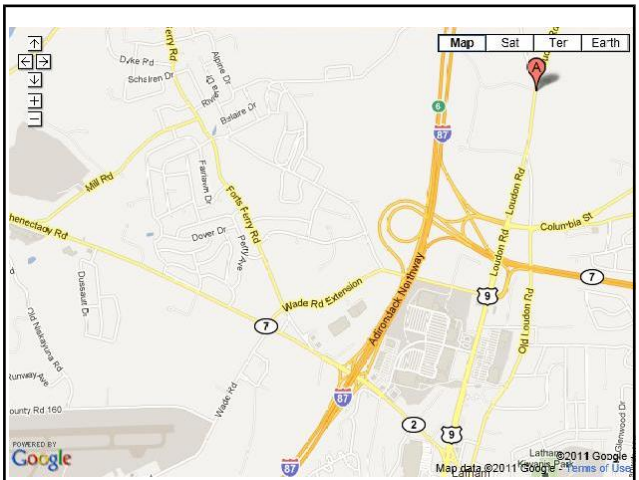
Northeast Pasture Consortium News Update September 2017

Linking Graziers, Researchers, Extension, and Technicians

http://www.grazingguide.net James Cropper, Executive Director & Editor

2018 NORTHEAST PASTURE CONSORTIUM ANNUAL CONFERENCE

The 2018 annual conference will be held in Latham, NY at the Century House Hotel and Conference Center on January 25 and 26 prior to the Winter Green-Up Grass-Fed Beef Conference being held on January 27 at the same location. The Century House Hotel and Conference Center is located on Route 9 within a half mile of the Adirondack Northway I-87, exit 7.



Century House Hotel & Conference Center, Latham, NY Location - Located at A, upper right. Note Albany Airport in lower left corner.

Your Executive Committee and other members are putting together the program for 2018 annual meeting. The December News Update will have the registration form and agenda. Look for it and the Winter Green-Up Grass-Fed Beef Conference details in that News Update.

Driving Directions:

From the East:
Take the NYS Thruway, I-90, Westbound to Exit B-1 (Berkshire Spur). Follow to I-787 North to Route 7 West (Schenectady and Saratoga Springs). Take the exit for Route 9. Turn left on Route 9 (North). Go 1/2 mile north and Hotel/Restaurant/Conference Center with three entrances/exits will be on the right-hand side of Route 9.

From the West:
Take the NYS Thruway, I-90, Eastbound to Exit 24. Take the Adirondack Northway, I-87, North to Exit 7 (Route 7), merge from right lane onto Eastbound Route 7 towards Troy. Stay in right lane for immediate exit onto Route 9 as right lane merges onto Route 9 North. Go 1/2 mile north and Hotel/Restaurant/Conference Center with three entrances/exits will be on the right-hand side of Route 9.

From the South:
Take the NYS Thruway, I-87, Northbound to Exit 7 (Route 7), merge from right lane onto Eastbound Route 7 towards Troy. Stay in right lane for immediate exit onto Route 9 as right lane merges onto Route 9 North. Go 1/2 mile north and Hotel/Restaurant/Conference Center with three entrances/exits will be on the right-hand side of Route 9.

From the North:
Take the Adirondack Northway, I-87, South-bound to Exit 7 towards Troy/Cohoes. Stay in right lane for immediate exit onto Route 9 as right lane merges onto Route 9 North. Go 1/2 mile north and Hotel/Restaurant/Conference Center with three entrances/exits will be on the right-hand side of Route 9.

From Albany International Airport

The Century House offers limited Airport Shuttle Availability. Shuttle runs 7am-9pm and must be scheduled 24 hours in advance.

The Century House has hosted the **Winter Green-Up Grass-Fed Beef Conference** every year for 10 years so this speaks well of the host.

Below are pictures of the meeting room and dining room facilities. Plan on attending as we will have some very interesting sessions again. The sessions currently being planned are:

- Riparian Area Management in Pastures,
- Pastures and Soil Health,
- The Saturated versus Unsaturated Dietary Fat Controversy as it relates to Pasture-raised Dairy and Meat Products, and
- Producer Showcase.

Riparian Area Management in Pastures

The Pasture Systems and Watershed Management Research Unit at University Park, PA has been involved in a 4-year study with Penn State Riparia to assess various means of protecting riparian areas depending on their susceptibility to damage by livestock where pastures encompass riparian areas within their fenced boundaries. The Team is sufficiently along in their project to give us some of their findings on how to mitigate damage to riparian areas by grazing livestock depending on the site and the conservation management it currently receives. The Production and Conservation Trade-offs (PACT) tool was introduced at the Pasture Con-sortium Conference two years ago. It was an outcome of the literature review that ARS conducted in response to the Pasture Consortium concerns about ill-conceived riparian directives. This tool qualifies the different outcomes of alternative riparian practices and can illustrate how similar riparian health outcomes can be achieved with different approaches. A paper is being written about the PACT tool. In evaluating the watershed data, it generally shows that a so-called "multi-functional" buffer (a riparian zone managed consciously for multiple production and conservation outcomes) can achieve outcomes expected of "no touch" buffers.

Pastures and Soil Health

A quote from Dennis Hancock, Forage Extension Specialist, The University of Georgia, "Good graziers have known the benefits of increased soil organic matter (SOM) for some time. Soils that are high in SOM act as a sponge to hold more water, reduce soil density (compaction), have a higher cation exchange capacity, are more resistant to soil acidification by nitrogen fertilizers, have more stable soil temperatures, host more beneficial microorganisms, and provide a reservoir for the rhizobia that infect legume nodules and biologically fix N." Much of soil health revolves around the abundance or lack of soil organic matter. Does soil health affect the bottom line of your livestock farm? It sure does. Healthier soil yields better-quality grasses and legumes and more forage mass, which means

healthier cattle that achieve a higher average daily gain or produce more milk per cow, sheep, or goat on less acreage.

Soil organic matter (SOM) comes from above- and belowground plant residues, plant root exudates, and microbial populations in the soil. SOM is a critical component of a highly functioning soil in pastures. Greater levels of SOM produce increased levels of carbon sequestration, cation exchange capacity, and soil aggregation. As a result, soils with greater SOM have reduced nutrient leaching and increased water infiltration and holding capacity. These good traits increase the resilience of perennial pastures to droughts and reduces potential sediment and nutrient transport to water bodies in precipitation runoff (that occurs less often and in lesser amounts than on cropland).

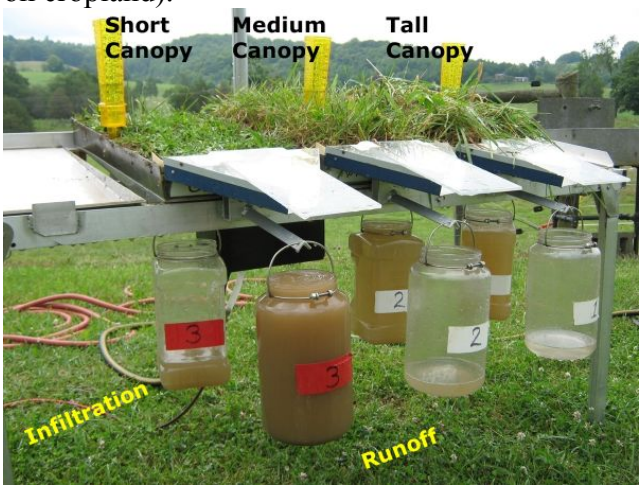


Figure 1: Rainfall simulator showing runoff and infiltration rate differences on 3 pasture sods of varying canopy height.

The Saturated versus Unsaturated Dietary Fat Controversy as it relates to Pasture-raised Dairy and Meat Products

Our 2017 Conference theme was "From Pasture to Table - Grass Fed Livestock Production of Meat and Milk and Its Preparation - Their Effects on Fatty Acid Composition and Human Health" where we learned that meat and milk from pasture-raised livestock had a better fatty acid composition than livestock fed high levels of grain and/or stored forages. This was based on the premise that lowering saturated fat content in meat and milk and increasing polyunsaturated fats and monounsaturated fats that were in meat and milk would be healthier for human consumption. A few scientists are now disputing some of these premises now that there has been more research on the true causes of obesity, cancer incidence, and heart disease. We are in the process of inviting 2 speakers to this Conference to tell us what they have found in the review of the current literature on this topic. Seemingly either feeding method is fine since saturated fats may not be as bad as they were once thought to be. Yet, the benefit of a lower omega-6 to omega-3 fatty acid ratio still appears to be vindicated so pasture-fed would address that issue better.

Producer Showcase

Since the last time we held our Conference in Latham, NY in 2012 until now, the Producer Showcase has been a yearly session. Outstanding pasture-based farmers at this session share with us how they manage their pastures and their farm operations to improve profitability, their lifestyle, and the environment.

10th Winter Green-Up Grass-Fed Beef Conference, January 27, 2018

Winter Green-up 2018 is on Saturday January 27, 2018 from 9-4pm (registration starts at 8am). It will be held at The Century House, 997 New Loudon Road, Latham, NY. A great line of speakers will be announced soon.

Rooms are being held for Friday and Saturday at The Century House for $114 per night. Call The Century House at (518) 785-0931 to reserve. Please mention the Winter Green-Up conference to receive this special rate.

Plan on staying after the 2018 NEPC Annual Conference to attend the 10th Annual Winter Green-up at the Century House, Latham, NY? For more information, contact Tom Gallagher at tjg3@cornell.edu. Book your spot early, this event does sell out.

What Should Organic Dairy Cows Eat & When Should They Eat It?

From Fresh from the Field, University of Vermont Center for Sustainable Agriculture

Dairy farmers' levels of financial viability are often determined by the slimmest of margins, and so small changes and subtle knowledge can have a big effect.

That's why the team of University of Vermont researchers working on the "Timing of Supplementation for Dairy Cows" project is trying to understand more about what is working with how Vermont's organic dairies are feeding their herds.

Previous studies revealed that the time that cows are offered supplements* can significantly affect their levels of milk production – and, consequently, a farm's earnings.

Lead researcher Sabrina Greenwood, Ph.D. of UVM's Animal & Veterinary Sciences Department began this research after completing work as part of a team that conducted a trial in New Zealand, in which the researchers changed only the time of day that corn silage was offered as a supplement to pasture - and noted an increase in milk yield of over 6 pounds per cow per day.

An earlier study based at UVM had indicated that strategic timing of access to fresh pasture

*For these studies, "supplement" was defined as anything that is not normal access to pasture.
and all the provided nutrients also increased milk production. Juan Alvez Ph.D., Pasture Technical Coordinator with the UVM Center for Sustainable Agriculture, says that "In this study, the researchers gave the cows the same amount of pasture, but they fenced off 15% of it and only gave the cows access to that three hours prior to milking. Just that small change in management increased milk production by one kilo (2.2 lbs.) per cow, per day."

Timing supplement feeding so that it complements pasture intake rather than dampening it appears to be a big part of boosting milk production. Researchers have seen this when offering cows certain kinds of supplements too close to a new pasture allowance. It prevents cows from getting the most out of the pasture.

Dr. Greenwood draws this analogy, "It's a bit like if I took you out for a pancake breakfast, and then I immediately brought you a five-course dinner. You wouldn't have room for it, and your body wouldn't be able to do a good job of getting the nutrients from that dinner. But if we had a pancake breakfast in the morning, and then a nutritious meal in the evening, that works better."

Figure 2: Holsteins on rotational pasture

The literature review and preliminary findings show that there are several approaches that can

do this. "These farms are doing something right, and this team is trying to help identify what, in relation to the feeding management system, that is," says Greenwood. "Our aim is to analyze the data that we are collecting on-farm, compare each type of feed system, and provide the farming community with more information about how to make each of the different supplement strategies work. Someone may find that just changing the time of day that they put out a new round bale might make a big difference, or that changing their feeding strategy altogether might be feasible too."

The study is in its second of four years and is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture Organic Agriculture Research and Extension Initiative (OREI) project number 2015-07409.

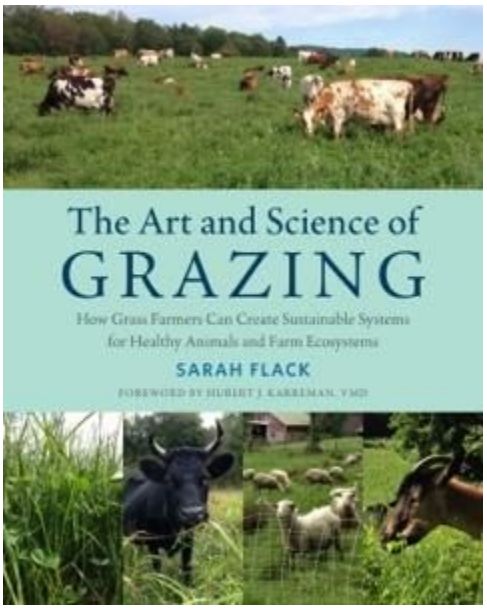
For more information, contact Dr. Sabrina Greenwood at 802-656-0145 or Sabrina.Greenwood@uvm.edu, or visit the project web page at http://www.uvm.edu/~susagctr/?Page=whatwedo/projectsresearch/orei.html

Sarah Flack's new book *The Art & Science of Grazing*

Sarah has been a long-time member of the Northeast Pasture Consortium and most recently made a presentation at our 2016 Northeast Pasture Consortium Conference in Maine on *Zero grain dairy: Lessons learned from farm successes and disasters*. Her vast experience as a pasture consultant makes this book a very compelling read for anyone pasturing livestock.

Hello Friends,

I wrote a book called *The Art and Science of Grazing – How Grass Farmers Can Create Sustainable Systems for Healthy Animals and Farm Ecosystems*. It covers the basic principles shared by all successful grazing systems, and many real descriptions of grazing systems working well on dairy, beef, goat, and sheep farms in different regions of North America. My book presents information first from the perspective of pasture plants, and then from the livestock perspective—helping farmers understand both plant and animal needs before setting up a grazing system. It is written in farmer friendly language and includes illustrations and color photos.



I'm letting you know so you can buy a copy, or share the news with friends and other farmers. You can read more about the book on either my website or the Chelsea Green book sales page.

You can order a copy from Chelsea Green Publishing (they also offer discounts for larger volume quantities or book sales at conferences). http://www.chelseagreen.com/the-art-and-science-of-grazing Or you can order from your local bookstore.
Or you can get it on Amazon at:
https://www.amazon.com/author/sarahflack

Folks can also order directly from me, and I've added information on this to my website. So, if someone wants a signed copy they can go to: http://www.sarahflackconsulting.com/publications-and-video/books-and-audio-cds/ to get information on how to get a copy.

Thank you!

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Biosecurity Remains an Essential Part in Keeping Backyard Flocks Healthy

Several pasture-based farmers also raise chickens for eggs or meat on pasture. We often think of free range chickens being in a cleaner environment so that they should be free of bacteria, but unfortunately this is not always to be. Below is an article from the Texas Animal Health Commission with some good sound information to follow if you have a small flock on the farm.

AUSTIN, TX – A 2016 Salmonella outbreak sickened at least 611 people in 45 states, including Texas, according to the Center for Disease Control and Prevention. The outbreak has been linked to live poultry in backyard flocks.

Texas is home to one of the largest backyard chicken flock populations in the U.S. To minimize the spread of Salmonella, the Texas Animal Health Commission (TAHC) always emphasizes the use of good, proper biosecurity. Biosecurity is a set of preventative measures designed to reduce the risk of introduction and transmission of an infectious disease agent, like Salmonella.
Even when they appear healthy and clean, live poultry may have Salmonella bacteria in their droppings and on their feathers, feet and beaks. The bacteria can also contaminate cages, coops, chick/poult boxes, bedding, plants and soil in the area where the birds live and roam.

Additionally, Salmonella bacteria can be found on the clothes, shoes and hands of anyone who handled the animals or played and worked near them. It is essential to wash your hands frequently when handling birds to limit your risk of exposure.

By following these simple guidelines, you can help minimize the risk:

Keep Your Distance - Restrict access to your property and your poultry and post a sign.

Keep It Clean - Wear clean clothes, scrub your shoes/boots with disinfectant, and wash hands thoroughly.

Don't Haul Disease Home - If you have shown birds at a fair or exhibition or are bringing in new animals, keep them separated from the rest of your flock for 30 days after the event.

Don't Borrow Disease from Your Neighbor - Do not share equipment, tools, or other supplies with your neighbors or other livestock or poultry owners.

Look for Signs of Infectious Diseases - You should know what diseases are of concern to your flock and be on the lookout for unusual signs or behavior, severe illness, and/or sudden deaths.

Report Sick Animals - Don't wait. Report serious or unusual animal health problems to your veterinarian, State or Federal animal health officials or local extension office.

Follow this link from USDA, APHIS for more information: https://www.youtube.com/watch?v=S9fCDU2pn5I
Poultry Bio-security: Basic Tips to keep you and your flock healthy. There are several other videos at this site that may also be of interest to you.

Figure 3: Laying hens on rotational dairy pasture.

Grazing Boosts Organic Matter

By Kevin J. Shinners

Original article published by *Hay and Forage Grower*, September 23, 2015

Dairy producers must keep a sharp pencil to ensure the milk check covers all their costs, but there is one factor that probably never shows up on the balance sheet that can help keep the farm in the black: soil organic matter (SOM).

Scientifically speaking, SOM is a collective term that refers to the amount of carbon-based material in the soil. In a sense, SOM quantifies the living component of the soil (such as roots, fungi, bacteria and earthworms). But why does SOM matter?

Soil organic matter acts as a sponge. It holds water; improves the soil's cation exchange capacity, allowing it to hold more nutrients; and provides a host of other advantages. Dairymen who farm sandy soils, like those in the Coastal Plain of the eastern U.S., such as the Delmarva Peninsula, need all the help that they can get with these soil properties. Often, having good SOM and the benefits that come from it can be the difference between losing and making money.

Since 2005, there has been dramatic growth in the number of pasture-based dairies not only in Georgia but the entire Southeast. In Georgia, nearly 20 percent of the dairy herd is now "out to pasture." Most of these new farms have been going in where cotton, peanuts, and corn had been produced for decades.

A few years after these new pasture-based dairies were up and running, several of the producers indicated that they were noticing some major changes in their pasture's productivity and need for inputs. These producers reported that they were irrigating less and needed progressively less nitrogen fertilizer to get the same amount of pasture productivity. They were good graziers and knew that their SOM was going up and providing these very positive side effects.

Unprecedented improvement

Crop and soil scientists from the University of Georgia began to take soil samples to monitor these changes. The preliminary results on one farm showed the SOM had increased from 1.1 percent at a time point three years after conversion to over 2.1 percent in their farm's sixth year. Such rates of SOM improvement are unprecedented in the scientific literature. In fact, these results were so striking that no one in the group believed the data.

Subsequently, a research study was initiated to take a closer look at what was happening. The study, published in *Nature Communications* in late April of 2015, confirmed that SOM is drastically increasing. The results are most astonishing in the top few inches of the soil on these farms. Five years after conversion, SOM in the top 4 inches of soil had essen-tially tripled.

Additional research showed that the fastest rate of SOM accumulation occurs on the pasture-based dairies between two and six years after converting from row crops. Carbon (C) in the top 12 inches of soil (OM is about 58 percent C) rose by approximately 3.6 tons of C per acre per year. Incidentally, this rate of SOM buildup is among the highest rates ever recorded in any system.

In fact, if one considers that the average automobile produces 1.5 tons of carbon per year, the average 500-acre, pasture-based dairy farm in Georgia is sequestering the annual carbon emissions of over 1,200 vehicles. According to EPA estimates, 5.6 tons of CO_2 per year x CO_2 is about 27 percent C. In other studies, prediction models developed by USDA's Agricultural Research Service and refined for Georgia forages and conditions showed that pasture-based dairying in the Southeast has a carbon footprint similar to the freestall dairies in this region (on per unit of milk produced basis).

Won't occur overnight

Soil organic matter is comprised of many components.

It is worth noting that Rome wasn't built in a day and neither will SOM. The SOM on the pasture-based dairies we studied did not show much gain in the first one to two years following conversion. This is probably the result of a lag in getting the population of soil microbes and earthworms built up.

Additionally, it is unclear if that high rate of OM buildup can continue. At some older pasture-based dairies, the soil seems to have stabilized at 3 to 4 percent OM, indicating that SOM levels will eventually plateau.

In addition to continuing to monitor soil OM levels, this research has now moved into trying to determine which part of the forage system contributes the most to this change in soil OM. The preliminary results seem to indicate that the roots and root exudates are the major sources of SOM improvements. These results support the findings of a consortium of American and European scientists in a recent review in the journal *Nature*. Their report conclusively showed that roots and root exudates are the primary source of SOM buildup, disproving the long-held dogma that crop residues and biomass on the soil surface are the primary sources of SOM buildup. (Editor's note: Take note mob grazing proponents.)

"Carbon footprint" is a common catch phrase these days, but this research is now beginning to examine the "carbon fingerprint" of our forages. Cool season and warm season forages have distinctly different carbon radioisotope signatures. By monitoring the radioisotope signatures in the roots, plant litter, and animal manure from these different forages, scientists can better understand how much of the OM buildup is due to each of these forage types and the degree to which manure is playing a role. In so doing, scientists hope to build a forage system that provides high-quality forage crops that suit the needs of the rumen microbes and the soil biota.

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The News Update Credo

The Northeast Pasture Consortium News Update is published semi-annually, early fall and winter issues. The goal of these news updates is to keep our Consortium members abreast of the latest research and technology that most impact pasture-based farmers, inform them about the upcoming annual conference, and provide a forum to guide and formulate good policies and best management practices that keep pasture-based farms profitable, efficient, and environmentally. sound.