

MOUNTAINS-TO-BAY GRAZING ALLIANCE



BOBBY WHITESCARVER

JANUARY 2019

Five Things I Have Learned as a Grazer

by Matt Bomgardner, Blue Mountain View Farm, Lebanon County Grazing Network

My farm has been grazing dairy cows for 19 years since my father first put up fences in 2000. Ten years after starting, I remember my father and I thought we knew how to graze and had little to learn. However, we were wrong, as our knowledge increased dramatically. I would say that the last nine years we learned more than those first ten years! However, I may have even learned too much and incorporated things into my operation that didn't fit my farm or management style. The following is a list of things I've learned as a grazer.

5. Use a systems approach to grazing.

Having gone to many grazing conferences, meetings, and pasture walks, one thing I see often is attendees wanting to fit grazing practices into their operation that don't fit their system.

A perfect example would be stage of maturity and species composition of pastures for grassfed dairy operations versus hybrid dairy operations, which feed grain in the barn.

Both operations need high-quality, high-energy grass, but grassfed operations need a more balanced pasture stand that isn't too high in protein or too digestible.

Hybrid operations, however, can balance higher protein and highly digestible grass with grain, corn silage, and stored feed.

Other examples would be operations limited in pasture or a high production system compared to a low input system.

Even high debt loads can dictate a system versus someone who has very little debt. Consider your whole system when looking to incorporate changes.

4. Grazing doesn't guarantee farming success. Grazing can help a farm reduce costs, improve animal health, and increase product marketability but in the end farm success depends on financial planning and execution.

'New paint disease' can affect many farmers, some of whom may not have the finances to afford new equipment. Furthermore, debt repayment is important in my book, but too much short-term debt can cause cash flow headaches.

Finding markets and companies that will remain loyal to you can also be a challenge these days as their profits are their priority.

Grazing success depends on financial management in addition to farming and pasture management.

3. Properly managed pastures don't need herbicide. There are a few extension agents that seem to feel that pastures need to be sprayed every year. I ask, "Why?"

Animals love to eat some weeds that can test better in quality than the intended forage they are grazing. However, not too many people want more weed seeds especially if they are from invasive plants or not useful for forage.

Proper grazing management with a focus on stand density, stage of maturity, diversity, and residue management will greatly reduce weed pressure.

Mowing either before turn-in or after a grazing event is a great option to control weeds. Waiting to mow at the proper times during the life cycle of the weed can prevent new seeds from dropping. Mowing will also help manage refusal areas where animals didn't eat, such as forage in head or manure patties.

2. Use an advisor. In the fall of 2011, 12 years after my dad starting grazing, I walked on the farm of Duane Hertzler who would become my grazing advisor. It was important to find a grazer who had a system similar to what I wanted to have.

Duane's experience helped my wife and I through the process of purchasing the farm from my parents. He also helped us do a much better job of grazing and managing the cows.

His son Neil started the transition to organic about a half year before me which allowed me to learn from his experience in the transition.

I have had other people come onto the farm and give me tidbits of wisdom, as I often run ideas past 3-4 different people. Sometimes it's the way an advisor says something that opens your eyes. I knew that orchardgrass grew best on my farm, but it took Dave Hunsberger to

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ask, "What is your farm? An orchardgrass or a ryegrass farm?" That's all I needed.

1. The importance of rest. Dairy grazer Andy Kline paraphrases Ian Mitchell-Innes saying, "Rest is a matter of time." Rest as in time on the paddock and time off.

Previously we would clip our pastures after the cows left the paddock, possibly 3-5 days after grazing. We also at times followed the milking herd with the heifers and dry cows a few days later thinking if we didn't graze

residue, we would lose it. However, in both cases we were clipping off new growth by grazing too long. I have seen grass grow an inch within 24 hours after grazing.

We now do not follow the cows with the heifers and instead give the heifers their own paddock rotation. Furthermore, if pastures need clipping, we either clip as soon as possible after grazing or pre-clip ahead of the cows and let them eat the freshly mowed 'hay.'

Grazing can be challenging especially in these times of low dairy and beef prices. Considering how your grazing and financial

management affects your system is a step towards securing the future of your farm.

Finding consultants and advisors who are like-minded and have your best interests in mind will keep you on the right track. Then it comes down to execution and adapting to on farm challenges and market changes. Happy Grazing!

Matt Bomgardner was also one of the "case study farms," a key component of this NRCS grant. We estimated the environmental and economic benefits of his farm transitioning to rotational grazing. Keep an eye out for the results in upcoming issues!

Now is the Time to Evaluate Your Winter Feeding Program

by Matt Booher, Virginia Cooperative Extension

Now is a good time to evaluate your winter feeding program. Do you know how well your hay matches the nutritional needs of your flock or herd? If supplementation is required, do you know how to select the most economical supplement and how much of it to feed?

We recently reviewed current feed prices and offerings in our part of Virginia and would like to provide a couple tips to help you develop your winter feeding plan.

In our part of the world, most first and second cutting hay is usually adequate in protein. The exception to this rule could occur when feeding growing lambs or calves.

The energy content of hay is typically much more limiting. First cutting hay, especially, is often deficient in energy for many classes of livestock. Factor in extreme cold and wind, and energy supplementation becomes critical to keep animals in good body condition through winter and into calving or lambing.

The first step in creating a winter feeding plan is to test your hay. Virginia Cooperative Extension can assist you with this or your local farm supply store can likely send off a sample for you as well.

A hay analysis will tell you the energy, protein, and mineral content of your hay. From this, you can calculate the pounds per head per day of any nutrient that may need to be supplemented.

When comparing any supplement, it is useful to compare products based on their cost per unit of nutrient. For example a blended stock



feed may be the same price per pound of feed as a byproduct feed such as distiller's grains.

However, comparing the two on a cost per pound of energy basis might show 3 cents per pound difference in the cost of energy. How does this play out in a real world scenario?

Let's assume a 1,300-pound beef cow on a diet of average first cutting hay is deficient in about two pounds of energy. You've done your research and choose distiller's grains over the blended stock feed. You would save about \$0.06 per head per day. Not much, right? In a month's time, however, that is \$1.80 per head. Over five months that is \$9 per head. If you have a herd of 100 cows, that is \$900 savings over the course of a winter.

Lately, feed prices have been pretty flat. Currently, grains such as corn or barley are within a cent or two in cost per pound of energy as many of our byproduct feeds such as corn distiller's grains, wheat midds, and corn gluten. This is in contrast to several years ago when byproducts were significantly cheaper.

There is one other thing to consider, however,

when making your decision. Whole grains such as corn and barley contain much of their energy in the form of starch. When fed to livestock on a primarily forage diet, the starch can suppress fiber-digestion in the rumen.

Byproducts, on the other hand, are a fiber-based energy source. This can make a noticeable difference in animals' utilization of hay or pasture. Incidentally, byproducts like corn distiller's grains, wheat midds, and corn gluten are also excellent sources of economical protein. They are currently around 50-70 cents per pound of protein.

Liquid molasses is commonly under 40 cents per unit protein and, therefore, a very economical and convenient source as well. But it must be remembered that molasses is not a significant energy source when you factor in consumption rates.

Likewise, protein blocks may be a good source of protein, but they are a poor way to provide energy to livestock. Also keep in mind that while protein blocks are very convenient, they are one of the most expensive ways to provide supplemental protein.

One last point to make is that the cheapest and best way to provide nutrition is through extending the grazing season.

Tried and true strategies like fall stockpiling can add months to your grazing, but they do require advanced planning. Stockpiled pasture almost never requires supplemental energy or protein, and statewide research and demonstrations have shown cost savings of well over \$1 per head per day versus feeding hay.

What is the Cost of Winter and Early Spring Grazing?

by Matt Booher, Virginia Cooperative Extension

Every year as grasses begin greening up, thousands of cattle producers across Virginia breathe a tired sigh of relief as they stop feeding hay.

To look across the pasture and see grass blades stretching upward and every head down grazing certainly feels like cattle and pasture are good-to-go.

However, there is a cost to both the animal and the plant by putting away the hay and turning cattle out to graze in the early stages of pasture growth.

From an animal standpoint, adequate dry matter intake is hard to come by in early spring. I'm not just referring to the fact that spring grass is about 90% water, although that is part of it.

"Dry matter intake" refers to the pounds of feed (adjusted for moisture) that an animal must consume daily. One issue with early spring pasture is that there is just not much dry matter available. A pasture with four-inch tall grass would only yield a little over 100 pounds of dry matter per acre.

A mature cow would need to harvest every square inch on a third of an acre to meet her dry matter requirements, which brings up a second issue.

Cattle graze by wrapping their tongue around a clump of forage and tearing it off—they cannot bite off grass very well and are inefficient at grazing closely.

Cattle harvest most efficiently when pasture is around eight inches tall, but very ineffectively when grass is four inches tall.

So, despite the fact that the nutrition of new spring grass is through the roof, and despite the fact that they have their heads to the ground twelve hours a day, they are still unable to meet their daily nutrient requirements.

Add to this the high-moisture content of early spring grass and cattle find themselves in a situation where they could actually be losing body condition on pasture. This would be especially bad for cows nursing young calves and trying to return to estrus.



A better course would be to continue feeding hay on a sacrifice pasture until grass is at least six inches tall. At this point livestock can graze more efficiently and availability of forage will remain high enough to meet dry matter requirements.

From a plant standpoint, the date of spring turnout can have a major effect on subsequent pasture growth and yield.

A recent study by Tom Griggs at West Virginia University looked at this and found that delaying turnout until pasture growth reached seven or eight inches significantly improved total season pasture yield by 1,600 pounds per acre over turnout onto four- or five-inch pasture.

The reason is simple. Defoliation before plants have adequate leaf area not only further reduces photosynthetic potential, but also forces plants to regrow using stored carbohydrates.

Some of you may be thinking, "I understand this, but I'm willing give up a little yield on a few acres in order to get some important grazing in early spring." As outlined previously, you should consider the actual value of this early season grazing.

You may also want to consider the ways in which the yield you would forfeit could otherwise be used to extend grazing in the fall.

Postponing grazing a week in the springtime could buy you anywhere from two weeks to one month of grazing in the fall. That is more than worth the extra hay it will take to contain and feed livestock longer in early spring.

Some people have questioned whether intensive strip grazing of stockpiled pasture in fall and winter has any effect on the following season's yield.

The study by West Virginia University also looked at this and found that grazing dormant stockpiled pastures did have an effect on the next year's yield, though probably not in the way you think.

Researchers found that stockpiled pasture grazed closely during winter responded with significantly higher yields the following spring than did pastures grazed more moderately.

This spring yield bump for the close-grazed pastures carried through the season to result in a significant total yield increase of 900 pounds per acre. Why?

Intensive winter grazing of stockpiled pasture occurs following a long growth and recovery period for the pasture, so plants are at full strength going into winter. Strip-grazing of it then results in a uniform covering with manure nutrients, and removes old leaves and residue that might hinder photosynthesis the following spring.

New Grant Funding for the Mountains-to-Bay Grazing Alliance: Let's Keep the Momentum Going!

By Jenna Schueler, Chesapeake Bay Foundation

Funding from a USDA Conservation Innovation Grant in 2015 supported the creation and growth of the successful Mountains-to-Bay (M2B) Grazing Alliance, bringing together state-based groups promoting rotational grazing in Maryland, Pennsylvania, and Virginia.

The success of this alliance is shown by the recipients reached with each of these quarterly newsletters, educational pasture walks, grazing schools, and the conversion of more than 900 acres to rotational grazing by project partners since the project's inception!

While the accomplishments of the M2B Alliance are considerable, there is still more work to be done. Collectively, the Chesapeake Bay watershed states have committed to implement rotational grazing on roughly 1.2 million acres of farmland as part of their Chesapeake Bay clean-up plans. Since 2009, approximately 50% has been accomplished.

The strengthening and expansion of this partnership will be critical to reaching the target by 2025.

Now, thanks to a generous grant from the National Fish and Wildlife Foundation to the Chesapeake Bay Foundation (CBF), the partnership will be taken to new heights, by implementing three core objectives:

1. Strengthening the structure and information sharing of the M2B partnership.
2. Expanding and enhancing outreach efforts promoting rotational grazing and soil health.
3. Working with approximately 30 producers to convert 1,700 acres to rotational grazing, as well as implementing related practices such as stream livestock exclusion (140,000 linear feet), stream crossings, off-stream watering (including four solar-powered portable watering units), and forested buffers (175 acres).

The project will better define and solidify existing relationships with the Virginia Forage and Grassland Council, the Maryland

Graziers versus Grazers: Which is it?

You may have noticed that we can be a little inconsistent in the newsletter when using the term grazier/grazer. Well, not to air CBF's dirty laundry, but this is a symptom of the fact, that CBF's Maryland and Virginia offices, true to their northern versus southern cultures, cannot agree to the same term.

The Maryland office helped launch the Maryland Grazers Network circa 2006. Several years later, our Virginia office received a grant to start a similar initiative in Virginia and when a certain someone (who is now editing this newsletter) looked up the term in the dictionary, it was spelled graziers, not grazers....and here we are. What do you all think? Maybe we should take a poll of newsletter recipients?

Grazers' Network, the Capital Resource Conservation and Development Area Council (in Pennsylvania), Future Harvest-Chesapeake Alliance for Sustainable Agriculture, and Natural Resources Conservation Service, and expand to include new partners such as Pennsylvania Grazing Lands Coalition, Pennsylvania Association for Sustainable Agriculture, Penn State University, Virginia Cooperative Extension, Virginia Department of Forestry, and the Maryland-Delaware Forage Council.

A M2B Steering Committee, coordinated by CBF, will be created, composed of partners from each of the collaborating states.

The Steering Committee will be critical in growing and strengthening the structure of the M2B Alliance by meeting regularly to discuss vision, roles, and responsibilities, and assess progress towards grant and partnership goals.

In addition to more partners, and more structure, there will be more pollution reduction too! Conservation practices implemented from this project are projected to reduce nitrogen, phosphorus, and sediment end-of-stream loads by 82,324 pounds of nitrogen per year, 7,220 pounds of phosphorus per year, and 656 tons sediment per year.

The core area of our work will be in the southern tier of Pennsylvania counties (Lancaster, York, Adams, Cumberland, Lebanon, and Franklin counties), the northern tier of Maryland counties (Washington, Frederick, Carroll, Montgomery, and Baltimore), Virginia's Shenandoah Valley (Shenandoah, Rockingham, Augusta, Page, Rockbridge, Frederick, Clarke, and Warren) and the panhandle of West Virginia (Hardy, Pendleton, Hampshire, Morgan, Berkeley, and Jefferson).

We will be leveraging private, state, and federal dollars to incentivize participation and to offer greater flexibility in trying out and implementing grazing and associated practices, like stream fencing and forest buffers.

In addition, partners will seek to provide ongoing technical support for new graziers to maximize the likelihood of success by connecting them with experienced graziers.

If you are a producer and want to learn more about grazing and funding opportunities, please see the contact information below for M2B partners in your state.

Information sharing and outreach will be enhanced and expanded through partner webinars, presentations, workshops, field days, and the creation of an M2B web page as a clearinghouse for information. Be on the lookout for upcoming outreach events and new resources!

To learn more, please contact:

In Maryland: Michael Heller, CBF, at mheller@cbf.org, or Jeff Semler, Washington County Extension, at jsemler@umd.edu.

In Pennsylvania: Susan Richards, Capital RC&D, at srichards@capitalrcd.org, or Kelly O'Neill, CBF, at koneill@cbf.org.

In Virginia: Matt Booher, Virginia Cooperative Extension, mrb260@vt.edu, or Alston Horn, CBF, at ahorn@cbf.org.

For overall questions about the project, please contact Beth McGee at bmcgee@cbf.org.

Assessing Market Access for Sustainably-Produced Beef

By Kristen Markley, Health Care Without Harm and Jessica Palmer, Piedmont Environmental Council

Beef produced through grass-fed or regenerative grazing practices can be a systemic solution with benefits for human health, animal welfare, the environment, and farm profitability.

The Virginia Piedmont is well suited for grazing operations and is home to many small and mid-scale beef farms. For decades, the Piedmont Environmental Council (PEC) has worked closely with producers to support a transition to sustainable and cost-effective grazing practices.

Over the next year, Health Care Without Harm and PEC will be working together on a project to assess market access for sustainably produced Virginia Piedmont beef.

To get started, Health Care Without Harm will conduct an assessment of the institutional demand for the product. The assessment will focus on the collection of information from hospitals, colleges, and universities in Maryland, Washington D.C., Virginia, and West Virginia.

Meanwhile, PEC will conduct a supply-side assessment to provide an in-depth look at current and potential beef-sector production and gauge farmer capacity for expansion and interest in selling to a captive wholesale market. The study will span the area from around Charlottesville to Loudoun County.

When paired together, the projects will highlight possibilities for institutional

purchasing programs and possibly provide a pathway to expand and support Piedmont beef sector businesses.

Health Care Without Harm seeks to transform health care worldwide so the sector reduces its environmental footprint and becomes a leader in the global movement for environmental health and justice.

Health Care Without Harm's *Healthy Food in Health Care* program harnesses the purchasing power and expertise of the health care sector to redefine hospital food, activate its potential to heal people and communities, and adopt practices and policies to support a healthy, sustainable food system.

Building a food system that provides more income for local producers and helps preserve and expand working farmland is a critical mission-based goal for PEC.

The council established Virginia's first *Buy Fresh Buy Local* chapter to enhance the marketing of food produced by local farms and has built a network of local livestock producers.

The council has gained insight into the Piedmont's agricultural economy, revealing the challenges that livestock producers face such as a consistent and fairly-priced market for their product.

Hospitals are positioned to drive market demand through the health care sector. They

can serve as long-term, reliable partners for regional producers that are utilizing regenerative and grass-fed production methods.

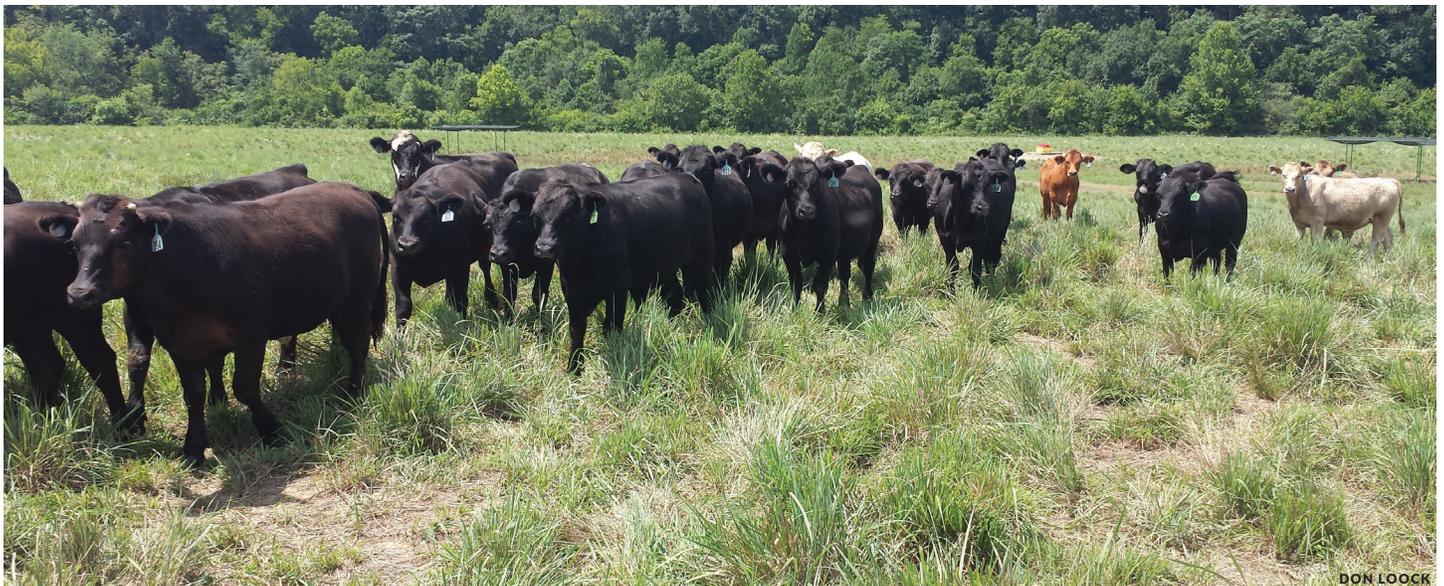
The development of these relationships will support additional farmers looking to transition to sustainable practices and enhance the viability of farmers in the region.

Hospitals are realizing that support for sustainable grazing practices will maintain working farmland, improve air quality, and increase access to a healthier protein option for the people they serve.

A network of 100 hospitals in the Mid-Atlantic region (New Jersey through Virginia), alongside Health Care Without Harm's national network of 1,100 hospitals have demonstrated a commitment to sustainable food systems and in particular the need to improve animal agricultural systems.

Through clear aggregated demand, hospitals in the Health Care Without Harm network have prompted a swift transition in the accessibility and affordability of meat raised without routine antibiotics. The network is now primed to further its support of sustainable production systems by supporting grass-fed and regenerative approaches to raising meat.

Bringing the supply and demand together can create an environment that will foster healthier people and a healthier planet.



DON LOCK

Grant Funds Awarded for On-Farm Soil Health Research in Maryland

By Jenna Schueler, Chesapeake Bay Foundation

Chesapeake Bay Foundation (CBF) is exploring a novel approach to increasing soil ecosystem health under a newly awarded Conservation Innovation Grant from the Maryland Natural Resource Conservation Service (NRCS).

This project was inspired by farmers from the Maryland Grazers Network (MGN) who, despite implementing rotational grazing, a practice known to promote healthy soils, were concerned about the health of their pastures.

After attending a soil health workshop in November 2017 led by soil ecologist, Nicole Masters (Integrity Soils), a group of farmers from the MGN decided they wanted to see if the addition of certain soil amendments could help stimulate the soil biology on their farms. We decided to take the opportunity to try to provide a scientific evaluation of the approach.

The amendments include various mixtures including, but not limited to, fulvic acid, humic acid, hydrolyzed fish, lime, and molasses. These amendments are designed to kick-start the soil microbiome and improve soil health in the short term (one or two seasons) compared to the conventional approaches of slowly building the ecosystem through long-term (10-15 year) use of practices like cover crops and no-till, or through grazing.

In addition, there is anecdotal information that in some cases, these agronomic practices are not sufficient to create healthy soil ecosystems that contain the proper balance of bacteria, fungi, protozoa, and beneficial



nematodes that allows crops and pastures to resist harmful pests and take up nutrients for optimal production with minimal inputs.

CBF is working with grant partners Nicole Masters, University of Maryland Professor Dr. Ray Weil, Maryland Extension Agent Jeff Semler, and up to eight farmers (a mix of grazers and grain producers) to evaluate the effectiveness of these treatments.

Farms participating in the study will apply soil amendment mixtures recommended by Integrity Soils on their pastures and fields. We will be collecting and analyzing soil and plant samples on both treated and untreated plots at the beginning and end of the study period to evaluate statistical changes due to the amendments.

One of the innovative aspects of this project is that in addition to soil health and crop/forage quality, we are also measuring aspects of the soil microbiome (i.e., relative amounts of fungi, protists, nematodes species)

In addition to evaluating measurable benefits through on-farm research, CBF will organize annual roundtables of participating farmers so they can share experiences, observations, and lessons learned from using the amendments. We will look to share these insights and any preliminary results in upcoming issues of the Mountains-to-Bay Grazing Alliance Newsletter, so stay tuned!

For more information, please contact Michael Heller (mheller@cbf.org) or Beth McGee (bmcgee@cbf.org).



Growing Our Future Harvest Conference to Feature Grazing Track

Future Harvest CASA is hosting its 20th Anniversary Conference this January and it features a track for graziers! The *Growing our Future Harvest* Conference will take place January 17-19 at the College Park Marriott in Hyattsville, Maryland.

Sessions on Friday, January 18 include:

Benefits and Shortcomings of Different Grazing Systems

Every farm is different and choosing the right grazing system means evaluating your land, animals, time, and more. Join Doug Peterson, Missouri beef farmer and NRCS Grazing Specialist, for an overview of the spectrum of grazing systems, from continuous, to rotational, Management Intensive, New Zealand style, and Holistic High Density (MOB).

Wether or Not and Winning Against Worms

Wondering whether or not to wether? Intact males grow faster and produce leaner carcasses than castrated males, but they can cause unwanted pregnancies. A new technique called 'short-scrotum' produces males that may provide the advantages of both. Join Susan Schoenian, internationally renowned University of Maryland Sheep and Goat Specialist and sheep farmer in Clear Spring, Maryland, to learn more about this humane castration system and determine if it's a suitable option for your farm. Peeved by

your parasites? Gastro-intestinal parasites (worms and coccidia) are the primary health problem affecting sheep and goats. Successful internal parasite control usually requires a holistic or integrated approach that combines management options (mostly) with targeted use of dewormers (less is better). What are the newest strategies for controlling internal parasites in small ruminants? And could a fungus be a new option to consider?

Pasture Management Dos and Don'ts

Sustainable farms need to be financially viable, and there's good news—improving soil health can improve your bottom line. Join Doug Peterson for an exploration of how best management practices can be both environmentally and economically beneficial.

Sessions on Saturday, January 19 include:

Stretching the Season with Small Grains and Filling the Summer Slump

Come learn how to stretch the season with alternative forages. Join the University of Maryland's new Forage Specialist, Amanda Grev, for a presentation on forages for all seasons, including the height of summer.

Farmer-to-Farmer Grazing Roundtable

Bring your questions and ideas to a lively discussion facilitated by Jeff Semler, Maryland beef farmer and Washington County Extension Grazing Specialist. Experienced

farmers will discuss their operations and answer questions from the audience about anything and everything to do with grazing. Learn how these farmers manage their operations, organize their pastures, and choose forage. Expect this session to focus on ruminants, though poultry and swine producers are welcome.

Grass Power and Climate Change

Curious about how rotational grazing can sequester carbon and why it is so important to climate, health, and efficiency? Join Martha Holdridge of Grasspower and West Wind Farm for a presentation on how her daily rotational grazing methods yielded increased soil organic matter (SOM) on her West Virginia farm. Her system was analyzed by S. DelGrosso of USDA/ARS to show carbon sequestration and net greenhouse gas reduction. Next, she was guided by Dr. Ed Rayburn of West Virginia University to appreciate the extreme differences in CO2 emissions between conventional/feedlot beef production and grassfed beef production. Finally she will cite the many health benefits from eating grassfed meats and the potential for lowering medical costs.

Registration fees range in price depending on what sessions you attend and whether or not you are a Future Harvest CASA member. Please visit Future Harvest CASA's website at futureharvestcasa.org for more information.

Mountains-to-Bay Grazing Alliance Partnership



MARYLAND EVENTS

Growing Our Future Harvest: 20th Anniversary Conference

January 17-19

College Park Marriott Hotel
3501 University Boulevard East
Hyattsville

The region's premier farm and food gathering is celebrating 20 years! Join Future Harvest CASA for deep-dive workshops (including a track on grazing), farm fresh meals, inspiring speakers, and farmer learning and networking. For more information, visit [Future Harvest CASA's website](#).

REGIONAL EVENTS

Regional Grazing Conference

Thursday, February 21, 2019
Washington County Agriculture Education Center
7313 Sharpsburg Pike
Boonsboro, MD

The Mountains-to-Bay Grazing Alliance is pleased to present Jim Gerrish at our regional conference. Jim's experience includes more than 20 years of commercial cattle and sheep production on his family farm in northern Missouri. The University of Missouri Forage Systems Research Center rose to national prominence as a result of his research leadership. Jim's research encompassed many aspects of plant-soil-animal interactions and provides a foundation for many of the basic principles of management-intensive grazing. Registration costs \$15 and includes lunch. To register, visit goo.gl/pMJ9sG.

PENNSYLVANIA EVENTS

Dairy Grazing Management Webinar Series

Wednesday, January 16
Wednesday, February 20
1:00-2:00 p.m.

Designed for dairy producers, their employees, and advisors, these webinars hosted by PennState Extension include presentations on topics important to the management of the dairy farm. January's webinar features Michigan State's Howard Straub discussing grazing management in robotic milking herds. February's webinar features Michigan State's Brook Wilke discussing integrating annuals into a grazing system. Visit PennState Extension's website at extension.psu.edu to register.

Franklin County Graziers 2019 Winter Meeting

Thursday, January 17
9:30 a.m. - 12:30 p.m.
Chambersburg Mennonite Church
1800 Philadelphia Avenue
Chambersburg

Hear first about the value of tall grass grazing from Tim Elder, NRCS Grazing Specialist, who does tall grass grazing of cool and warm season grass along with some summer annuals on his small beef farm. Next, hear from Russ Wilson of Wilson Land & Cattle about improving soil and profitability by grazing. Russ operates a 220-acre farm, raising cattle and mules. He employs adaptive management techniques to make the farm more profitable. Registration costs \$10 and includes a hot lunch. Contact Titus Martin, Franklin County Graziers Coordinator, at tilinmartin@embarqmail.com for more information.

VIRGINIA EVENTS

2019 Winter Forages Conferences

Tuesday, January 15
Wytheville Meeting Center
Wytheville

Wednesday, January 16
Southern Piedmont Research Station
Blackstone

Thursday, January 17
Brandy Station Fire Department
Brandy Station

Friday, January 18
Weyers Cave Community Center
Weyers Cave
Join Virginia Forage and Grassland Council, Virginia Cooperative Extension, and NRCS for their annual winter meetings. Speakers include Dr. Pat Keyer, Professor and Director for the Center for Native Grasslands Management, and Dr. Matt Poore from North Carolina State. This year's theme is: Alternative Forages for Grazing Systems: Unlocking Your Farms Production Potential. Registration costs \$35. To Sign-up, visit vaforages.org.

Deep in Grazing Management

Wednesday, February 6
Wednesday, February 13
Wednesday, February 20
6:00 p.m. - 8:30 p.m.
Strasburg Community Center
726 East Queen Street, Strasburg
This three-night series will help you better understand grazing management. Registration costs \$30 and includes a light dinner each night. Call the Shenandoah County Office of Virginia Cooperative Extension at (540) 459-6140 to sign up.

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*Interested in past editions of the Mountains-to-Bay Grazing Alliance newsletters?
Visit www.futureharvestcasa.org/resources to read all of them!*