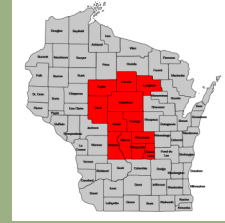


Extension Central News



Spring Edition 2024

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EXTENSION CENTRAL NEWS

A cooperative effort of multiple Central Wisconsin Counties and Wisconsin Extension.

Our Mission

To be the primary source of research based agricultural information and education for the agricultural community in Central Wisconsin.

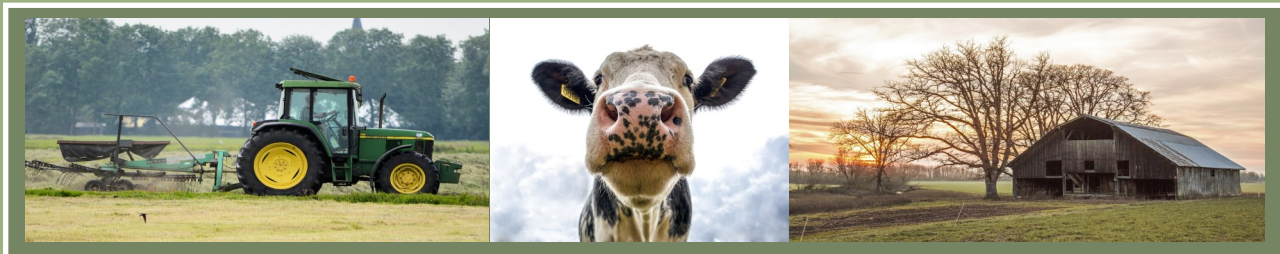
Know What Weather Is Headed Your Way!

Sign up today to get weekly, in-season email updates from the Wisconsin Ag Climate Outlook by visiting go.wisc.edu/ExtWIClimateOutlook. Each report includes helpful maps regarding temperature, precipitation, and comparisons to recent weather and climate patterns to help you make the best decisions you can around planting, irrigation, nutrient application, and more important factors in keeping you crops growing.

go.wisc.edu/ExtWIClimateOutlook



Sign up for weekly email updates for timely weather and climate updates most relevant to you and your farm.



High Digestibility Forage

Often the result from annual cool season grasses and winter cereals.

Matt Lippert

Wood and Clark County Dairy Educator

Extension received a Sustainable Agriculture Research and Education (SARE) grant to test alternative forages, many used as cover crops, to see if they are suitable to consistently produce high quality forage for lactating dairy cows. A good indicator of this is the NDFD30 hour test- Neutral Detergent Fiber- 30 hour rumen digestion digestibility test. Here are the preliminary results of the samples submitted from several areas of the state:

If this seems jargonish, the second to the last line ivNDFD % NDF is the row to look at. These samples average over 70% NDFD30. For comparison the top entrees in the World Dairy Expo Forage Superbowl contest for alfalfa haylage averaged under 60 NDFD30. https://worlddairyexpo.com/file_open.php?id=476

Alfalfa is recognized as the “queen of forages” for dairy cattle and an important part of most high producing lactation rations.

Another part of the SARE grant funded study was interviewing producers if they were successfully feeding these forages, typically haylage or balage for lactating cows and in most instances they were. The SARE study is another piece of evidence that winter cereals and summer annual forages, often used for cover crops can diversify, reduce weather risk and are a valuable addition to the choices available to dairy producers as locally produced potentially high quality forages.

Nutrient composition cover crops

Item	Triticale	Rye	Ryegrass
CP, %DM	13.0 (2.9)	15.9 (0.8)	16.1 (2.0)
aNDF, %DM	52.0 (2.3)	63.2 (1.4)	52.2 (3.5)
Lignin, %DM	3.8 (0.6)	3.2 (0.1)	2.6 (0.6)
ivNDFD, % NDF ¹	71.0 (3.6)	69.6 (0.3)	73.9 (3.1)
uNDFom, % DM ²	8.4 (2.0)	10.1 (0.9)	6.7 (1.5)
	n=6	n=2	n=7

¹Ruminal in vitro NDF digestibility after 30
²Undigested NDF after 240

Ferraretto et al., unpublished

Biosecurity Practices Presentations Aim to Educate Livestock Owners to Help Mitigate Disease Spread

Staff from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and the University of Wisconsin-Madison Division of Extension produced a series of three educational videos on how to protect livestock from disease-causing microorganisms.

The videos offer biosecurity measures livestock owners can take to reduce the risk of introducing and spreading diseases found in Wisconsin.

“No one is more vested in the success of your livestock operation than you are. Your farm’s biosecurity plan depends on you,” said DATCP Assistant State Veterinarian Dr. Elisabeth Patton. “Successful biosecurity plans are dependent on consistent and thorough management steps that you and everyone on your operation practice every single day to reduce the risk to your animals and your herd.”

The three educational videos are hosted on the [DATCP YouTube channel](#). The [first video](#) focuses on basic biosecurity practices for livestock operations, the [second video](#) outlines practices for biosecurity at fairs, shows, and exhibitions, and the [third video](#) provides an overview of biosecurity during disease response.

The videos are appropriate for all age levels, from youth who are planning to show animals at a fair for the first time, to longtime producers. Regardless of experience level caring for livestock, these videos demonstrate how to protect animals and prevent the spread of diseases.

“Biosecurity means keeping animals healthy by protecting them from diseases. Anytime we bring animals together from different farms, there is a risk of sharing germs,” UW-Extension Senior Outreach Specialist Sandy Stuttgart said. “However, there are steps you can take to reduce the risk of introducing and spreading diseases while attending shows and steps to take to not bring diseases home to your farm. →

The videos were created with the expertise of UW-Madison Division of Extension educators and outreach specialists including Sandy Stuttgart, Heather Schlessler, and Carolyn Ihde, DATCP veterinarians Dr. Elisabeth Patton and Dr. Becky Johnson, and DATCP emergency management specialist Kurt Grajkowski.

DATCP and UW-Madison Division of Extension encourage all to share the videos widely with friends, colleagues, coworkers, and family who could benefit from the information.

Funding for this work was provided by United States Department of Agriculture's Animal and Plant Health Inspection Services Veterinary Services (USDA-APHIS-VS) through a cooperative agreement with DATCP.

A Successful No-till Workshop in Juneau County

Written by Sam Bibby

Sam Bibby with UW-Extension Crops and Soils in partnership with Dustin Ladd from Juneau County Land and Water hosted a well-attended no-till workshop just north of Mauston, WI. The workshop was hosted in a farmer's shop and included presentations from UW faculty, discussions between farmers, and on-farm research results.

Dr. Brian Luck with UW-Madison Extension covered no-till planters in his presentation. Brian reminded us to check over several maintenance items such as opening disc wear, play in bushings, vacuum lines, and much more. We also discussed consideration for planting in tough no-till conditions. Brian explained that his research showed an increase of around 2% in germination when using aftermarket closing wheels in place of John Deere's standard rubber wheel. His research also showed that aftermarket closing wheels can alleviate some of the compaction caused by using too much down force. Brian hopes to continue on-farm closing wheel studies across the state. If you are interested in participating and want to try out some different aftermarket closing wheels on your planter, contact your local UW-Madison Extension Crops Educator.

Sam Bibby presented results from the local on-farm research from 2023 in Juneau County. Two local farmers agreed to compare their planters to find out if added technology and precision equipment increased corn yield. They compared an old John Deere 7000 30-inch planter with a brand-new custom-built John Deere 20-inch planter with nearly every bell and whistle available. The experiment was conducted in a replicated strip trial. The new planter had significantly less doubles and error in precision. We did not find a statistically significant yield difference between planters, however the trend in yield favored the new planter by around 7.7 bushels.

Dr. Natasha Rayne and Jordan Schuler with UW-Madison Extension presented on starter fertilizer in no-till corn. Natasha explained how the extra residue in a no-till system can tie up nitrogen. Starter fertilizer is a good solution to this problem. Natasha covered several studies that all conclude starter fertilizer in a no-till system is usually economical and provides better yields. She also covered salt toxicity related to starter and recommended that N + K₂O applications be limited to <70 lbs./ac applied 2X2 and <10 lbs./ac applied in furrow (less in coarse textured soils). Jordan covered the role of phosphorus and potassium in starter fertilizer. She explained how soils testing high in phosphorus can show deficiencies in cold soils because most of the phosphorus is made available by microbial activity, which is significantly less in cold soils. Jordan discussed how potassium starter response is also more likely in the compacted soil systems often found in no-till.

The presentations were supplemented by discussions amongst attendees about planter technology, tips/tricks, and previous experiences with different practices. We all learned something new and made some new connections with other local growers. The workshop was a success, and we hope to try it again next year. Don't hesitate to contact your Extension Crops Educator to discuss implementing these or other ideas on your farm or conducting on-farm research.



Herbicide Rotational Restrictions for Cover and Forage Cropping Systems

Written by [Natasha Paris](#), [Daniel Smith](#), [Rodrigo Werle](#), [Tatiane Severo Silva](#) and [Ryan DeWerff](#)

This publication provides a starting point of reference when considering using cover crops following herbicides in the cropping system. It outlines rotational intervals for many commonly used herbicides in Wisconsin. *However, it is important to note that this article does not replace the information provided on herbicide labels. To see the complete publication with charts of rotation intervals for over 400 herbicides, visit <https://cropsandsoils.extension.wisc.edu/articles/herbicide-rotational-restrictions-for-cover-and-forage-cropping-systems/> or contact your Regional Crops Educator.*

What is a rotational interval?

The rotational interval is the required amount of time from herbicide application to subsequent crop establishment for forage or harvest value. For example, if a herbicide is applied to soybeans with a 10-month rotational interval for winter cereal rye, the rye could be established 10 months after the herbicide application for food or feed value. This rotational interval is a legally required period prior to crop harvest for feed or forage. Cover crops intended for forage value must follow the rotation interval. Cover crops utilized for building soil health do not need to follow the rotational interval; however, they may still be prone to herbicide injury. This herbicide injury is often attributed to herbicide carryover and the chances of injury can be better understood after a field bioassay.

The herbicide label must be referenced prior to making any management decisions. The rotational intervals stated in this publication are the maximum rotational restriction taken from the most current herbicide label available at time of production.

Herbicide Carryover and Cover Crop Establishment

For cover crops to accomplish their intended goals, they must establish well. The establishment of cover crops can be compromised by the soil residual herbicides initially applied to manage weeds in the preceding cash crop. The persistence of these residual herbicides may affect cover crop establishment later in the growing season and can be affected by a wide range of management (tillage, application rate, and herbicide application method) and soil properties (moisture, temperature, soil colloid properties, chemical reactions, pH, microbial population, soil texture and organic matter) (Krausz et al., 1992).

Cover cropping and using residual herbicides is not impossible but is challenging. Herbicide resistant weed management should be considered when planning herbicide applications. The cost of herbicide program, cover crop benefits, and resistance management should all be considered.

Cover Crops vs. Forage Crops

A crop is classified as a cover crop when no forage or grain biomass is harvested. A cover crop is established for benefits to the soil, cropping system, and environment. A cover crop becomes a forage crop when biomass is harvested for feed. This includes harvesting the crop via grazing or mechanical collection. A cover crop can be used for forage; however, most pesticide labels do not provide the plant back restriction time required from pesticide application to grazing or harvest for cover crops, only forage crops. Therefore, requiring the maximum rotational restrictions be utilized. If these restrictions are not followed, harvesting a cover crop for forage value is illegal.

Crop rotation restrictions will vary in length and should be examined for all pesticides and crops in the rotation. A cover crop that will not be harvested for any value can be legally established following any herbicide application, however, the grower takes all responsibility for cover crop injury or failure that may result. Several herbicide labels provide guidance for using cover crop following application. A bioassay is often recommended to evaluate herbicide injury potential.

Winter Cereal Rye Termination for Forage Systems

Winter cereal rye is often harvested as forage and questions arise when the rye should be terminated prior to the subsequent crop. Pre-harvest termination treatment is often illegal. Harvesting winter rye without another termination treatment is effective at reducing biomass and slowing regrowth; however, a second termination method is often required. Chemical treatment of rye regrowth, which may include residual herbicides for the following crop, should accommodate the pre-harvest interval, plant back restrictions for the subsequent crop and not have an antagonistic effect on the rye termination. Post-harvest glyphosate treatments are effective and legal methods of terminating winter rye, and these applications can occur immediately following harvest with no reduction in efficacy.

Using Bioassays to Measure Residual Herbicides

A field bioassay is often required or recommended prior to establishing crops following residual herbicide application. A bioassay is a test that measures the effects of residual herbicides in the soil on a crop in a controlled trial. Herbicide residues may vary in strength and be variable throughout the field depending on management and environmental conditions. A few variables include soil texture, pH, and drainage. A bioassay should be done using the typical management practices for the crop to be planted following herbicide application.

Two types of bioassay may be recommended. The most common field bioassay, is done by using a small area of the field to plant a small trial area of the intended crop. This crop should be monitored for injury symptoms, stand reductions, reduced biomass/grain production. If injury occurs, extend the rotational interval to the next growing season. If the cover crop planted is for soil building and will not be harvested, a small tolerance for injury may be acceptable.

The second type of bioassay is done in a controlled setting. This includes collecting a small amount of treated soil from the field and placing in pots. These pots should be in a controlled environment (near a window and heated indoor area). The intended crop should be planted in these pots and observed for herbicide injury. More info can be found in [“A Quick Test for Herbicide Carry-over in the Soil”](#) (Klein et al. 2008). A bioassay does not replace the rotational interval.

Crop Variety and Hybrid Sensitivity to Herbicides

The data presented in this publication shows the rotational cropping intervals for common Wisconsin forage, grain and cover crops. Hybrids and varieties make a difference in herbicide tolerance. Genetic engineering allows crops traditionally injured by some herbicides to allow over the top applications and limited plant back restrictions. Always understand what traits and tolerances are being used in your cropping system.

When using maximum rotational restriction interval data tables, use these ground rules:

- 1. Always read, follow, and understand the herbicide label. The label is the law.**
- 2. These data are intended to be an introduction to herbicide rotational intervals; *always consult the label before making management decisions.***
- 3. Maximum rotation length is shown; rotation length is often dependent upon herbicide application rate, tillage, soil type, and yearly rainfall.**
- 4. The data are formulated for Wisconsin producers and utilize rotational data for areas that receive 30+ inches of precipitation per year.**
- 5. Some herbicide rotations do not consider frozen soils to count towards the minimum rotation interval; consult the label to clarify this information.**

Credit Your On-Farm Nutrients to Reduce Crop Production Costs in 2024.

By Ken Schroeder, Extension Agricultural Agent

In a year when input prices are high and projected commodity prices are less than desirable, it is important to plan ahead. Spend some time assessing your cost-of-production. Consider your on-farm nutrients from livestock manure and forage legumes when determining purchased fertilizer needs. This year especially you can't afford not to take those nutrient credits from the manure you applied or will apply and to make sure you are applying at consistent known rates. In other words, it's important to know what you are spreading and how much.



What is the value of my livestock manure? Manure nutrient content can vary greatly from farm to farm and is affected by animal species and management practices as well as manure storage, handling, application, and weather. It is preferable to analyze your manure occasionally or when you make major management changes. In the absence of having analysis done, typical nutrient content or book values are available in the UW-Madison Extension publication A2809 Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin <https://go.wisc.edu/td47jz> Table 9.2 page 75, total nutrient content of manures tested in Wisconsin. Let's look at liquid dairy manure (<4.0% DM) for example.

Nutrient	Nutrient Content (lb./1,000 gal)	Nutrient Cost ¹ (\$/lb.)	Equivalent Nutrient Value (\$/1,000 gal)
Nitrogen	14	\$0.60	\$8.40
Phosphorous (P ₂ O ₅)	4	\$0.58	\$2.32
Potassium (K ₂ O)	14	\$0.40	\$5.60
Sulfur	1.1	\$0.69	\$0.76
Total value/1,000 gal			\$17.08
¹ – Early December 2023 Fertilizer Costs			

If you are applying 10,000 gallons per acre that is the equivalent of 140 lb. N, 40 lb. P, 140 lb. K and 11 lb. S with an estimated \$171 per acre value. See A2809 pages 73-77 for more detail about taking nutrient credits from manure. My advice to you, put that manure out there where it's needed most, don't over apply, and take the nutrient credits.

Don't forget about those legume credits. If you are planting into old hay fields that still have or had alfalfa, clover, or other legumes in them there are valuable nutrients available to credit towards this year's crop. Nitrogen (N) credits can range from 40 to 130 lbs./acre or more depending on legume density and growth when terminated. For book values see A2809 <https://go.wisc.edu/td47jz> chapter 9 pages 78-80.



Then use pre-plant soil nitrate and pre-sidedress soil nitrate tests to adjust your nitrogen application rates. Soil nitrate tests estimate the amount of plant-available nitrate-nitrogen in the root zone. This allows N recommendations to be adjusted for field-specific conditions that can influence crop N needs.

What are the possible sources of root-zone nitrate-nitrogen?

- Manure applications.
- A preceding legume crop.
- Carryover from fertilizer applications in 2023.
- Soil organic matter mineralization.



Two tests are available, the pre-plant soil nitrate test (PPNT) and the pre-sidedress soil nitrate-nitrogen test (PSNT).

- PPNT involves deep soil sampling to a depth of 2 feet before planting. This test should be used when you suspect significant nitrate carryover as when previous growing season and overwinter precipitation was normal or below, or if previous crop N application was in excess of crop needs from poorer than expected yields. Some nitrate carryover occurs most years.
- PSNT uses shallow soil sampling to a depth of 1 foot when corn is 6 to 12 inches tall. This test predicts the amount of plant-available N that will be released from organic sources during the growing season. It is most useful for confirming legume, manure, and cover crop N credits and providing site-specific estimates of soil N availability.

What are the benefits of testing?

- If the amount of soil nitrate-nitrogen is significant, subsequent N applications can be reduced or in some cases, eliminated!
- Lowering your cost-of-production by avoiding N applications in excess of crop needs.
- Helping the environment by decreasing potential for nitrate movement to groundwater by avoiding over-application of nitrogen.

NOTE: Soil nitrate testing is not reliable on coarse-textured sand or loamy sand soils because their nitrate content can change rapidly.

For details on PPNT and PSNT procedures, see University of Wisconsin Extension Nutrient and Pest Management publication Soil Nitrate Tests for Corn Production in Wisconsin <https://go.wisc.edu/zy457w> and Extension publication A2809 pages 46-50. This publication is available for viewing and downloading at the Extension Learning Store <https://learningstore.extension.wisc.edu/>, under soils in the agriculture dropdown menu or enter A2809 in the search box.

Dusting off those soil test results, and those nutrient management plans may be one of the best things you do this year. You really can't afford to over apply nutrients any year, especially this year when input prices are high and commodity prices are less than desirable.



UW–Madison Extension Badger Crop Connect webinars begin April 10

Contact: Sam Bibby, Regional Crops and Soils Educator: Sauk, Vernon, and Juneau Counties
sbibby@wisc.edu

Badger Crop Connect is a free webinar series during the growing season (April - Oct.) that connects farmers and ag professionals directly to research, resources, and strategies to optimize crop yield, quality, and profitability on Wisconsin farms this year.

This series continues in its fifth year starting April 10.

This webinar is of interest to farmers, crop advisors, agronomists, and more. A wide range of topics will be addressed throughout the season, as Extension educators and specialists inform programming with what they're seeing on real Wisconsin farms and within research. The series provides relevant crop and soil updates, agronomic considerations related to weather and climate, research-backed resources, and more to ensure farmers are as up-to-date as possible about the multitude of factors affecting their crop season.

Join industry experts, UW–Madison researchers, and Extension specialists and educators every second and fourth Wednesday from April to October at 12:30 p.m. on Zoom for discussions on timely topics selected by educators based throughout Wisconsin. Dates are listed below.

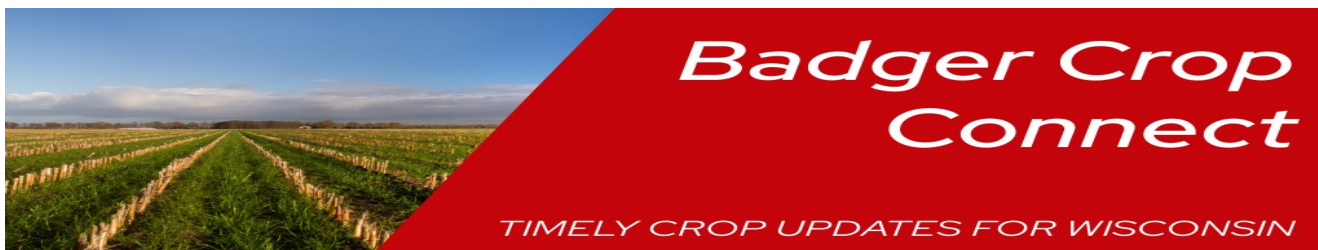
April 10, April 24
May 8, May 22
June 12, June 26
July 10, July 24
Aug. 14, Aug. 28
Sep. 11, Sep. 25
Oct. 9, Oct. 23

Certified Crop Advisor CEUs will be available for webinars. Recordings of webinars will be available online for on-demand viewing.

To register, sign up for email updates, and watch recorded webinar content, visit go.wisc.edu/badgercropconnect.

If you have questions or are in need of accommodations, please contact Sam Bibby at sbibby@wisc.edu.

Zoom registration link: uwmadison.zoom.us/meeting/register/tJcpcO-gqz8tG9POaMDT7Tw3a99eaJC-QSXI#/registration



IMPORTANT

Goat Health Programs and Herd Replacement Management.

The proceedings from the Clark County Goat Field Day, held March 18, are available for \$10 from the Clark County Extension Office, 517 Court St Rm #104, Neillsville, WI 54456 715 743 5121 or contact matthew.lippert@wisc.edu

Over 60 pages of information on vaccination, sanitation, vitamin and trace mineral supplementation, rumen development for goat producers either meat or dairy.

Avian Influenza in Dairy

As this goes to press there is a lot unknown about **HPAI- Highly Pathogenic Avian Influenza** that has now been found in dairy cattle in several states and seems to be spreading rapidly. Biosecurity is our best defense. Keep updated as information becomes available.

Here are some biosecurity videos from Extension to help protect your herd:

<https://dairy.extension.wisc.edu/2024/03/29/biosecurity-practices-presentations-aim-to-educate-livestock-owners-to-help-mitigate-disease-spread/>

Some characteristics observed so far are increased incidence in older animals, sudden drop in feed intake and milk production, characteristics of thick and yellowish milk, fever. Most animals survive but production loss on infected animals can be severe.

STOCKMANSHIP STEWARDSHIP

August 28-29, 2024

Lancaster, Wisconsin



Save the Date! Coming to Lancaster, WI on August 28-29 is a two day Stockmanship and Stewardship workshop. This is a unique educational experience featuring low-stress cattle handling demonstrations, panel discussions and presentations on herd health management, land stewardship, grazing management and industry updates you won't find anywhere else. Learn from stockmanship experts Curt Pate and Ron Gill! Participants can get BQA certified or continuing Ed. Credits if you are already certified. More details and information will be made available soon.



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