NEWSLETTER

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Please contact your local extension office for the print version of any article included in this newsletter.

Here's your August Driftless Ag Update!

Hello and congratulations on receiving our August Driftless Ag Update! This newsletter is co-written by your local UW-Madison Extension Ag Educators, Beth McIlquham (livestock) and Sam Bibby (crops).

Notes from your Regional Crops Educator- Sam Bibby

-Army worms have been causing significant damage in pockets across the driftless region in the last couple weeks. Often, we are too late to make management decisions because they work so fast. Scout high risk fields. High risk corn fields are those with poor grass weed control, grassy field edges, corn planted late, stunted corn, non-gmo corn, and those adjacent to fields with existing armyworm damage.

-Upper Mississippi River National Wildlife and Fish Refuge, La Crosse District in Onalaska, Wisconsin, has cooperative agriculture opportunities for a haying on five units on three refuge tracts, totaling 86.8 acres. This opportunity will be for one cutting between August 13, 2025 and November 30, 2025. Four units are in Houston County, Minnesota and one unit is located in Vernon County, Wisconsin. For more information contact Tim Miller at by calling 608-779-2385 or emailing tim_a_miller@fws.gov.

Notes from your Regional Livestock Educator- Beth McIlquham

-Swath Grazing - Beef Cow Alternative Winter Feeding Strategy: Planning for winter feed is an important step in beef cattle operations. Alternatives include stockpiling, corn stalk grazing, and bale grazing. Swath grazing (also known as windrow grazing) has recently gained interest as an additional option.

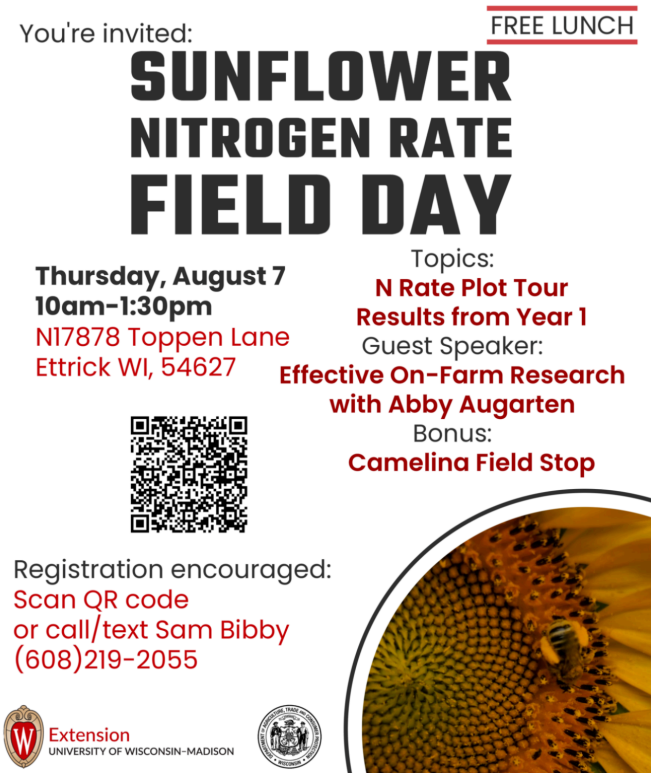
-Defining Success for Reproduction and Calf Crop Performance: Profitability for most commercial cow-calf operations depends on the pounds weaned and marketed from each calf crop. Encouraging farms to develop a record-keeping system is often half the battle (you can't manage what you don't measure); however, records must also be used for decision making to maximize their value.

-Disease Digest: The UW-Madison Extension Livestock team has created a webpage that houses resources and information on Highly Pathogenic Avian Influenza. There have been no cases of New World Screwworm in the U.S. Theileria, a parasite carried by Asian Longhorned Ticks, was confirmed in Iowa. For animal owners of all kinds, please evaluate your biosecurity protocols, including pest management.

Beef Cow-Calf Workshops
Wednesday, August 27, 2025
Greenfield Town Hall, in St. Joseph
To Register:
Contact the La Crosse County Extension office at 608-785-9593 by August 18th.

Weed Management Workshop
September 11th, 8:30am-4:00pm
Learn about the opportunities and challenges with camera-based targeted herbicide application technologies through presentations and equipment field demonstrations. Visit the product and education booths throughout the day provided by the workshop sponsors, participate in a weed identification contest, and enjoy morning and afternoon snacks along with a warm, catered lunch!

Register
https://events.humanitix.com/wisconsin-extension-weed-management-workshop



Sunflower Nitrogen Field Day
Join us on Sam's home farm to explore the challenges and benefits of growing sunflowers in Wisconsin. We will tour the NOPP N rate trial, check on the camelina-soybean relay crop, hear from our guest speaker and enjoy a great lunch.

Badger Crop Connect

Badger Crop Connect 2025
Badger Crop Connect is back for 2025. Every 2nd and 4th Thursday from 12:30 to 1:30 via Zoom UW faculty and other topic experts will provide timely recommendations, share research findings and provide program updates.

https://cropsandsoils.extension.wisc.edu/programs/badger-crop-connect/?utm_source=newsletter&utm_medium=email&utm_campaign=wcm_march_ii

Field Notes Episode 27: Sunflower Production in Wisconsin

In years of low commodity prices, most farmers think about where they might be able to cut costs. Some might begin to think about alternative crops can fit into row crop production. Enter the sunflower. From birdseed, to oilseed, and just looking dang pretty, sunflower production in the state remains miniscule compared to corn, soy, and wheat, but new crops like it can help farmers diversify income streams and reduce risk. So how do we grow them anyways? To find out, we talk with two farmers who also happen to be researchers/educators, Sam Bibby, farmer in Trempeleau County and Regional Crops Educator with UW Madison Extension in La Crosse, Vernon, and Crawford counties and Ben Brockmueller, farmer in South Dakota and Research Technician with Dr. Erin Silva's lab at UW Madison.

Transitioning from Dairy to Beef: Planning Forage Needs

Introduction

It's been observed that farmers often don't retire, but instead "shift gears" by scaling back or transitioning enterprises. This is nothing new to those of us who work with the Wisconsin dairy industry, as farms have moved away from milking cows or have diversified enterprises to complement their dairy herds. A common transition is from dairy to beef, which we cover in our article, Points to Consider Before Transitioning Your Dairy Business to a Beef Operation.

Crop and Forage Acres

Your choice of beef enterprises will influence your forage needs. A beef cow-calf herd and confinement feedlot are both beef producers, but each enterprise has different forage quantity and quality needs. That said, most beef cattle spend two-thirds or more of their lives on pasture or a forage-based diet. Behind every feedlot animal is their dam, who is likely on a pasture or forage-based ration.

Inventory your land resources and what those acres are best suited for: this includes existing pasture or land to be converted to pasture, acres that would benefit from being placed in long-term forage production (i.e., highly erodible, grassed waterways, etc.), and acres that are best for row crop production. Row crop acres still have a place in forage planning, either through including hay in the rotation, harvesting cover crops, annual forages, or utilizing crop residues such as corn fodder. What your land base is best suited for may influence the type of beef enterprise you pursue.

Dry Matter Intake (DMI), Energy, and Protein

Making comparisons between dairy and beef cow nutritional requirements is like comparing apples to oranges rather than apples to apples. However, these are some general starting considerations.

As dairy cow milk production has increased, so has DMI potential. Lactating dairy cow DMI's of 60 pounds or greater are now possible. For a beef cow, DMI will range from as little as 1.6% of body weight to around 2.7% with 2 to 2.5% an average starting point for good quality forage. This number will vary depending on forage quality, weather, stage of gestation, and if she is lactating or dry. For a 1,400 beef cow, this equates to 23 to 37 pounds of forage dry matter.

There is an important caveat on forage-based diets: DMI is influenced by forage quality. As Neutral Detergent Fiber (NDF) increases, DMI decreases. Neutral Detergent Fiber can become a double-edged sword when allocating forages for the beef cow-calf herd. Beef cows fed with low NDF forage will continue to consume until full, even if they don't need the extra nutrients. The rewards for overfeeding are increased feed costs and potential negative impacts on animal health. Conversely, a high NDF forage suitable for non-lactating beef cows may be insufficient for a lactating beef cow. The reward is cows that lose body condition and become harder to breed back. Too often, we see beef producers not account for the changing needs of the cow through the production cycle, and not make corresponding changes in the quality of forage fed. Because of the amazing DMI capacity of our modern dairy cows, there are fewer places to utilize high NDF forages, and the forage harvest management mentality is much different.

Takeaway #1

On a per-cow basis, DMI is less for a beef cow than dairy cow, and this will affect the total amount of feed and forage to plan for.

As you may have already guessed, differences in DMI and lactation create differences in forage quality required for dairy versus beef. Instead, we want to focus here on how needs change with the stage of production. A dry gestating 1,400-pound beef cow in the middle third of gestation needs to consume a minimum of 1.73 pounds of crude protein (CP) and 9.9 Mcals of energy. That need will increase to between 3.5-4.3 pounds of CP and 19.5-22.7 Mcals of energy by early lactation.

Takeaway #2

You can find places to utilize higher NDF, lower CP, and energy forages for the beef cow herd. However, it is critical to account for the beef cows' changing requirements as the stage of production moves from mid-gestation to early lactation.

Forage Inventory Spreadsheet

Our Extension Livestock Program hosts a Decision Tools and Software page which includes a Forage Inventory Tool. This series of spreadsheets helps farmers make forage inventories for both baled and ensiled feeds, estimate forage needs based upon planned ration information, and estimate DMI if feeding free-choice. This is a great starting point to begin aligning forage quality and inventory with the stage of production and growth needs of your beef cattle.

This tool also estimates storage and feeding losses, which can be significant for farms that store forages outdoors and do not utilize bale feeders or bunks. Knowing your herd's forage needs can help you plan for possible shortfalls in forage inventory before they happen. Finally, learning more about your herd's stored feed needs can be a great motivator to improve pasture productivity and extend the grazing season, thereby reducing stored forage feeding expenses.

Understand Minerals for Healthier, More Productive Cattle

Introduction

It's no secret that cattle require sufficient amounts of minerals as part of their diets to ensure they are productive members of the herd. Minerals are classified as macrominerals which are needed in fairly large amounts, and microminerals or "trace" minerals which are needed in small amounts. Phosphorus, calcium, magnesium, potassium, sodium, and sulfur are macrominerals required by beef cattle. Calcium and phosphorus are crucial for skeletal development and strength, weight maintenance, and milk production. Magnesium is important for metabolism and function of the nervous system. Copper, cobalt, iron, iodine, manganese, selenium, and zinc are the key microminerals for cattle. They largely contribute to immune function and reproduction.

Mineral Content in Forages

Mineral content in pasture and harvested forages is variable based on forage species and plant maturity, as well as soil type and fertility. Some examples of when forages mineral content tends to be lower is corn stalks, stockpiled forage, and low quality hay. Individual animal requirements also fluctuate depending on their current developmental stage and reproductive status. Mineral supplementation is used to meet the animal's physiological requirements.

Mineral Delivery Methods

Mineral delivery methods differ from farm to farm and there are considerations for each method. Protein tubs and free-choice mineral mixes are most common, though feeding buffet-style minerals has some interest.

"Buffet," "cafeteria," or "salad bar" mineral feeding offers individual minerals to cattle in separate tubs, which allows them to select which minerals they want to consume. The thought behind this is cattle will only eat what they need. However, mineral buffets do not provide sufficient amounts of each mineral to meet requirements, due to cattle's inability to discern whether they need a particular mineral or not. Cattle only have an appetite for salt, which is why it is often used in mineral mixes to encourage and manage consumption.

Palatability of Minerals

Palatability of individual minerals is also a challenge. Cows are smell- and taste-oriented. Magnesium, phosphorous, and iron are known for their low-palatability. If offered individually, cattle are unlikely to willingly consume them. By incorporating required minerals into protein tubs and mixes with multiple minerals, palatability can be increased and intake is more reliable. Buffet-style mineral feeding can also be costly and requires extra attention to mineral quality and bioavailability.

Mineral Premixes

Mineral premixes are ready-to-use products that allow producers to offer them free-choice, top-dress, or incorporate into total mixed rations depending on their operation. It is possible to have custom mineral mixes made by working with your nutritionist using forage and feed analysis from your farm. Custom mixes may or may not be cost effective options for every farm. For premixes and custom mixes, understanding the ingredient list and guaranteed analysis is essential to getting the most bang for your buck and providing your cattle with only what they truly need.

Summary

Regardless of how you choose to supplement minerals, monitoring and recording intake should be part of your routine. Adjust your mix or delivery method to meet the seasonal and developmental needs of your herd.

Soil Health Lab, Sampling, and Test Selection Considerations

Introduction

Soil health indicators are sensitive to a number of factors including soil type, in-field management practices, laboratory protocols, sampling time and depth, and spatial variation.

The goal of this article is to provide guidance related to the importance of using the same lab to assess changes in soil health over time, in addition to the importance of sampling at a consistent time of year and depth when collecting samples for soil health evaluation.

Laboratory Considerations

When it comes to soil health testing, there are several different methods that laboratories may use when testing for the same thing. Different methods of sample handling, preparation, and analysis (i.e. chemistry and instrumentation) across laboratories often yield different results[1]. As such, it is important to utilize the same laboratory with a consistent method and procedure to avoid analytical fluctuations in soil health data and results over time. Have a conversation with your lab so that you understand what method(s) they are utilizing. Then, in the event you need to go elsewhere for testing services, you know which method(s) you should request to maintain as much consistency in results as possible. Please note that even if methodologies are the same between labs, there is likely to be some degree of variation between different labs, as is common with any soil test.

When, How, and Where to Sample Soils

There are some guidelines that one can follow for the best quality and consistency of soil health test results from year to year. The most important consideration to emphasize is to be consistent in your sampling technique and time from year to year. Research conducted in Wisconsin has shown that sampling month and sampling depth have a significant impact on the test result[2] (Figure 1).

Sampling Month

As seen in the figure below, the chemical/biological soil health test results presented in this work are generally greater in July-August than at any other time before or after that window. This is due to several factors including elevated soil temperatures, adequate soil moisture, and active crop root systems secreting exudates which feed microbial communities. To note, optimal sampling time may not always be the same for other soil health tests, such as evaluating soil compaction with a penetrometer, for example. Penetrometer readings in a dry alfalfa field during July-August (the time period mentioned above) would likely indicate that the soil is compacted, though it may not be. Again, consistency over time is key.

Sampling Depth

Figure 1 below shows that soil health test results were significantly greater in the surface (0-6″) sample than in the subsurface (6-12″) sample. This is because there is a greater abundance of plant roots, organic substances, and nutrients present and available in the upper 2-6 inches of the soil compared to greater depths. As such, it is generally recommended to use a 6-inch sampling depth.

Sampling Locations

Be sure to sample from the same location during each sampling event from year to year. Sampling location refers to the point(s) in the field where samples are collected from. Common approaches include both GPS grid-point sampling as well as conventional sampling. Both approaches have utility, but just remember that consistency is key. The number of samples to collect per field, or per field area, is subjective but should be based on the variation that exists within the specific field.

Common questions to think about might include: What is the topography like across the field? Is it uniform or does it vary substantially from one end to the other? How much does soil type change throughout the field? Is the field managed the same way all the way around, or are different practices being used in different areas? Collecting more samples from a given area will help account for the inherent variability that exists in the field.

Some laboratories suggest that a soil health sample should not represent more than 20 acres. As prefaced above, consider collecting separate soil samples from areas of the field where soil texture or drainage class differ, and where historical management has been different. Walk a "W" shape pattern through the delineated sampling area to collect 15-20 cores (to capture spatial variability) and composite them into one sample. Do this in each sampling area.

Lastly, post-sample collection handling is important to consider. Leaving soil samples exposed to high heat conditions (i.e. on the dash of the truck) for a long period of time will result in different lab results than if samples were refrigerated / kept cool directly following sample collection. Refrigeration is often recommended over leaving samples exposed to the elements or freezing. Be sure to check with your lab for recommended sample handling procedures. Despite the inherent variability that exists amongst many soil health tests due to soil variation in the field, following the tips above should help produce the most consistent results.

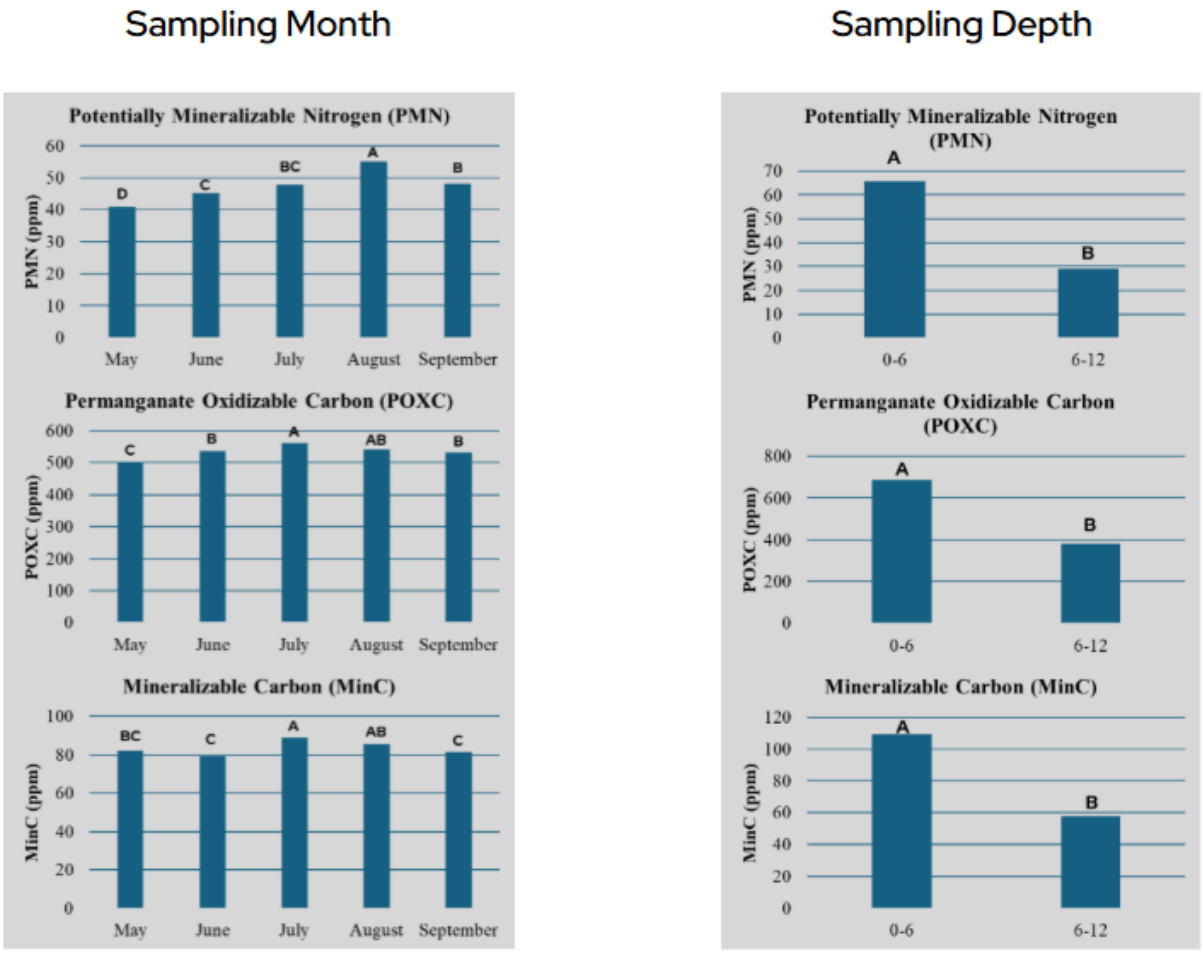


Figure 1. Effect of sampling month (left) and depth (right) on three soil health indicators. Bars within a single soil health indicator graph (i.e. Sampling Month – PMN) with different letters are significantly ($p<0.10$) different

Choosing Soil Health Tests

There are many ways to measure soil health (e.g. physical, chemical, or biological indicators, in-field assessments, etc.), so selecting which test(s) you utilize should be based on the goals you have set for enhancing and monitoring soil health on your farm. Some soil health tests measure individual indicators (i.e. Mineralizable Carbon), while others combine several measures – like the Cornell CASH test or the Haney Test.

What makes a test "good" in any specific situation depends on individual preferences, specific questions being asked, and specific goals on the farm. For example, soil health tests that do not include physical indicators (e.g. aggregate stability) are not the most suitable tests for determining whether soil structure is improving in your field as a result of adding cover crops into your cropping system. Additionally, not all of the available tests are based on research that is directly applicable to every cropping / management system. If evaluating and monitoring changes in soil health as a function of changes in management practice(s) is a goal, here are some helpful sources to guide your choice:

Wisconsin Studies

Studies from Wisconsin show that practices like cover cropping, reduced tillage, using manure, and keeping the soil covered help improve many of the well-studied soil health tests below[1,2,3,4]. This suggests that these indicators are useful for tracking changes in soil health over time as farm practices change.

1. Soil Organic Matter (SOM)
2. Soil Organic Carbon (SOC)
3. Total Nitrogen (TN)
4. Potentially Mineralizable Nitrogen (PMN)
5. Permanganate Oxidizable Carbon (POXC)
6. Mineralizable Carbon (MinC)
7. Autoclaved Citrate Extractable (ACE) Protein

National Studies

The Soil Health Institute tested over 30 soil health indicators at 124 research sites across North America[5]. Their results suggested prioritizing the three tests below, because they responded to farm practices, are easy to measure, and described key soil functions with less overlap than some other tests:

1. Soil organic carbon (SOC)
2. Aggregate stability (AS)
3. Mineralizable Carbon (MinC)

Concluding Thoughts

Generally speaking, a primary goal for soil health testing is to detect real changes in soil function over time as a result of changes that are made in crop and soil management practices (e.g. reduced tillage, cover cropping, etc.) As discussed in this resource, there are several sources of variability in soil health test results (e.g. sampling location, time, and depth, and laboratory use). Additionally, soils are inherently variable, as is local weather.

Without consistency in sampling and lab selection, there is a greater likelihood for variability in soil health test results, making it more difficult to evaluate whether your soils are progressing the way you'd like. To maximize your ability to accurately detect changes in soil function by using soil health tests, consistency is key.

COOPERATIVE EXTENSION SERVICE
United States Department of Agriculture
University of Wisconsin-Extension
La Crosse County Offices
212 North 6th Street
La Crosse, WI 54601

Sam Bibby
Regional Crop Educator
Email: sam.bibby@wisc.edu
Phone: (608)219-2055

Beth McIlquham
Regional Livestock Educator
Email: beth.mcilquham@wisc.edu
Phone: (608)632-0599