

CHAMPLAIN VALLEY CROP, SOIL & PASTURE TEAM



THE UNIVERSITY OF VERMONT
EXTENSION

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FOCUS ON AGRICULTURE: FOLLOW THE PLAN, IF YOU CAN

By Jeff Carter, UVM Extension Agronomist

Fall ends another crop season that just would not give up. Too wet, too dry, always a challenge, and nearly impossible to follow a set plan with so much variability in weather conditions. Now the plans have already been laid for next season as corn fields have been seeded to winter cover crops, hay fields are manured for next spring's growth, and pastures have been tended for the last round of rotational grazing. Every year comes with some unpredictability, and now it's time to write next year's plan.

I know that planning for next year actually started during this past spring as a result of many prevented plantings, rutted fields, and harvest delays. The winter rye cover crop was a challenge this spring as it grew too tall and increased the use of spring tillage. Many local farmers who planted through it still have a great corn silage crop and still see the rewards from no-till planting systems. I am seeing a shift in the types and rates of cover crops being grown on corn land in an effort to try and avoid the heavy residue of winter rye. Even in the multi-species combinations in our field trials, the winter rye seems to dominate the field in spring. A shift to oats, wheat and a little radish has been a good strategy for crop production and the increased value of a better spring planting of no-till corn. This alone can be worth many times the cost of added seed in the fall.

Sometimes the plan keeps changing because of outside rules, and it is hard to keep up with new requirements. The RAPs are still fairly new and are in the process of changing again. The full accounting for phosphorus reductions in the lake is just starting, and Nutrient Management Plans (NMPS) will need to adjust. As we head into the winter, the legislative session, industry meetings, organizational agendas, and special workgroups may affect your farm and how you might plan the future of your business.

Being aware of the recommendations coming from the Nutrient Management Commission, Tile Drain Workgroup, Wetlands Study Committee, Dairy Water Quality Collaborative and the continuing RAP revisions can be a lot. The Champlain Valley Farmer Coalition (CVFC) and other farmer groups can help keep you up-to-date on potential changes to the plan. CVFC still meets monthly to discuss these issues and ensure farmers can be involved when agricultural decisions are being made.

Our Extension team has changed this year and we also keep revising our plans. Merritt, Jonas and Nate have all left the UVM Extension Middlebury staff, and we have to adjust our schedules accordingly until our staffing increases. Kirsten, Cheryl, Kristin and Rachel are continuing full steam ahead with grazing classes, nutrient management plans, training workshops, the Vermont Farm Show and the No-Till/Cover Crop Symposium. Several projects that we have been working on will conclude this winter and next spring, so the project summaries will be coming out for gypsum and other soil amendments (3-year); subsurface tile drain sampling for N, P and sediments (2-year); no-till and cover crop economics (2-year); grassland liquid manure injection (5,000 acres, 2-year); and nutrient mass balance for dairy farms (3-year).

Ongoing Extension projects still include ACAP (Agricultural Conservation Assistance Program) which has been absorbed into the Vermont Clean Water Incentive Program so UVM Extension staff in both Middlebury and St. Albans will continue to provide farmer outreach and assistance with agronomic soil and water issues. We anticipate a new long-term watershed project in Addison County with Natural Resource Conservation Service (NRCS) and Vermont Department of Conservation (VT-DEC) support so Joshua Faulkner (UVM Extension Center for Sustainable Agriculture) will provide a key role in measuring effects of conservation practices which lead to farmer adoption of new techniques (see page 7). We submitted applications for a national NRCS research grant for cover crop/no-till systems, a Sustainable Agriculture Research and Education (SARE) project to continue and expand the Grazing Management classes which ended this fall (see page 6), and requested added Clean Water Initiative Program (CWIP) funding support for the farmer coalition. If all goes well, we will have a new plan, and lots of work to do.

Have a safe fall and take time to enjoy the view.

Have a question for Jeff Carter?

802-388-4969 ext. 332, jeff.carter@uvm.edu



NEWS, EVENTS & INFO YOU SHOULD KNOW

7th Annual No-Till and Cover Crop Symposium, “Going Deeper for Soil Health”

Featuring David Brandt and Scott Magnan, February 26, 2020

David Brandt, who farms 1,150 acres in Carroll, Ohio, utilizes cover crops and no-till to promote soil health. He is a cover crop seed dealer with Walnut Creek Seeds and has been profiled by NRCS. He has worked with and received awards from many conservation and farming groups, and is committed to participating in research.

Scott Magnan runs Scott Magnan Custom Services of St. Albans, which offers mowing, bunk packing, round baling, and manure spreading for farmers. The company is active in water quality practices, and working with farms to help with state compliance and funding.

Consider Being a Sponsor!

When you become a sponsor for the 2020 No-Till Cover Crop Symposium, you are assisting farmers in expanding their agricultural knowledge! We have three sponsorship levels: Platinum (\$2,000), Gold (\$1,000) and Silver (\$500). All sponsors receive an exhibitor table and public recognition at the conference. Platinum level sponsorship includes three symposium registrations and lunches, 1/2 page ad in conference proceedings and top level placement of a logo on promotional materials. Gold level sponsorship includes two symposium registrations and lunches, 1/4 page ad in conference proceedings, and second level placement of a logo on promotional materials. Silver sponsorship includes one symposium registration and lunch, 1/8 page ad in conference proceedings, and third level placement of a logo on promotional materials.

New this year, we are offering BREAKOUT SESSIONS! Break-out sessions will give us the ability to dig deep into a particular topic and will give us more time for smaller group discussions. Break-out sponsorship is also available at \$750 and includes moderating the break-out session.

If you are interested in becoming a sponsor at any level, please contact Karen at 802-388-4969 for more information. To view our sponsor exhibitor form visit go.uvm.edu/sponsorntcc.

Attention Graduate Students – Seeking Poster Submissions

Share this information widely! Graduate students involved in regional (northeast) research on cover crops, no-till (or reduced tillage) and/or soil health are invited to submit a poster to present at the annual UVM Extension No-Till and Cover Crop Symposium. Research can involve any agricultural crop, though the focus of our symposium has traditionally been on dairy forages and grain crops. The poster session will be held during registration and two exhibitor/poster sessions throughout the day. Poster submission deadline is January 24, 2020.

For more information see our website go.uvm.edu/ntccs or contact our office 802-388-4969.



UPDATES ON EVENTS & MORE
SIGN UP FOR OUR E-NEWSLETTER: UVM.EDU/EXTENSION/CVCROPS

PASTURE, FORAGE AND RANGELAND (PRF) CROP INSURANCE

By Jake Jacobs, UVM Crop Insurance Education Coordinator

Variability in precipitation makes it difficult for farmers to predict quality and quantities of forages. Reduced yields can significantly impact your operation by decreasing income, reducing the amount of stored feed, and inadequate feed available from pastures. The results may mean having to begin feeding forage supplies intended for later in the year, the need to purchase additional forages, having to buy supplemental concentrates to make up for low quality, and in some situations, having to reduce livestock numbers to extend remaining forages. While we are more likely to suffer crop losses due to excess precipitation in Vermont, we have also experienced extended periods of moderate to severe drought in recent years.

USDA's Pasture, Rangeland, Forage (PRF) program was designed to help protect a producer's operation from forage losses due to one peril: lack of precipitation. This insurance can mitigate increased costs for feed, destocking, depopulating or other actions that are the result of losses of forage produced for grazing or harvested for hay.

PRF coverage is based on precipitation expected during specific intervals, utilizing a rainfall index to determine precipitation for coverage purposes. It does not measure forage production or loss of products themselves. The Rainfall Index uses National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA CPC) data, which utilizes a grid system to determine precipitation amounts within an area. Each grid is approximately 17 by 17 miles. Acres to be insured are in one or more grids, based on the location to be covered. When rainfall during the two-month insured period

falls below the 50-year average for that grid, the producer may receive an indemnity payment.

Producers select the coverage level (from 70 to 90 percent), index intervals (two-month period to be covered) and productivity factor (level to match the amount of protection to best cover the productive capacity of the acres). Coverage is based on the rainfall index and the experience of the entire grid.



The enrollment deadline for PRF coverage is November 15. You can find risk management resources on the UVM Agricultural Risk and Crop Insurance Education website: go.uvm.edu/ag-risk. For more information on PRF insurance, visit the NCIS website to view crop insurance webinars: <https://cropinsuranceinamerica.org/pennsylvania-crop-insurance-webinars>.

A crop insurance agent can assist you in determining whether or not PRF is the right choice for your farm. Try using RMA's PRF Support Tool where you can locate the grid where your forage acreage is located: <https://prodwebnlb.rma.usda.gov/apps/prf>. Once you locate your grid, you can click on the Historical Indexes to see the 50-year history for your location.

To locate an agent licensed to sell crop insurance in Vermont and advise you about crop insurance options, visit the RMA web site: <http://www.rma.usda.gov>.

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TIME FOR GRANT PLANNING?

By Rachel Orr, Agronomy Field Technician

Fall has arrived! The corn is chopped, the cover crops are planted (hopefully), and we are looking to winter planning season. One item for planning is whether there are any grants which might help you obtain equipment or address other needs without a huge debt load. Grant applications are sometimes cumbersome to get through and not a whole lot of fun to fill out. However, it doesn't have to be a painful process.



Upcoming grant opportunity deadlines include the Vermont Agency of Agriculture, Food and Markets (VAAFAM) Capital Assistance Equipment Assistance Program (CEAP) deadline November 1 and the Vermont Housing and Conservation Board (VHCB) Water Quality Grants deadline November 8.

If you are thinking about applying for a grant, plan ahead so we can assist you with the application process and summation of the grant. Remember, some applications require in-depth information

such as your business plan, so a look ahead to the future is going to help you write an application more likely to get funded.

Contact our office at 802-388-4969 if you would like help applying for a grant.

GRANT DEADLINES

Vermont Agency of Agriculture, Food and Markets (VAAFAM)
Capital Assistance Equipment Assistance Program (CEAP)

NOVEMBER 1

Vermont Housing and Conservation Board (VHCB)
Water Quality

NOVEMBER 8

ORGANIC MATTER: WHAT'S THE BIG DEAL?

By Kirsten Workman, Agronomy Specialist

For something that only makes up on average between 1% and 6% of your soil, organic matter has a huge role to play on the most important properties of your farm's soil. You may wonder why there is so much hoopla about reducing tillage, rotating crops, and utilizing cover crops, it's all about the organic matter (okay not all, but a lot)! This is because, "it affects several critical soil functions, can be manipulated by land management practices and is important in most agricultural settings across the country. Because organic matter enhances water and nutrient holding capacity and improves soil structure, managing for soil carbon can enhance productivity and environmental quality, and can reduce the severity and costs of natural phenomena, such as drought, flood, and disease. In addition, increasing soil organic matter levels can reduce atmospheric CO₂ levels that contribute to climate change." (USDA-NRCS Soil Technical Note No. 5, 2003)




Types of Organic Matter

Not all organic matter (OM) is equal. It is broken up into three parts: living soil organisms, fresh and actively decomposing plant and animal residues, and well-decomposed residues. In simpler terms ... living, dead and very dead. This matters because each component behaves a little differently in your soil. Living OM makes up about 15% of the total organic matter and is responsible for recycling plant nutrients, mixing OM into the soil profile, and exuding substances that help stabilize soil aggregates and soil structure. The dead OM is, ironically, the most active portion of the OM and makes up 30 to 50% of total OM. This actively decomposing material feeds the soil biology, fuels plant nutrient release/cycling, and binds soil particles together thereby enhancing soil structure. The very dead OM is often called humus. This is the very stable portion of soil OM and can be more than 1,000 years old. It can hold onto important plant nutrients and release them slowly, as well as mediate harmful chemicals from damaging plants. Humus can reduce compaction and drainage issues in clay soil and enhance sandy soils by decreasing bulk density and increasing water holding capacity.

Benefits of Organic Matter:

- Good nutrient supply
- Drainage
- Aeration
- Water storage
- Tilth
- Reduced soil borne diseases, pests, etc.
- Darker soil = earlier faster soil warming
- Stimulates root development
- Healthy plants and increased yields
- Carbon storage



LAYERS OF ORGANIC MATTER UNDERNEATH DIVERSE, WELL-MANAGED, INTENSIVELY ROTATED PASTURE ON VERGENNES CLAY SOIL. THE SOIL SHOWS GOOD STRUCTURE AND FINE ROOT HAIRS CONTRIBUTING ORGANIC SUBSTANCES TO THE SOIL.

IN SHORT, ORGANIC MATTER MATTERS

Protecting & Building Organic Matter

It is far easier to maintain organic matter than to build organic matter which has been lost. The biggest way to protect your organic matter (and your overall soil health, for that matter) is to AVOID erosion! When erosion occurs (whether from water or wind), you lose the top portion of the soil that contains most of your organic matter. To maintain and increase organic matter:

- Reduce or eliminate tillage
- Plant cover crops
- Reduce or avoid soil compaction
- Increase organic matter inputs (crop residues, animal manures, green manures)
- Rotate with perennial crops
- Use intensive rotational grazing management (a.k.a. prescribed grazing) in pastures

So WHAT?

Organic matter is the fundamental KEY to healthy soils. It drives carbon cycles, nitrogen cycles, water cycles and plant growth. It buffers soil and plants from adverse effects of harmful chemicals, drought, pests and disease. It decreases bulk density, protects from compaction, and feeds soil biology. While it makes up the smallest fraction of our soil, it buffers the less desired behaviors of both clays and sands, and enhances the soil's capacity for air and water storage. Soil organic matter is both the food and the habitat for soil organisms. In short, organic matter MATTERS.

Resources

Much of this article is adapted from the second chapter of "Building Soils for Better Crops: Sustainable Soil Management (SARE)." The book text can be viewed at: go.uvm.edu/sare-organic-matter

Penn State Extension, "Managing Soil Health: Concepts and Practices": go.uvm.edu/psu-soil-health

USDA-NRCS Soil Quality Technical Note No. 5, "Managing Soil Organic Matter: The Key to Air and Water Quality": go.uvm.edu/nrcs-managing-soil-health

If you'd like to help building organic matter on your farm, contact Kirsten at kirsten.workman@uvm.edu, 802-388-4969 ext. 347.

GRAZING PLANNING COURSE WRAPS UP TWO-YEAR GRANT

By Cheryl Cesario, Grazing Outreach Specialist

This fall marks the end of a two-year grant for our grazing management course funded by Northeast Sustainable Agriculture Research and Education (NE-SARE). This project allowed us to conduct multiple 4-week courses to dive into the nuts and bolts of grazing management. The class series allowed farmers to study essential grazing principles and develop management plans for their operations. In addition, the grant project funded follow-up technical assistance to class participants as they implemented new practices.

Over the two-year project, we conducted classes in 5 locations, reaching 31 farmers with planning and implementation on 1,600 acres. Farmers participated in this program across 7 Vermont counties and included 11 beef producers, 9 cow dairies, 6 goat dairies and 5 sheep producers. Six of the 31 farms entered into Natural Resource Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) grazing contracts for project cost-sharing.

5 COURSES
31 FARMERS
1,600
PLANNED ACRES

In addition to obtaining funding for grazing implementation, grazing planning allowed farmers to identify farm goals and develop a strategy specific to their farm. Some were looking to better utilize the acreage that they had, others were developing a plan that involved expansion. In each case, in-class planning and calculations were tested in the field, and further adapted. Participants left with tools that can evolve with their farm management.

“THE PASTURE CLASS OFFERED BY UVM EXTENSION THIS SPRING WAS A TOTAL GAME CHANGER FOR ME.” ~Becca Knouss

Becca Knouss of *The Goat Project* in Bennington, VT commented, “The class helped me to better systematically set up pastures so I was moving portable fencing in a more sensible manner. I was also able to learn how to calculate how much dry matter my goats required so I can better manage hay consumption in both the summer and winter months. I would like to add a most sincere thank you to all who were able to make this happen. I can't stress enough how helpful those 4 meetings truly were.”

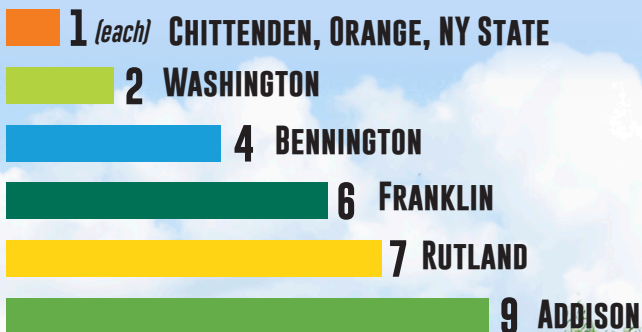


PRIMARY FARM ENTERPRISE

- BEEF
- DAIRY (COW)
- DAIRY (GOAT)
- SHEEP



LOCATIONS OF FARMS



A few participants of the Grazing Planning Course who've had success applying grazing concepts to their farm business. (left to right) Kevin and Patty Plew – Plew Farm; Linda and Claire Stanley - Paul Lin Farm; Chad and Morgan Beckwith – Ice House Farm.



NEW LONG-TERM RESEARCH COMING TO A WATERSHED NEAR YOU

By Joshua Faulkner, Research Assistant Professor

Important new water quality research led by UVM Extension is coming to Addison County, as two small watersheds become part of a long-standing national monitoring and research network established by the USDA. This network, known as the Conservation Effects Assessment Project, or CEAP (not to be confused with VAAFM CEAP grants), has included 42 watershed studies across the country, all initiated with the goal of “improving efficacy of conservation practices and programs by quantifying conservation effects and providing the science and education base needed to enrich conservation planning, implementation, management decisions, and policy.” In short, this project will help us measure and understand the effects of conservation practices at the watershed-scale in the Lake Champlain Basin over the long-term.

Portions of two watersheds have been selected for the study: Dead Creek and Little Otter Creek. Because these entire watersheds are too large to confidently evaluate the effects of conservation practices, we have selected smaller portions to intensively monitor. Continuous streamflow and water quality sampling by automated samplers will occur on these waterways during baseflow and storm events. The focus will be on phosphorus in its various forms (i.e., dissolved and sediment-bound) but we will also be measuring the different forms of nitrogen and runoff volumes. We will be providing updates and more details on the project over the coming months and years through this newsletter, and around the state and county at workshops and meetings.

Many thanks to the agencies who are supporting this work. Significant financial and technical support is being provided by Vermont Natural Resource Conservation Service (VT-NRCS); Vermont Department of Conservation (VT-DEC); Vermont Agency of Agriculture, Food and Markets (VAAFM); U.S. Geological Survey (USGS); and

UVM Extension. Without these partners, this project would not be possible. This is truly a team effort, and is something many agricultural and water quality players in Vermont believe in and support.



I will be leading this exciting project, and would like to quickly introduce myself to those whom I haven’t yet met. This is my sixth year working for UVM Extension as an agricultural and environmental engineer, and much of my research and outreach are focused on soil, water and climate change. While I have been living and working in Addison County for some time, this is my first long-term research project of this size in the county. Most days I work out of UVM’s main campus in Burlington, but will be in the field much more in the future as I work with the Champlain Valley Crop, Soil and Pasture Team to put this project on the ground. Please say “Hello” if you see me, and stop and chat if you have any questions on the project!

If you have questions for Joshua, contact: joshua.faulkner@uvm.edu or 802-656-3495.





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