UNIVERSITY OF WISCONSIN - EXTENSION

Central Wisconsin Agricultural Extension Report

Volume 20 | Issue 4 **October | 2017**

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Give your fields a little cover this winter

Alana Voss—Agriculture Agent, Adams & Juneau Counties

As the days get shorter and the temperatures get cooler, everyone is starting to prepare for the fall harvest. The question is what is going to be done to the fields after this fall harvest? The soil is important to take care of all year long and if you can make a difference by creating cover for over winter, wouldn't you look into that option?

Cover crops offer a great opportunity to battle against soil erosion from wind and water. During the winter with no cover crops, you can chance losing almost 40 percent or more of your plant residue that would be protecting your fields in the spring during major rain storms. Cover crops offer the chance to increase soil cover almost completely and will help minimize soil erosion. Which in return will help increase soil depth due to the soil formation being greater than the soil erosion.

Creating a solid layer of organic matter in your soil will help tremendously for growing your crops, but you need to make the proper changes to insure you are saving that organic matter from soil erosion and decomposition. Organic matter has many benefits to your fields by increasing your soil fertility, creating stable and improved aggregation, and increasing the biological activity. The aggregation of the organic soil matter will create the opportunity for more pore space, increased water filtration and holding capacity, root growth, less runoff, and improve microbial activity.

The number one nutrient everyone wants and needs in their soil... Nitrogen. By putting cover crops on your fields, instead of just adding more fertilizer, you can increase the access to nitrogen from the plant material from previous crops. Creating a cycle to replenish the nitrogen into the soil can become very easy once you have set a time frame for ending the cover crop prior to the next crops growing season.

Having cover crops helps create healthy soils with the proper nutrients and microorganisms. Offering a great soil ecosystem and improving the chemical and physical properties of the soil. Meanwhile, helping to keep the number of weeds down, through physical suppression through mulch and the competition of space and nutrients being used/returned by the cover crops to the soil. By selecting varieties of cover crops known for weed suppression you can improve the chances of battling weeds. Furthermore, cover crops can help support good insects to be drawn towards your soils to help with keeping a healthy soil ecosystem.

As you plan for the fall harvest, consider using cover crops to benefit your soil. The benefits that can be gained by including this management option into your farm will help with the multiple facets in creating a healthy soil to grow your next year's crops.

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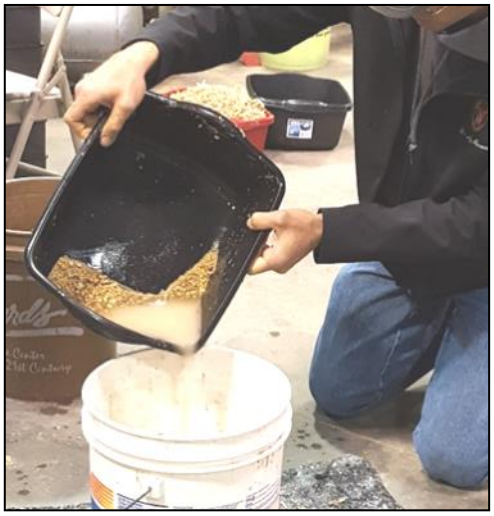
Checking on Your Kernel Processing During Harvest

Lyssa Seefeldt—Agriculture Agent, Marquette County

Starch digestion in the ruminant animal is improved by starting with cracked corn kernels that have been broken down into smaller pieces. This allows the animal to get the most out of their corn silage feed. This is one reason why it is so important to have proper corn processing. The right time to check your kernel processing is when you can make adjustments and correct incomplete processing, during harvest. The method described below is requires only a couple of simple tools and is easy to do.

What you need:
Dishpan or 5 gallon bucket
Water to fill dishpan (3/4 full) or 5 gallon bucket (1/2 full)
Cloth or paper towel



Separating out corn kernels to determine adequacy of processing.

Fill your pan (3/4 full) or bucket (1/2 full) with water. Grab 2-3 representative handfuls of the harvested crop and add to the pan or bucket.

Next you will lightly submerge and stir the material which allow the kernels to be separated from the stover. This should take under a minute for separation to occur.

Scoop the stover that is floating on top of the water out. You should be left with a murky water and kernels of corn at the bottom of the pan or bucket. Carefully pour off the water, being careful to not dislodge the kernels at bottom of the container.

Pour the kernels onto the cloth or towel and squeeze out any excess water. Spread the kernels out to evaluate size and amount of processing. Ideally, there should be nearly no whole or only cracked kernels. The majority of the kernels should be broken into pieces, with few that are only cracked or only nicked open.

For additional information on kernel processing evaluation, check out the Team Forage article that contains some tips and tricks to help you with challenges you may encounter with this process, check out https://goo.gl/cxtPDe.

Red circle-presence of whole kernels is not desirable. Yellow oval-kernel particles are adequately broken down.

Additional analysis can be done to determine a corn silage processing score. This process determines particle processing using a series of sieves to separate out different size particles. The challenge with this process is that it doesn't allow you to make adjustments in the field during harvest.

Below: Harvested material is added to the sieve box on top. Boxes are shaken according to a protocol. Once that step is completed, the fractions that made it out of the top sieve and into the ones below it are weighed. This allows the lab to determine the proportion falling through to the lower sieves. Ideally the majority of the particles would end up in the middle sieve, with lesser portions remaining in the top sieve and the bottom box.

To see the complete protocol with the sieve shaker boxes, visit https://goo.gl/QiqCQG.

Separated feed fractions after completing the shaker box separation.

Visit the Central Wisconsin Agricultural Specialization Team on the web http://fyi.uwex.edu/cwas/

Food Safety Modernization Act

Ken Williams—Agriculture Agent, Waushara County

The Food Safety Modernization Act (FSMA) was signed into law by President Barack Obama on January 4, 2011. The FSMA has given the Food and Drug Administration (FDA) new authority to regulate the way foods are grown, harvested and processed.

This law has the potential to affect many vegetable producers throughout Wisconsin. Farms that;

- grow, harvest, pack, or hold covered produce;
- have sold produce, during the previous 3-year period, worth more than $25,000 direct to consumers;

May, beginning in January 2018, be required to document risk reduction measures taken to prevent food-borne illnesses through contamination of raw produce, and have them ready for inspection with respect to the following areas:

- Personnel qualification and training
- Health and hygiene
- Biological amendments of animal origin and human waste
- Domesticated and wild animals
- Equipment, tools, buildings, and sanitation
- Sprouts
- Records

Vegetable producers who sell directly to a food processor such as a vegetable company or a potato company may be exempt from the requirements of this Act. These producers may be asked to provide letters from the processing company that would indicate that the product is blanched or substantially cooked such that the commercial processing adequately reduces the presence of microorganisms.

Farms that fall under this rule will need to establish and implement a food safety system that includes an analysis of hazards and risk based preventative controls. This would be a written food safety plan that would include the following parts.

Hazard analysis: Identify any know or foreseeable biological, chemical, and physical hazards. These hazards may occur naturally, are intentionally or unintentionally introduced.

Preventative controls: Measures will be required to insure that hazards requiring preventative control will be minimized or prevented. This would include process, food allergen, and sanitation controls, as well as supply-chain controls and a recall plan.

Good manufacturing practices must be updated and clarified. Management is required to ensure that all employees who manufacture, process, pack or hold food are qualified to perform their assigned duties. Employees must have the necessary combination of education, training, and/or experience necessary to manufacture, pack, or hold clean and safe food. Individuals must receive training in the principles of food hygiene and food safety, including the importance of employee health and hygiene.

EL COMPAÑERO

UW Extension

UNA GACETA DE INFORMACIÓN PARA TRABAJADORES DE FINCAS LECHERAS

SALUD DE HATO

JULIO/AUGUSTO 2017

La Salud de la Vaca Fresca para la Lactancia Productiva

Dr. Michele Barrett, DVM, Zoetis Servicios Técnicos de Lácteos

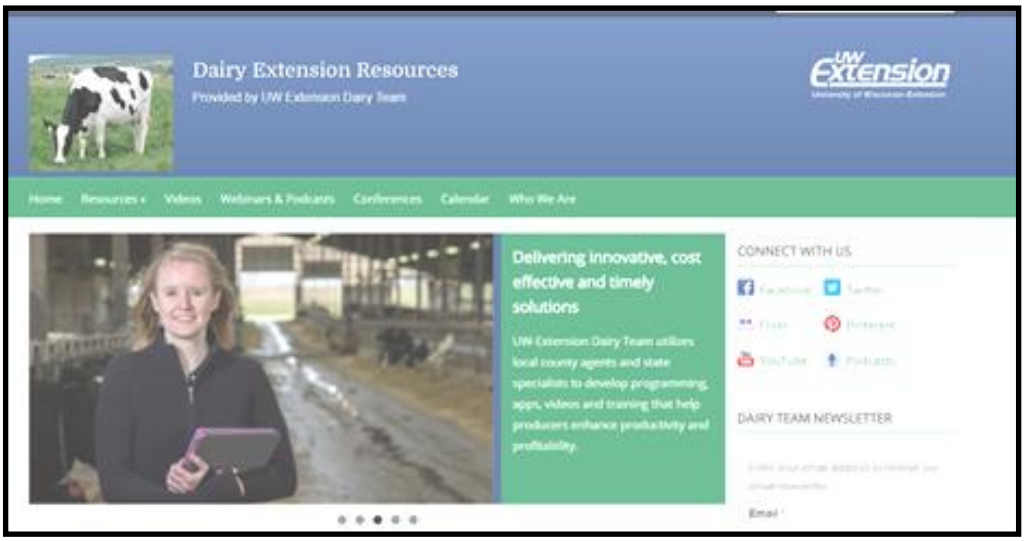
Un inicio saludable de la lactancia es esencial para la salud de las vacas lecheras y las fincas lecheras. Las enfermedades de las vacas frescas pueden disminuir la producción de leche, el éxito reproductivo y la longevidad de las vacas dentro de un ganado.

La prevención es la mejor manera de evitar los impactos de enfermedades de las vacas frescas. El parto es estresante y, naturalmente, disminuye la capacidad de combatir la infección. Las fincas pueden apoyar una función inmunológica más saludable en las vacas frescas, maximizando el espacio de alimentando a > 30 "por vaca, minimizando los movimientos entre los grupos para prevenir el estrés social y mejorando el confort de camas.

There is a newsletter to assist with training and updates for dairy farm workers in either English or Spanish it is Dairy Partner/ El Compañero. Go to the website: **https://fyi.uwex.edu/dairypartnerelcompanero/**

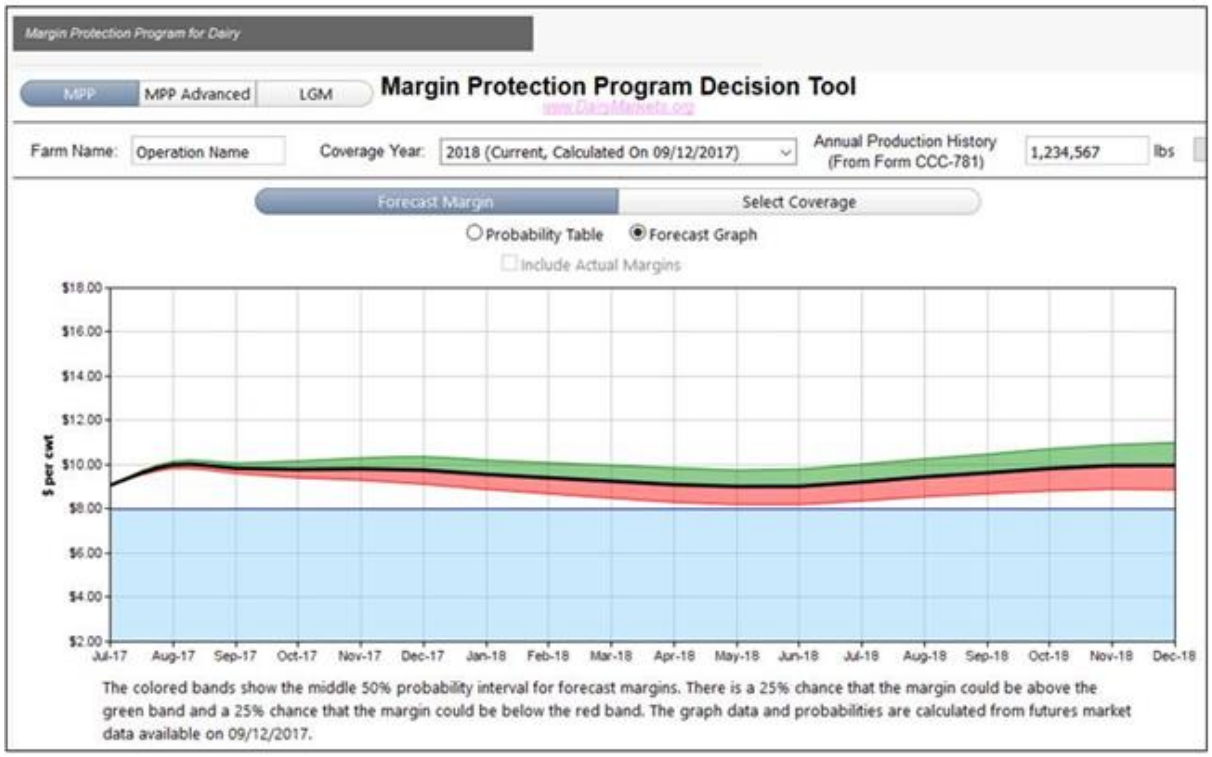
Scan issue archives for specific topics and more information at the website.

The UW-Extension Dairy Team Website and newsletter. Go to: **https://fyi.uwex.edu/dairy/** to access the UW Dairy Team website, while there sign up for the Dairy team e newsletter.



Brian Gould, UW Understanding Dairy Markets website: http://future.aae.wisc.edu/

Given the recent news of the ability of dairy farmers to opt out of the MPP for 2018 coverage and the prospects of >$8.00/cwt margins, I think the coverage decision will be an easy one especially if participation in the LGM-Dairy program is a being considered a possible replacement. Below is our current estimate of likely MPP margins for calendar year 2018 and the probability of obtaining $8/cwt or less margins conditional on current CME futures and options conditions. There will not be any MPP payments for the remainder of 2017.For 2018, the minimum expected margin is $9.02/cwt for the March/April period reflecting increased milk supply. For these two months, we obtain an estimated probability of 9% of the margin being between $8.00 and $7.50/cwt, a 3% probability of being between $7.50 and $7.00 and a 2% MPP probability of being less than $7.00.



Working for Higher Butterfat Tests!

Matt Lippert—Agriculture Agent, Wood County

Recently butterfat has been contributing more to the milk check than protein has. This is a reversal of a long term trend. It is difficult to determine if this is permanent but there have been many positive messages to consumers about butterfat for several years now and it appears that interest, and appetite for butterfat is more than just a fad. This is seen in higher butter sales and whole milk sales increasing while skim and lowfat decrease.

Unfortunately as we push for high production butterfat tends to have a negative correlation between total pounds of milk and fat percentage. We need to be mindful of a sweet spot in or diet and management where we have both. Monitor this by calculating energy corrected or fat corrected milk for your herds as a way to compare tradeoffs in your herd between greater production or improved component percentages.

> ECM **formula** = (0.327 X **milk** lbs.) + (12.95 X fat lbs.) + (7.65 X protein lbs.).**Energy Corrected Milk** ECM determines the amount of **energy** in the **milk** based upon **milk**, fat and protein and adjusted to 3.5% fat and 3.2% protein.

Let's first review how low butterfat tests come about. Approximately half of the fatty acids in butterfat in milk are synthesized in the mammary gland, de novo fatty acids. A robust active healthy rumen is good for total milk production, protein synthesis and de novo fatty acid synthesis. Highly digestible forages, appropriate starch and sugar levels, correct ration moisture, fiber length, low contamination from mycotoxins and soil/dirt from harvest operations all contribute to a healthy rumen.

The other half of fatty acids are absorbed from the bloodstream. Many are familiar with acetate to propionate ratio. If the ratio gets too low, we tend to see lower butterfat in the milk. This is because acetate and butyrate are used to make the fatty acids in butterfat while propionate is used to form glucose, which is used to make lactose in the mammary gland. The amount of lactose produced is directly proportional to the volume of milk produced. The level of lactose is relatively constant in milk for low testing or high testing herds or breeds, running about 4.7%. If you cow has access to more propionate more milk will be produced but without a corresponding increase in the other fatty acids butterfat as a percent is likely to decrease. This is a simple dilution effect.

Another condition leading to lower butterfat test is low rumen pH, sub-acute rumen acidosis. With acidosis there tends to be an increase the amount of propionate and also lactic acid produced. When a rumen is in balance, it maintains a pH of about 6.0 to 6.2 by having enough buffer from saliva to counter acid production. Make sure effective fiber levels are adequate and include buffer at adequate amounts In addition, check forage dry matters, accuracy in mixing, changes in feeds and diet formulation.

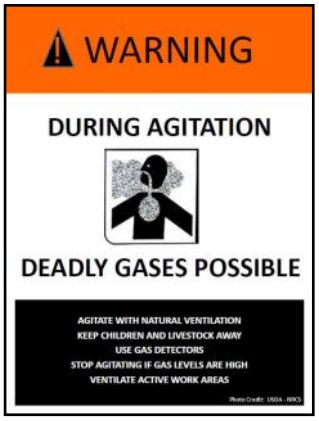
Other factors that can affect butterfat test:

- The type and amounts of added fat to the diet. Too much vegetable fat available in the rumen can also be harmful to rumen bacteria. Rumen bacteria will convert some of the unsaturated fatty acids in vegetable oils to saturated fatty acids. Highly processed feeds such as distillers grains or extruded soybeans will have more available vegetable oil than whole oil seeds such as cottonseed or roasted soybeans. Consider supplementing with a commercial protected fat supplement with a known fatty acid profile.
- Feeding monensin may decrease butterfat test by 0.1%. This effect is variable and not usually a reason to discontinue monensin. Monensin is usually a low cast and effective additive but typically not a benefit for butterfat test.

Look at the cows. Are at least half of them chewing their cud? Does the manure look too loose? Is it watery or bubbly, indicating some degree of acidosis? Is it variable from one cow to the next indicating sorting, dominance and lack of feed bunk space fewer and larger meals resulting in slug feeding? Next, look at all the feedstuffs. Is there mold present? If so, have some tests done to identify them and quantify amounts. Work with your nutritionist to determine if some additive might help.

There are many possible reasons for a lower butterfat test, with the current market there are even more reasons not to be satisfied with or to allow low butterfat test to happen.

What are the Risks from Manure Gases When Agitating Manure?



Ken Schroeder—Agriculture Agent, Portage County with excerpts from UW-Extension publication Reducing Risks from Manure Storage Agitation Gases

As we enter the fall manure hauling season be sure to be thinking safety and review potential hazards associated with handling stored manure.

During manure storage, naturally occurring microorganisms in manure degrades organic material in the absence of oxygen (anaerobic conditions) producing gases including carbon dioxide (CO2), methane (CH4), ammonia (NH3), and hydrogen sulfide (H2S). Large quantities of these gases can be trapped in manure and released upon agitation of the manure prior to pump out. Depending on conditions, gas concentrations may reach levels hazardous to human and animal health.

What are the dangers?

- Carbon dioxide and methane are both odorless and colorless with the potential to displace oxygen in confined spaces thus leading to asphyxiation. This is of greater concern in confined spaces where gas dispersion is impeded. Methane is also explosive at concentrations of 5-15%. Being odorless and colorless, these gases are impossible to detect without monitoring equipment.
- Ammonia can be extremely irritating to the eyes, respiratory tract, and other mucous membranes. It is highly recognizable by it's familiar and pungent urine odor. Depending on concentration, ammonia exposure causes symptoms from eye and nose irritation and strong coughs to airway dysfunction and death.
- Hydrogen Sulfide is the manure gas of greatest concern as it has human health impacts including respiratory irritation, pulmonary edema, and death at relatively low concentrations. At low concentrations of 0.01-1.5 ppm this gas has the smell of rotten eggs. WARNING – at slightly higher concentrations of 100-150 ppm the nerve cells of our noses are paralyzed and we can no longer smell the gas. Concentrations of hydrogen sulfide can soar from 5 ppm to more than 500 in seconds after agitation begins. Concentrations above 600 ppm can kill an individual after taking only one or two breaths.

Recommended Safety Practices.
Predicting gas emissions for a given set of manure and onsite environmental conditions is difficult. Therefore, monitoring is recommended to alert workers or others of toxic conditions near manure storage facilities. While asphyxiation is unlikely at the edge of a manure pit where air moves freely, monitoring for oxygen will alert workers when concentrations drop below safe levels (19.5% oxygen). NEVER ASSUME A NO-RISK SITUATION! Previous incidents suggest exposure of workers to toxic concentrations of H2S is of greatest concern. Additional precautions should be used when a farm has under-barn manure storage. This type of manure storage can produce dangerous gas concentrations in the barn, particularly when agitating increasing health risks to animals and humans. It is highly recommended that animals and people be moved from the barn prior to agitating an under-barn manure storage for the duration of agitation. Additional ventilation is also recommended for these systems.

Have an Emergency Response Plan. It is critical to identify an emergency response plan (including a route for escape) prior to agitating or working around any manure storage. This plan should be discussed with all those working at the facility, including outside contractors who might come onsite to provide services. If a worker becomes incapacitated during an emergency situation, procedures must be in place to safely remove the downed worker(s). Procedures should not involve another person entering the potentially dangerous area without a fully self-contained breathing apparatus, as this could result in additional persons being exposed. Appropriately designed warning signs should also be used to warn people to the risk of gases, particularly when agitating.

This is just the tip of the iceberg on manure gas safety. The recent UW-Extension publication "**Reducing Risks from Manure Storage Agitation Gases**" is required reading for anyone involved with pumping and hauling manure from all manure storage systems. It can be found online at the UW-Extension Agricultural Safety and Health website https://fyi.uwex.edu/agsafety/ under the Manure Gas Safety Resources tab. Please call me at 715-346-1316 with question or for printed copies. See our Portage County Manure Safety Resources page https://portage.uwex.edu/agriculture/manure-safety-resources/ for more information. Safe hauling!

UW Extension Dane County

FAIRSHARE CSA COALITION

2018 Organic Vegetable Production Conference

February 2 & 3

Alliant Energy Center, Madison, WI

The inaugural 2017 conference brought together 200 participants from around the Midwest and beyond. This year's conference will feature farmer panels on cauliflower, cucumbers, tomatoes, strawberries, and niche hoophouse crops. There will also be time for farmer to farmer round tables on labor recruitment and management, right-sizing the farm, favorite varieties, and more.

This conference is based on farmer to farmer networking and information sharing. Extension specialists support the dialogue with research based information on diseases, pests, and fertility. Detailed handouts on the featured vegetable crops are provided to all participants. Interpretation is available in Hmong and Spanish.

"I liked the diversity of farmers: age, scale, geography, etc. I met a lot of really great people and saw/enjoyed catching up with old friends."

-2017 Conference Attendee

Save the date and spread the word! Registration opens in November.

Dairy Dialogue Day™

Thursday, October 26, 2017

9:30AM – 3:30PM

This is more than a tour!

Pick the brains of fellow dairy farmers. Engage in conversations that will allow you to walk away with new and effective ideas and insights.

See how two high-performing dairies operate

Heller Farms, Inc.
Alma Center, Wis.

Cody Heller and his siblings are the third-generation at Heller Farms where they're currently milking 1,500 cows. The farm has a methane digester that produces enough electricity to power the farm in addition to 250 other homes every day.

Selz-Pralle Dairy
Humbird, Wis.

Selz Pralle Dairy is home to high-producing, strong cow families and show-ring champions. The Pralles utilize the SCR activity and rumination tracking system which has enabled them to reduce incidence of DA's by 80% and drug costs by 50%. Their cows milk 105 pounds of 4% milk daily.

Facilitator

Dr. Paul Fricke, Dairy Science Professor at UW-Madison, will lead discussions as you get a closer look at the farm-management practices of these two high-impact dairies.

Dairy AdvanCE *up to 3.75 credits*

Bus pick-up at 9:30AM

Best Western,

600 Oasis Rd., Black River Falls, WI

Registration costs **$60 for members** and **$185 for non-members.**

Limited to the first 50 dairy farmers that register.

Call **800-947-7379** or visit **www.pdpw.org** to reserve your seat today.

SAVE THE DATE!

For more information:
http://fyi.uwex.edu/covercrop/

cover crops in WISCONSIN

The 2018 Wisconsin Cover Crop Conference will take place on February 27 (9am-4pm) at the Holiday Inn in Steven's Point. This will be a statewide conference geared toward helping Wisconsin farmers use cover crops more effectively. Many of the presenters will be Wisconsin grain and livestock farmers speaking from experience about what has worked and hasn't worked in their Wisconsin cropping systems. Barry Fischer, Indiana NRCS Soil Health Specialist and renowned cover crop expert, will be the keynote for the event. A full agenda will be released soon.

Green Lake County

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CENTRAL WISCONSIN AGRICULTURE SPECIALIZATION (CWAS)

A cooperative effort of seven Central Wisconsin Counties and University of Wisconsin Extension.

University of Wisconsin-Extension

Our Mission

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

University of Wisconsin, State Department of Agriculture and Wisconsin counties cooperating.
An EEO/AA employer, University of Wisconsin-Extension provides equal opportunities in employment and programming, including Title IX and American with Disabilities (ADA) requirements.