

MOUNTAINS-TO-BAY GRAZING ALLIANCE



News & Notes from the Mountains-to-Bay Grazing Alliance

October 2016

Water for Livestock

by Tamara Scully

Summer weather is hot. What's a better way to cool down than to wade in the stream or jump in the pond? Just like people, cattle are inclined to access water sources on hot days. And just like people, this loitering around the watering hole can often decrease their productivity. After all, who wants to stand around and do the work of grazing when a nice cool dip in the pool with friends is on tap?

"The opportunity to get out from a pond or get out from a stream really equals improved animal health, or improved production, for your system," Dr. Eve Brantley, Auburn University, Department of Crop, Soil, and Environmental Sciences, said. "We don't want them loafing around. It's not good ... to be loitering in stagnant water."

Getting animals out of watering holes and back onto pastures means more feed intake. And lush pasture forages can offset some of the animals' water intake needs, too. Truly healthy pasture forages can be up to 80 percent moisture. Dry feeds and hay, however, are about 10 percent moisture.

"Water is such an important component of every part of what we do. We have to have water for ample food digestion; to regulate our metabolism," Dr. Brantley said in a recent webinar. "That relationship, again, between forage quality and clean water, is real."

Getting your livestock out of the water isn't only good for productivity: it's imperative for maintaining clean water quality.

Clean water

Clean drinking water is essential for livestock, and assessing and meeting this need will keep your herd in top shape.

When the water supply is high-quality, livestock drink more and in turn will show increases in average daily gain (ADG), Dr. Brantley said. In a 2002 study involving calves, animals whose mothers had been given access to better quality drinking water via a trough gained nine percent more weight than those whose mothers drank from a pond. Reproductive rates, milk production, and disease resistance were also positively impacted when water was clean.

Another study, from the University of Florida, demonstrated that young heifers were shown to increase weight gain by 23 percent when they were provided clean drinking water from a trough instead of a pond.

Disease-causing micro-organisms thrive in nutrient-laden waters. So ponds or streams, where the water quality is impacted by nutrient runoff from farm fields and residential lawns, can easily have water quality issues.

When drinking from a pond or

stream, the animals themselves are contributing to water quality issues by depositing nutrients into the water. Ponds and streams also tend to become stagnant in late summer, and cyanobacteria—also known as blue-green algae—begin to make an appearance.

Some cyanobacteria can produce toxins. In hot, dry weather, the number of algae increases. Winds can congregate the algae in certain areas of the pond, which need to be avoided due to the concentration of algae and the increased potential for toxicity.

Chelated copper compounds are more effective and safer to use to treat existing algae concerns than copper sulfate, Dr. Brantley said. Copper sulfates are toxic to fish and to applicators, too.

Even if a pond or a stream does serve as the source of water for livestock, it is best to pump the water to the animals and restrict their direct access to the water source, limiting nutrient contamination.

Pumping water from below the surface also avoids the concern of toxicity from algae, which live on the water's surface.

Establishing vegetative buffers will help to filter runoff and allow plants to use the nutrients. Plants shade water, keeping temperatures cooler, another important factor for drinking water.

Although cattle have been shown to drink water when it is at a temperature as high as 105 degrees Fahrenheit, they much prefer when the water temperature is between 40 and 65 degrees, she said. When water is cool, steers show ADG increases of 0.3-0.4 pounds, compared to when they have access to warmer water. Animals prefer to drink cool water, so will drink more of it.

Water volume

For healthy, productive herds, an adequate supply of clean water is essential. Clean, cool, and readily accessible water available in enough quantity will keep production up and animals healthy. Water is needed to process fibrous, dry food and move it through the gastrointestinal system. The more water the livestock drink, the more feed they can consume, resulting in an increase in ADG. "An adequate supply of drinking water really improves our production," Dr. Brantley said.

The amount of water needed varies by species, by breed, by life cycle stage, by size, and also depends upon the weather—both temperature and humidity. High humidity will increase the need for water.

When the mercury rises, animals need to drink more water. In 50 degree weather, cattle will consume eight to 12 gallons per day. At 95 degrees, that need increases to 20-30 gallons. Equine show similar consumption needs, dramatically increasing water intake on hot days. Small ruminants



Animals whose mothers had been given access to better quality drinking water via a trough gained more weight than those whose mothers drank from a pond.

are not as impacted by hot weather, naturally consuming two or three gallons of water per day in cooler temperatures, but only needing to increase their water intake by another gallon for those really hot days.

A rule of thumb is to provide a minimum of one gallon of water per pound of dry matter consumed, Dr. Brantley said. Lactating animals and young animals will comparatively need more water during this life stage. Diets with increased salt or protein will require more water intake to offset the dehydrating effect.

Water testing

Ponds and streams are at their worst quality-wise in late summer, when hot weather promotes algae blooms, water stagnates, and nutrient content accumulates. When testing water, take representative samples from the areas where the animals are drinking, she said.

Well water is more consistent. It's very important that wells are properly

sited—at least 200 feet away from potential sources of contamination—and capped.

Odors or poor tasting water will cause livestock to decrease intake.

Salinity of the water, no matter its source, is an important factor in its quality. Total dissolved solids are optimally at the 1,000 parts per million (ppm) level, although up to 10,000 ppm is acceptable for livestock use. Electrolytes present in water—such as magnesium, sodium, calcium and chloride—as well as minerals or other compounds—such as iron, manganese, nitrates, and hydrogen sulfite—can be toxic on their own. They can also become toxic when ingested in certain combinations, or when added to the amounts already ingested in feed.

Excess nitrates can be fatal, causing the blood to lose the ability to bind oxygen. While the ppm for human consumption is much lower, livestock can tolerate up to 300 ppm of nitrates, Dr. Brantley said.

Controlling access to waterways; testing water sources; incorporating lush forages in the diet; and providing animals and water sources with shade, keeping them cool will all decrease health concerns both in the herd and on the land. Keeping cool, clean sources of water readily accessible is the first step in to avoid watering down your productivity.

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Incorporating Grazing into the Family Dairy

by Matt Bomgardner, Lebanon County, Pennsylvania dairy grazer and member of the Pennsylvania Grazing Coalition

Today's dairy economy has become extremely volatile. For the family dairy, some believe the only option is "get bigger or get out." I, however, have a different option Grazing!

Hybrid Grazing

Hybrid grazing mixes confinement dairying with grazing. A total mixed ration (TMR) is used to complement

the pasture. For the family dairy, hybrid grazing utilizes the existing facilities, with only fences, lanes, and waterways to add. Adding 15 pounds dry matter (DM) of grass from grazing, can reduce feed costs around \$2.00 per cow per day while still maintaining production over 21,000 pounds with a high forage TMR ration. The cows have improved foot health and overall health leading

to longer, more productive lives. Electricity use is lower because cows are outside, reducing lights and fan usage. And obviously, when cows are outside, bedding use and manure handling are lessened or eliminated. While management requirements often increase when managed grazing is added, many farms see a reduction in labor since field work and cow husbandry are lessened.

There should be caution, however, as poorly managed hybrid grazing operations can lead to problems such as poor body condition scores (BCS). Low BCS can lead to poor foot health, poor reproductive performance, and reduced milk production. I feel that lower milk production can be profitable, but it isn't profitable when you are feeding too much and not getting the milk you should be getting.

Getting Started

Grazing is both an art and science. Visiting a local grazer is the best way to learn. You'll see their grasses and legumes, height when cows start, when they pull the cows out, and stocking rate. You can ask about their production, ideal type of cow, and how they breed for that cow. You'll see the paddock layout, lane system, and watering system. You'll also be able to get sound advice on making the conversion to grazing. Remember that many grazers weren't grazing 20 years ago! You can also get help from Extension, Conservation District, and NRCS offices.

To start hybrid grazing, I recommend aiming for at least 15 DM pounds from pasture per cow each day. This is a good start for a beginning grazer because neither the farmer nor cow know how to graze. Be sure to slowly introduce pasture over a two-week period as they adapt to the new feed.

While it seems daunting trying to figure out how much the cows are grazing, it can be made easy. You know how much each cow eats in the barn. As you reduce your TMR you can then assume the cows are eating the difference in the pasture. Adjust access to pasture and TMR so they are eating the desired amounts that your ration calls for. Decreases in milk and/or BCS will alert you to lower than intended pasture intake.

Pasture Management

Pasture management revolves around

rest through rotation. Most grazers use temporary wires to move the cows through each paddock. Movements usually occur at least twice a day to give cows enough fresh grass to fill them up, but not so much that good grass is left behind. Back fences keep cows from going back to nibble regrowth, which can begin within 24 hours after being eaten. Removing the new growth reduces energy reserves, diminishing yield later. The number of days a pasture should rest until the next grazing can range from as low as 14 days in spring to over 45 days in summer, depending on growth. One of the hardest lessons for a grazer to learn is to pull the cows off of grass if it isn't ready to graze. It's better to feed 100 percent in the barn than to ruin good stands of pasture by overgrazing.



The next concept of pasture management is height/maturity at turn in. Grazers around the world have differing opinions on the subject. Some, like the New Zealand model, graze shorter for higher quality forage. Others graze taller for longer lasting stands and increased soil health through grazing management. The latter usually graze a larger portion of the diet and want a lower protein, higher fibrous grass.

I feel that a confinement farmer moving to grazing should be somewhere in the middle. The TMR will help balance highly digestible, high protein pasture to maintain milk production and a stand in the 10-14 inch range provides a denser sward to maximize each bite, which helps increase intake. Be sure to leave at least four inches of post grazing residue to ensure regrowth.

The grass

Except for the New Zealand model grazers, most grazers have a diverse mix of grasses and legumes. Ryegrass is usually the best grass for milk but it doesn't grow well during drought or hot weather. Orchardgrass does better than ryegrass in hot and dry weather but doesn't have ryegrass quality. Therefore, many grazers have both in their mix along with other grass species.

Clover is in nearly all of the pastures. Studies show that clover can add five pounds of milk. The white clovers with their spreading stolons can fill in bare spots of the pasture. Red clover will yield more than the white clovers and does better in hot, dry weather, thanks to its deep tap root. However, red clover is usually a biennial and will die out over two years or so unless it is allowed to reseed. Be certain to talk about species with your local grazers because regional differences in climate make a big difference on which species are used!

Conclusion

The modern family dairy does have an alternative option to dairy profits. Hybrid grazing reduces costs while maintaining production and promoting cow longevity for better profit. The lifestyle of the family dairy farmer improves when fetching cows with children or viewing cows on grass during the day and evening. The visual aspect of the farmstead improves with cows on green grass. Hybrid grazing opens the door to future possibilities of niche markets like organic and/or grassfed.

Grazing isn't as simple as putting cows on grass and walking away. It takes forethought and good management to be profitable and maintain good stands of productive grass. Grazing has no cookie-cutter way of doing things; it's all about making grazing work for you!

Happy Grazing!

Sustainable Dairy Cropping Systems Designed to Produce Forage, Feed, and Fuel

by Heather Karsten, Penn State

To enhance dairy farm sustainability in Pennsylvania and the Northeastern United States, a Penn State University team has been evaluating two diverse, six-year no-till crop rotations designed to produce all the feed and forage for a typical-sized Pennsylvania dairy farm.

While not focused on grazing systems, some results from their studies should interest grazers. The scientists compared enhanced conservation practices for manure or weed and insect management to typical no-till Pennsylvania cropping practices. Using the crop yield and quality results of each year and a dairy nutrition computer model, they simulated milk production and compared the whole farm performance of two cropping scenarios.

Results are encouraging, with strategies that are proving to be profitable. Manure injection conserved more nutrients, required an average of 33 percent less inorganic nitrogen fertilizer, and maintained similar crop yields.

The reduced herbicide practices controlled weeds and maintained crop yield and quality similarly to the

standard herbicide system in most crops in most years, and integrated pest management was successful in maintaining yield while reducing insect control costs.

Indicators of soil health were higher or similar in the diversified rotations, relative to the corn-soybean rotations.

By combining conservation strategies, this project demonstrates that it is possible to reduce nutrient imports and losses to the environment leading to water pollution, while maintaining farm profitability.

Having completed six years of the rotations, the research team is evaluating how the enhanced conservation practices have affected soil quality, nutrient dynamics, and weed and insect populations, and how the rotations perform in additional years of fluctuating weather, pest, and market dynamics. In addition, they will substitute oats for triticale as an alfalfa companion crop in the pest rotation.

Finally, they are seeking commercial farms interested in on-farm evaluations of:

(1) managing for whole farm feed production, environmental protection, and farm profitability with fall manure applications to double-cropped winter annual forages;

(2) diversifying weed control practices for herbicide-resistant weeds;

(3) the use of integrated pest management and conservation of insect biodiversity to control pests;

(4) conservation practices for soil quality and cropping system performance.

For more information, see <http://plantscience.psu.edu/research/areas/crop-ecology-and-management/cropping-systems> or contact Dr. Heather Karsten at hdk3@psu.edu or 814-863-3179.

Team members include Heather Karsten, MaryAnn Bruns, Timothy Beck, Douglas Beegle, William Curran, Curtis Dell, Lisa Holden, Ronald Hoover, Virginia Ishler, Peter Kleinman, Roger Koide, Emad Jahanzad, Glenna Malcolm, Tom Richard, John Tooker, as well as many graduate students and technicians.

Update from Future Harvest CASA

Thanks to two recent USDA grants and support from the Town Creek Foundation and Chesapeake Bay Trust, Future Harvest CASA will offer expanded new farmer training opportunities, help existing grass-fed operations, and connect farmers and grazers with new customers.

Work is underway to expand and update the Amazing Grazing directory with an online interactive map and an exciting outreach campaign to increase sales and consumption of grassfed meat, including exploring the idea of creating an Amazing

Grazing Grassfed Meat Trail similar to wine or ice cream trails.

We are also greatly expanding the Future Harvest CASA Beginning Farmer Training Program with UMD Extension and other partners, offering three levels of training, including a grassfed livestock production continuing education program throughout the region.

Finally, our 18th annual Cultivate the Foodshed Conference in College Park January 12-14, will feature a six-session

grazing track including speakers on a goat farm to food truck operation and latest research on pasture management.

Please contact Shannon Varley at futureharvestcasa@gmail.org to find out how you can be involved in any of our grazing activities.

We always welcome input from Mountains-to-Bay Grazing Alliance members on how we can help you connect with new consumers and any educational events you would like to see in the future.

Graze 300

If you live in or near Virginia's Northern Shenandoah Valley and are interested in joining a local group of farmers that want to maximize the use of their pastures,

then Graze 300 VA might be for you. Led by Ag Extension agents, Soil and Water Conservation Districts, NRCS, and CBF are teaming together to help farmers try

to graze for 300 days a year (or more!) on their pastures. To learn more, please visit Virginia Cooperative Extension's Graze 300 website by clicking here.

Maryland Events

BAY AND BOTTOM-LINE FARMING

Wednesday, October 19

3:30-6:30 p.m.

Rigdon Farm, Jarrettsville, MD

Learn how to conserve natural habitats and improve stream water quality on your farm without breaking the bank. John Rigdon is an 11th generation conventional grain and grass-based cow-calf farmer who protects his streams and wildlife. He found that his water quality improvements also boosted his bottom line. Find out how, and learn what steps to take to tap NRCS and other agencies' cost-share, loan, and grant programs to integrate healthy waterways and land stewardship into your farm plans. Register by clicking here to go to Future Harvest CASA's website.

FUTURE HARVEST CASA'S ANNUAL CONFERENCE

January 12 through 14, 2017

College Park Marriott

3501 University Boulevard

East Hyattsville, MD

Attend the region's largest farm and food gathering! The 18th annual conference is three days of local farm and food workshops, farm fresh meals, inspiring speakers, networking opportunities, and the local Fare Fair. For information on sponsoring and exhibiting, click here to access Future Harvest CASA's website.

If you need more information on grazing in Maryland, please contact Michael Heller at mheller@cbf.org or Jeff Semler at jsemler@umd.edu.

Pennsylvania Events

GRAZING, SOIL HEALTH, PASTURE WALK FIELD DAY

Wednesday, October 5

9:00 a.m.-12:00 noon

Jeff B. Stoltzfus, Jr. Farm

34 Lakeview Road, Kirkwood, PA

Learn how healthy soils lead to increased production, increased profits, and natural resource protection. For information, contact Melissa Nelson at melissa.nelson@pa.usda.gov or 717/299-5361, ext. 114

COVER CROP FIELD DAY

Thursday, October 6

10:00 a.m.-2:00 p.m.

Ranck Family Farm, Mifflin, PA

Join Penn State Extension and the Ranck Family at their certified organic farm to see and learn about current on-farm cover crop research projects. To register, please click here to go to the PennState Extension website.

COW HEALTH IN THE GRAZING DAIRY: FROM PASTURE TO PRODUCT

Saturday, October 8

9:00 a.m.-1:00 p.m.

Wholesome Dairy Farms

181 Camp Road, Douglassville, PA

Discussion regarding the challenges cows face at different stages of their lives, including conversation around genetics, nutrition, and how the soil of the pasture directly influences the health of the animal, and ultimately, the milk. For more information and to register, click here to visit Pennsylvania Association for Sustainable Agriculture's website.

If you need more information on grazing in Pennsylvania, please contact Red Barn Consulting at 717/393-2176 or Capital RC&D at 717/241-4361.

Virginia Events

VIRGINIA FARM TO TABLE CONFERENCE

December 7-8

Plecker Workforce Development Center

Blue Ridge Community College

Weyers Cave, VA

This year's conference will feature a time for producers and buyers to network and a Young/Beginning Farmer and Rancher Networking Mixer. The conference will also provide in-depth training in soil health, whole-farm budgeting, and strategic food system planning. To sponsor or exhibit at the conference, please contact Eric Bendfeldt of Virginia Cooperative Extension at 540/432-6029, ext. 106.

AMERICAN FORAGE AND GRASSLAND COUNCIL 2017 ANNUAL CONFERENCE

January 22-24, 2017

Hotel Roanoke and Conference Center

Roanoke, VA

The 73rd annual conference is focused on turning grass into cash and opportunities in grassland agriculture. For more information, click here to visit the American Forage and Grassland Council's website.

VIRGINIA NO-TILL ALLIANCE VANTAGE WINTER CONFERENCE

Wednesday, February 22, 2017

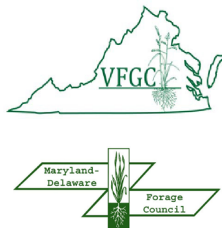
Harrisonburg, VA

Maximize farm productivity and profitability by learning more about the successful implementation of continuous no-till systems through shared ideas, technology, conservation, and education. To learn more, please click here to visit the Virginia No-Till Alliance website.

If you need more information on grazing in Virginia, please contact Alston Horn at 540/487-9060 or Matt Booher at 540/245-5750.

Mountains-to-Bay Grazing Alliance Partnership

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This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number 69-3A75-16-038. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Agriculture.