical structures. The ovine cervix has 7 to 12 interlocking cartilage rings (contrasting with just three in goats) that protect the uterine environment from contamination. Minimally invasive vaginal AI procedures consequently have very low rates of success in sheep.

Research to overcome these obstacles has focused on three avenues to simplified procedures:

- New materials for

construction of a hemostat, speculum that would allow manipulation of a catheter through the cervix.

- Chemical compounds/treatments that would facilitate dilation of the cervix and allow passage of a catheter.

- Construction of a new type of catheter (with a different diameter and rigidity) to overcome the problem of threading through the cervix.

Another issue is having the service itself available near to the farms that might consider it.

Engaging a veterinarian/provider to coordinate AI procedures for a range of regional producers at a predesignated time and location is one option, Poole said, with the assistance of state universities coordinating with Cooperative Extension staff.

Research and the future

Thorne asked whether work is being done to simplify protocol to reduce handling. “This is the million-dollar question for sheep AI,” Poole said. “We don’t have that magic bullet yet.”

Or is it a magic bolus? Could researchers develop a multi-drug bolus for implantation, that would essentially be an egg timer, with timed release of the hormones into the body? “I don’t know if my generation will be able to come up with this, but the next one might,” he said.

Thorne asked Poole, “Looking into the future, what has to happen for AI and ET to become adopted on the commercial side?”

Poole cited two critical factors.

- It must be cost-effective for producers. If the traits selected for take time to measure in the progeny, it may be harder to see benefit right away (unlike, for example, fleece quality), and the added cost harder to justify for the flock owner. In the North Carolina State project, Dr. Weaver is collecting semen from those feed-efficient rams and offering it at lower cost to producers.

- The technologies must be accessible. High-quality collection facilities are needed, and professionals and educational institutions will need to come together to set up centralized AI days at locations close to a group of producers.

Thorne concluded the podcast with a final question: “If you could design ideal sheep AI system, what would it be?”

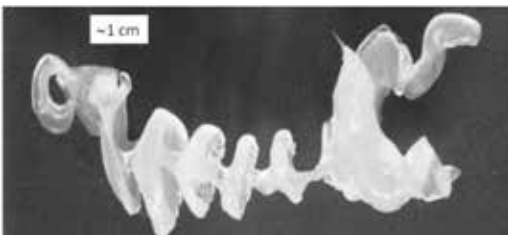
“I don’t honestly know if it’s possible,” Poole said, “because of the beautiful diversity of our management systems across the nation.”

“Our national flocks are bred to prosper in hot, dry, wet, and cold environments, wherever humans have brought them.”



You can access this and other ASI research podcasts on the association’s resources webpage, via Spotify or SoundCloud.

A silicone mold of the inner cervical lumen of an adult ewe showing the funnel-shaped cervical rings [Image c courtesy of Dr. Chris Buschback, SR Genetics, Ontario, Canada]



Ecdysis Foundation, home to the [1000 Farms](#) initiative, has put out a call to farmers for testing on farms, especially those following regenerative practices.

The foundation conducts grower-focused research to transform agriculture with regenerative principles. From their website: “Ecdysis has a strong emphasis on farmer-, rancher-, and beekeeper- driven research questions, and empowers growers by involving them in the actual research projects themselves.”

A new initiative called [Project Avalanche](#) trains a group of farmers how to do the testing themselves. Organizers are looking for organizers in a geographical region that can recruit at least 10 farms to sign up for a 3-year testing program. The data they gather at these farms will be used to further research and documentation of the principles of regenerative agriculture and its effects on the soil and ecosystem on the farm. (Below right, a farmer secures a sample for a soil microorganisms analysis.)

The measurements aim to quantify:

- soil chemical and physical properties, including soil carbon, microbiology and organic matter
- water dynamics
- diversity and biomass of plant communities
- insect diversity and distribution
- bird abundance, diversity, and habitat use
- pests, both plant pathogens and insect pests
- crop nutrient analyses
- economics and net profitability.

The Year 1 testing is done first by a team of scientists from Ecdysis, and then each farm is asked to repeat all of the tests within a 3-week window to ensure good testing protocol. Ecdysis will pay for the tests, but the farmers will provide the labor to gather the soil, forage and other samples needed. The organizer will be the keeper of the test equipment and the shipping supplies and will be responsible for shipping samples.

The farmers agree to perform the tests once a year for 3 years, with each year’s tests paid for by Ecdysis. An online meeting will be held to discuss results which include how their farm compares to other farms in region and country practicing regenerative agriculture and those practicing conventional farming.

The minimum acreage required is half an acre, but they would prefer larger farms. If you want to be an organizer in your own area, you can also contact Ecdysis foundation by emailing Kristiana Siddens, kristianna.siddens@ecdysis.bio.

◀ Management

Farms sought for 3-year regenerative ag research project

Researchers from Ecdysis collect data on a livestock operation.



The Virginia Forage and Grassland Council is sponsoring a two-day Grazing School May 12-13 in Madison, Virginia. Designed with beginning and experienced producers in mind, this 2-day, intensive course will teach you everything you need to know to better manage grazing on your farm.

The focus is to teach the fundamentals of plant growth and grazing management, soil health, and flexible grazing system design to enable you to adapt to your farm and grazing style. Additionally, we teach the integration of soil, water, and wildlife conservation as important parts of the system.

Participants will learn:

- basic pasture and forage management
- soil fertility & nutrient management
- fundamentals of grazing management
- designing a rotational grazing system

- installing and using electric fencing
- strategies to extend the grazing season
- matching forage quality & animal needs
- economics of grazing
- herd/flock health
- animal handling

You will have hands-on opportunities in the field to work with temporary fencing, identify forage and weed species, evaluate pasture, and learn the critical points of designing an animal handling facility.

Finally, put it all together for your farm: the last day of the school features a workshop where you can sit down with our instructors to begin developing a custom grazing plan.

The fee is \$150 and includes morning refreshments, lunches, and class materials.

[Register at this link.](#)

Grazing school set for mid-May

Management ▶

Probably coming
to a pasture near
you this summer...

**Prickly
problems**
Chris Penrose and Ted
Wiseman

are Ohio State University
Extension Educators



Cocklebur seed maturing.

Over the past 20 years, we have seen more and more cocklebur becoming established on our farms; other farmers in our area have noted it as well. Chris thinks it started on his farm when he fed whole shelled corn to cattle out in the pastures to extend hay supplies in the winter. You would think this summer annual would be easy to control, but it isn't. We and several of our colleagues recently finished a 5-year trial on timed mowing of pastures in the summer and one year after concluding the study, we went out to the site in September, it had not been mowed yet, and it was completely engulfed with cocklebur. No matter when or how often we mowed, after doing the same thing for five years, there was no difference.

One would think that if we went out and mowed a summer annual when the stem is elongating with immature seeds and cut below the seeds, we would kill the plant, and that still may be the case. However, how about the 10% that were too short to mow or still immature? During the trial, we noticed many cocklebur plants maturing only four inches tall with lots of seeds after mowing – very discouraging. Even then, we wondered why it kept spreading so much.

According to *Weeds of the Northeast* (1997), this

plant blooms July through September, with male and female flowers on the same plant. Each bur (the seed cover we have to pull out of our sheep and dogs) contains two fruits, each with one seed. The discouraging part here is that the lower seed can germinate soon after the bur (or seed pod) splits open. The other seed can remain dormant for one to several years, meaning it may take years to eliminate.

Timely, repeated mowings may keep cocklebur in check or slow the spread, but if it becomes established, pastures will likely need a herbicide. According to the 2022 Ohio State University Extension weed control guide, most broadleaf herbicides for pastures are very effective, as well as Glyphosate for spot treatments. Before selecting one, consider the residual impact of the herbicide and how long one must keep animals out of the pasture after spraying. We are fortunate that there are options for short term and long-term residual of the herbicides, and there are herbicides that may have short to no grazing restrictions depending the class and type of livestock you have. As always, read and understand the herbicide label and restrictions before using: Some have very strict grazing and haying requirements.

If you have pastures where cocklebur is becoming a serious problem, it will only get worse, so consider taking action. If you have some fields where you find a few rogue plants, consider pulling them out, before they can get established. One plant today could become many next year.

Thistles

Ted Hughes

Against the rubber tongues of cows and the hoeing hands of men

Thistles spike the summer air

And crackle open under a blue-black pressure.

Every one a revengeful burst

Of resurrection, a grasped fistful

Of splintered weapons and Icelandic frost thrust up

From the underground stain of a decayed Viking.

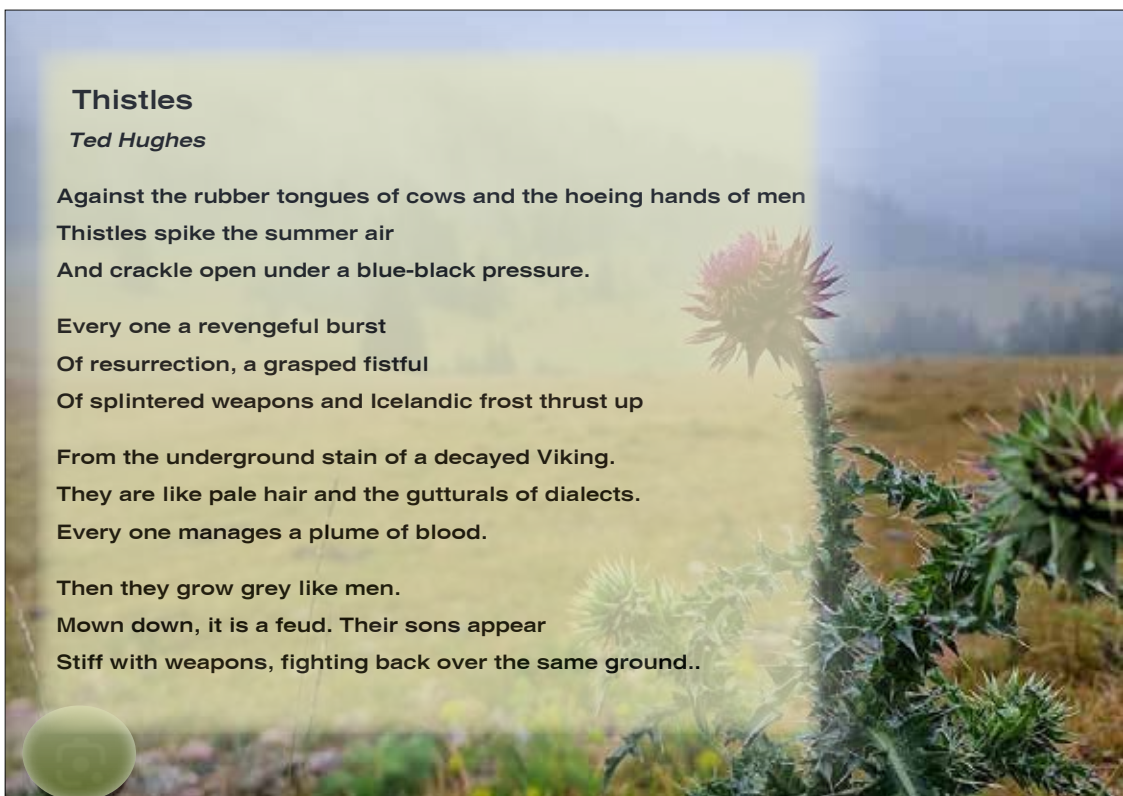
They are like pale hair and the gutturals of dialects.

Every one manages a plume of blood.

Then they grow grey like men.

Mown down, it is a feud. Their sons appear

Stiff with weapons, fighting back over the same ground..



A collection of sheep producers in our area are having wool pellets made. And a few of us are even selling—some. We (Lucky Lane Farm) are now in our third year of having wool pellets made from fleece skirtings. I thought I'd share some of the things that seem to be helping in developing a market. (Full disclosure: we are currently barely breaking even on wool pellets. Part of this is because we've been giving a lot away, writing it off as "business development"). We are being very conservative at present, only taking a new load of skirtings in to have more wool pellets made once we've hit "payback" period for the last batch. So here are some suggestions. Some may seem obvious, but perhaps others will provide you with inspiration.

Timing. We believe that, at present, the most promising market for wool pellets is from home vegetable gardeners. That means they are a seasonal item, likeliest to find buyers around May of each year, when home gardens are planted. There may be an additional market to people for repotting houseplants that would be more seasonal. But until that market develops, focus on getting your pellets made and packaged before people put their gardens in.

Marketing. If you have a booth at a farmer's market or something like a poultry/plant swap, that would be an ideal place to sell wool pellets. Consider making up an educational poster, and bring two tomato plants (or other vegetables, such as lettuce), one grown with, and the other without wool pellets. Or perhaps there's a local farm store willing to offer your wool pellets on a consignment basis. If you don't sell at farmer's markets, consider putting together an educational



flyer, and dropping off a free sample of wool pellets to local nurseries along with your flyer. So far this spring I have had one local nursery agree to carry my wool pellets, and I'm hoping to add to that number.

Another potential market might represent local landscapers. Outfits that specialize in eco-friendly practices might be more likely to want to purchase some (most likely in bulk); these might be the companies that specialize in native plants. I donated some to one such company last year, and have had discussions with a second. So far I find cautious interest, but no sales, from/to landscapers. Perhaps in the future if the cost of having wool pellets made comes down (and more studies demonstrate their benefits), we will even find they become cost-effective to use in conventional horticulture.

Outreach to Master Gardeners. This may be the most effective way to grow demand for wool pellets. Last year I donated wool pellets to Baltimore City Master Gardeners, who used them on several community gardens. In return, they put on a demonstration at the Learning Garden at the Maryland State Fair last summer, complete with tomato plants grown both with, and without, wool pellets, and a table (and staff) explaining what they were. This display attracted lively interest, and I have since had several inquiries about wool pellets. I have donated more wool pellets to Baltimore County master gardeners this year. I'm confident that if they're priced correctly, they'll start to sell well. (I recommend checking online to see what other vendors are charging). So reach out to your local Master Gardeners! Your ag extension



Update: Wool pellet market development

Lynn Roberts

raises Perennales at Lucky Lane Farm in White Hall, Maryland.

A Baltimore Master Gardeners demonstration project at the Maryland State Fair featured tomato plants grown with and without pelletized wool. [Images courtesy Nancy Greene]

Marketing ► office should be able to provide you with contact information.

Educate Yourself. I have been trying to compile information on findings related to wool pellets; you can find this [on our website](#). Please accept my apologies if this information isn't perfectly up-to-date, especially during lambing season (which is happening now for us).

To quote from our website, here are the findings that Baltimore City Master Gardeners obtained last year:

“In 2025, Baltimore City Master Gardeners tested our wool pellets on several different plants. They were so excited about the results that they presented them at the Maryland State Fair this year. They found:

- Tomatoes planted with wool pellets at the DIG garden at Cylburn Arboretum bloomed earlier, and their tomatoes ripened earlier.
- Tomatoes, tomatillos, and peppers planted with wool pellets at the Eric Waller Community

Vegetable Garden flowered earlier, grew faster, and produced more fruit. Cherry tomato plants planted with wool pellets at this location also produced more tomatoes, and produced fruit at least 2 weeks earlier.

- Wool pellets placed around Snow Leopard melons and eggplants had no evidence of slugs or snails.

- Marigolds grown with wool pellets had darker green, healthier looking foliage.

Try Them Out Yourself. There's no substitute for sampling what you're trying to sell. Personally I'd rather donate wool pellets to individuals who will run controlled studies and report back to me on the results, but if you use them on your own gardens this year, you might have additional findings to offer. (For example: I haven't used them for slug control, but I gave some to my sister, who lives in a damper climate where slugs are more of a scourge, and she raved about them).

Happy gardening!



Webinar on NY farm-to-closet initiatives

Wool producers focused on expanding regionally based farm-to-closet initiatives for their clip may wish to tune into an online New York Fashion Innovation Center webinar from 6 to 7 p.m. Wednesday, April 29, to listen to a conversation with a selection of grantees from the Center's first round of grant funding.

Featured speakers and their grant projects are:

Kristina Collins – Researching efficient processes for finishing New York woven wool, creating a farm-to-fashion roadmap to scale production and expand opportunities for local wool growers and manufacturers.

Mari Stefano and Karen Oddo, Graze Woolens, LLC (D/B/A Graze) – Launching a farm-to-closet initiative to create high-quality wool sweaters using New York-sourced and manufactured yarn. This project highlights the potential of local wool in sustainable fashion.

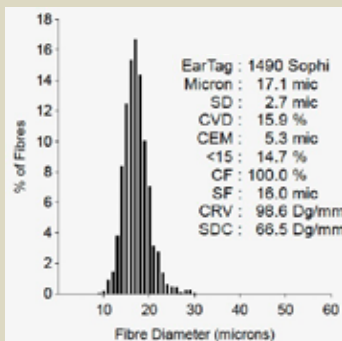
Melissa Conroy & Paige Tomfohrde, Cornell University – Building a farm-to-fashion school supply chain for knitwear by developing yarn suitable for industrial knitting machines in New York State fashion schools. This project aims to educate and inspire future designers around local fibers.

The event, “Inside Look: Working Within New York's Fiber Supply Chain,” aims to provide listeners with a clearer understanding of how local fiber moves through the supply chain; real examples of how projects are navigating sourcing, processing, and production; and insights into what it takes to translate state-grown materials into viable products.

The mission of the Center, which is a public-private consortium of colleges, universities, nonprofits and for-profit companies, is to connect researchers, farmers, designers, and manufacturers to accelerate innovative solutions using natural fibers and next-generation biomaterials to catalyze the New York State circular supply chain.

[Follow this link](#) to find out more about the effort and to register for the event.

Fiber Testing at NYFIC Lab



The New York Fashion Innovation Center's fiber lab at Rensselaer Polytechnic Institute in Troy, New York, is now accepting animal, plant, and other fibers for testing. The lab tests using an OFDA 2000 optical fiber diameter analyzer.

Fiber analyses will include:

- average fiber diameter (micron average)
- standard deviation (uniformity of the sample)
- coefficient of variation (cv)
- comfort factor (% of fibers under 30 microns)

- histogram graph (visual distribution of fiber diameters)
- micron profile graph (variation along the staple length)

Cost is \$5 per sample. [See the webpage](#) for details on submitting samples. For all service inquires, account setup, and questions, please email Clyde Carpenter at carpec2@rpi.edu.

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The Maryland Sheep Breeders Association exists to promote sheep, lamb, and wool in Maryland and the region, and to increase public knowledge of the healthful and useful qualities of sheep, lamb, and the many sheep & wool related products. MSBA seeks to enhance and encourage the knowledge, enjoyment, growth, and profitability of member shepherds by providing educational, networking and marketing opportunities through a range of events and activities.



3038 Brightwell Drive • Finksburg, MD 21048



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 <https://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).

Here are sponsored events and activities for 2026

- January 24-25: Maryland Sheep & Wool Festival Winterfest
- February 13-14: Beginning Shearing School
- May 2-3: Maryland Sheep & Wool Festival
- TBD: Annual Meeting & Dinner.

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, 2026, will be accepted as paid through September 30, 2026. Dues received on or after June 1 will be accepted as paid through September 30, 2027.

Membership application MARYLAND SHEEP BREEDERS ASSOCIATION

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 Kate Warner, Membership Chair, 5241 South Mill Street, Lineboro, MD 21102. She will contact you for additional information for the breeders directory and online profile.