



KEWAUNEE COUNTY EXTENSION CONNECTION

Connecting people with the University of Wisconsin

FoodWise Nutrition Education

- September is Hunger Action Month page 2
- Great Apple Crunchpage 2
- Harvest of the Month: Apples.....page 2
- Microwave Baked Applepage 2

Families, Finances & Wellness

- Planning AHEADpage 3
- Strong People, Strong Bodiespage 3
- Money Matterspage 3
- Resilient Co-Parenting Classespage 3

In this Issue:

4-H & Youth

- Enrollment is Open page 4
- Fall Forum.....page 4
- State Arts Teamspage 4
- Volunteer Training.....page 5
- 4-H Banquet.....page 5

Agriculture Education

- Improve Soil Health..... page 6
- Yellowing on Soybean Leaves page 6
- Badger Dairy Insight..... page 6
- Free Well Testing..... page 6
- Estimate Forage Stability..... page 7
- 2023 Clean Sweep page 7

Back Page

- From Our Partners page 8

UW-Madison Division of Extension * Patrick Nehring, Regional Community Development Educator
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NONPROFIT NETWORKING OPPORTUNITIES

EXCHANGING IDEAS

UW-Green Bay and UW-Madison Extension continue to offer resources for nonprofit organizations in the Kewaunee County area, these resources are listed at www.uwgb.edu/nonprofit-network.

Upcoming Conversations are:

A Funder's Take on Grantmaking

October 12, 8:30-9:30 a.m., Zoom
Discuss a funder's take on grant making with a small group of peers and Madison Darling of the Provident Health Foundation in Marinette, Wisconsin, who will share their knowledge and participate in Q&A.
Registration: <https://uwmadison.zoom.us/j/9vce6uqj4oHNM9dTzryelKsLUH0nHDI12x#/registration>

Positive Organizational Culture

October 26, 8:30-9:30 a.m., Zoom
Discuss how to create a positive organization culture with a small group of peers and Executive Director Lisa Kogan-Praska of the Boys & Girls Club of Green Bay who share knowledge and participate in the Q&A.
Registration: https://uwmadison.zoom.us/j/MqdO6vpzMsH9GN7ra_W_2yxGdFyYUrNdUv#/registration



LIGHTHOUSE LAUNCH

- PITCH EVENT -



Kewaunee County
Economic Development Corporation



DOOR COUNTY
Economic Development Corporation

The Lighthouse Launch Pitch will be held on November 15 at 6:00 PM in Algoma. Local contacts for the pitch contest are Michelle Lawrie from the Door County Economic Development Corporation michelle@doorcountybusiness.com and Ben Nelson from the Kewaunee County Economic Development Corporation ben.nelson@kcedc.org. Information about the pitch contest and how to register will be from October 2-27, so now is your opportunity to put your thoughts together to sell your business or organization plans. The registration form for the competition will be available on the Kewaunee County Economic Development Corporation website, <https://kewauneeconomyedc.org/> and the Extension Kewaunee County website <https://kewaunee.extension.wisc.edu/>

For more information contact Patrick Nehring at (920) 391-4616 or patrick.nehring@wisc.edu

FEED SUMMIT

GREEN BAY, WISCONSIN - NOVEMBER 13-14, 2023

WHO SHOULD COME?



Food & Farming Businesses

IDEATION Phase

Entrepreneurs in the ideation phase generally have a great idea, have a skill, or have a key resource or property, but haven't started selling their goods or services yet.

STARTUP Phase

Entrepreneurs in the startup phase are generally producing goods or services and selling them to customers. They might not be profitable yet, and might be trying to grow their business. This includes many food and farming businesses in their first 5 to 10 years in business.

WHY ATTEND?



Learn, Connect, Promote

Learn Business FUNDAMENTALS

Entrepreneurs will learn how to start or grow their business through interactive, engaging sessions about business model success!

Speakers include business experts in the food and farming industry and dozens of successful Wisconsin food and farming entrepreneurs who will share their business stories.

Build Business CONNECTIONS

Entrepreneurs will connect with business consultants, service organizations, and other entrepreneurs through engaging workshops and networking activities.

MARKET Your Business

Entrepreneurs have the opportunity to promote their business in the exhibition area of the conference, to provide any shelf-stable samples and promotional items.

Scan the QR code for more information and to register.

GREEN BAY WISCONSIN



Extension

UNIVERSITY OF WISCONSIN-MADISON
COMMUNITY FOOD SYSTEMS

For more information contact
Food Entrepreneurship Specialist
Jessica Jane Spayde
Spayde@wisc.edu, 608-225-5799
foodsystems.extension.wisc.edu

Receive the Extension Connection in your inbox!

Want to have the Extension Connection at your fingertips? Sign up today to receive the Extension Connection directly to your inbox! Be the first to know all the exciting events and opportunities available.

Visit <https://kewaunee.extension.wisc.edu/extensionconnection/> to sign up today!



EXTENSION CONNECTION ADDRESS CHANGES

Please let us know if your mailing address changes. Since the Extension Connection is mailed 3rd class, it is not forwarded, and UW-Extension must pay for incorrect addresses. Call 388-7141 for address changes or you will be removed from the list.

The Extension Connection

University of Wisconsin-Extension
A monthly publication for Kewaunee County residents. These programs are supported by your tax dollars. We look forward to receiving your comments. Please call us at the phone numbers provided in the individual headers.

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Image: Nick Youngson, Creative Commons

September is Hunger Action Month

History

In 2008, Feeding America established Hunger Action Month as a nationwide push to get people involved with the hunger crisis.

During September, people everywhere help feed the needy in their neighborhood to ensure that people who live with hunger every day can get some relief. A recent article in the Green Bay Press Gazette stated that 1,280 people in Kewaunee County are food insecure, about 1/3 of these are children.

You can help!

Create a food drive and collect items for donation to a food pantry. It is helpful to call and ask what the pantry needs at this time.

- Lakeshore Community Food Pantry in Kewaunee (920-388-9050)
- Kewaunee County Food Pantry in Algoma (920-487-3663)

Start a day of service with your 4-H club, scouts, book club, or other organization. Volunteer at a pantry, grow extra food in your garden, or collect money to donate.

Raise Awareness

Challenge yourself to buy food for the day with \$4.16, which is the daily average budget for someone receiving Supplemental Nutrition Assistance Program (SNAP, formerly food stamps) benefits.

An activity idea:

On an empty stomach, I can't

1. Take a paper plate
2. Write at the top: "On an empty stomach, I can't ..."
3. Fill in the blank with one effect of hunger, such as
 STUDY
 SLEEP WELL
 PLAY OUTSIDE
4. For young children, have them draw a picture of what they can't do well when they are very hungry.

5. Create a collage of paper plates at your school, church, or organization. Or take a photo of yourself holding the plate and post it on social media.
6. Encourage others to do the same.

Hunger is solvable together. Your support makes a difference during Hunger Action Month and all year long.

Wisconsin Harvest of the Month materials are available in Spanish and English. All are free for anyone to download. If your school qualifies as low income (50% or more children qualify for free or reduced-price meals), FoodWise will print the materials you want to use for free. Materials include classroom posters, menu images, activity guides, and digital graphics for use with 20 common Wisconsin-grown fruits and vegetables.





Harvest of the Month materials are available in Spanish or English:
<https://healthyliving.extension.wisc.edu/welcome-to-harvest-of-the-month/>




Celebrate healthy eating by purchasing and crunching into a locally grown apple in October!

Thursday, October 12, 2023 is the 10th Anniversary

 Register your Crunch: healthyliving.extension.wisc.edu/events/apple-crunch

 **Everyone is Welcome!** K-12 schools, early care and education sites, hospitals, colleges and universities, farms, state and local agencies, non-profit organizations, local businesses, groups, and even households can register to Crunch! Anyone who wants to show support for local farmers and food can join!

 Resources at the web site include

- Apple recipes for K-12 Schools and ECE sites
- Resources for apple farmers
- Teaching food justice through the Crunch!
- Apple browning experiment
- "Why I Crunch" coloring pages
- Zoom backgrounds, postcards, and press release

Let's All Crunch!



Ingredients (1 serving)

- 1 apple, washed
- 1/8 cup brown sugar
- 1/4 teaspoon cinnamon

Nutrition Information per serving

- 222 calories, 0 g fat, 0 g sat fat,
- 0.6 g protein, 58 g carbohydrate,
- 5 g fiber, 10 mg sodium

Instructions

1. Thoroughly wash hands for 20 seconds and clean all food preparation surfaces.
2. Wash apple and remove core.
3. Cut a thin slice off the bottom of the apple to form a flat surface. Place apple in a microwave-safe baking dish.
4. Mix brown sugar and cinnamon in a small dish. Spoon mixture into the center of the apple.
5. Cover with wax paper and microwave on high power 3 to 4 minutes or until apple is soft.

APPLES

Choose: firm, shiny apples that smell fresh.

Store: in the refrigerator in a plastic bag. Use within 3 weeks.

How much? 1 large apple = about 1 cup sliced or chopped.

Source: Adapted from K-State Research & Extension, Kids a Cookin': Microwave Baked Apple. What's Cooking? USDA MyPlate Best!



UW-Madison Division of Extension * Renee Koenig, Human Development and Relationships Educator
920-388-7137 * renee.koenig@wisc.edu

Planning AHEAD: A Gift for Your Family

Many people strive to arrange their affairs to live well in their later years, and ensure that their end-of-life plans follow their wishes. Still, it is something that many people find challenging. A new workshop series called, "Planning AHEAD" is for adults of all ages. Participants learn about end-of-life decision-making tasks including health care wishes, financial responsibilities, legal requirements and documentation, distribution of personal property, end-of-life care options, and dealing with grief. The program's goal is to reduce the stress experienced by survivors and to ensure that their wishes are honored. Each attendee receives the step-by-step **workbook** with resources to reinforce the content and use as a guide to continue planning.

Renee Koenig, UW-Madison Extension Educator, has facilitated the Planning AHEAD 7-session series in Kewaunee County and online. Participants across Wisconsin have indicated that the course has had a positive impact on them:

- 100% of the participants stated they learned enough to move forward with planning.
- over 93 percent of the respondents said that they felt more confident in having conversations with loved ones related to end-of-life wishes and knowing where to find reliable resources for more information on end-of-life planning.
- the majority of respondents, 79%, in the next three months, will update their end-of-life planning forms.
- 71% of participants will encourage someone else to do end-of-life planning.


Participants shared that the workshop was: eye-opening, informative, comprehensive, affirmative, and comfortable. One participant stated: "I have already recommended this workshop to many friends and colleagues, regardless of their age. I'm so grateful to have had this opportunity and so grateful for the people I met as a result." And, another participant said, "I came into this course with a relatively good idea of my plans for the future. This course reinforced my ideas and offered new ideas and perspectives. I'm glad I attended the course."

Check the **Planning AHEAD website** <https://aging.extension.wisc.edu/programs/planning-ahead/> or contact Renee Koenig at renee.koenig@wisc.edu or 920-388-7137 for more information if you are interested in registering for a future course.



STRONG People™

STRONG BODIES



Join us for the StrongBodies Program!

StrongBodies has been shown to increase strength, muscle mass, and bone density. Classes are held twice weekly and include progressive resistance training, balance training, and flexibility exercises.

Questions? Contact Jen Whitty at jennifer.whitty@wisc.edu

Virtual StrongBodies - Fall 2023 Session

Dates: October 10 through December 21

Time: Tuesdays and Thursdays, 9:00 – 10:15 am

How to Sign Up: Register online at <https://go.wisc.edu/6693j7>

A welcome email with the Zoom link to join class will be sent in the week prior to the series or within 3-5 days if registering after October 10

MONEY MATTERS LIVE: CREDIT AND DEBT SERIES

Whether you are looking to get out of debt or learn how to improve your credit, this **FREE** online series is for you! Each session will include a short presentation and lots of time for discussion and questions. You can attend all 4 sessions or as many as your schedule allows.

Sessions:
Tuesday nights on Zoom from 7 pm-8 pm

Session 1: October 3
How to Access & Read a Credit Report

Session 2: October 10
Credit Score Basics

Session 3: October 17
How to Build Good Credit

Session 4: October 24
Strategies for Getting Out of Debt

REGISTER NOW
<https://go.wisc.edu/qz2ngw>

Resilient Co-Parenting classes



About the Classes

The Resilient Co-Parenting classes are for parents or caregivers who are raising their children together while living apart. These classes are a source of ongoing support for co-parents as they continue their journey. Anyone can join!

Class topics include:

- Having difficult conversations
- Helping children with strong emotions
- Coping with stress during big changes

How Do I Join a Class?

All class are free. Join us the first Thursday of each month at 7 PM. Classes are virtual on Zoom. **Register here:** <https://parenting.extension.wisc.edu/co-parenting/>

Money Matters - A series of lessons in October

Register here: <https://go.wisc.edu/qz2ngw>



Aging-Friendly Kewaunee County

We want to hear from you!

Please join us and help make Kewaunee County an Aging-Friendly place to live. Our group meets monthly. We discuss ideas and plan strategies to help our neighbors stay healthy and active in our county.

Contact Renee Koenig at 920-388-7137 or renee.koenig@wisc.edu for details.





**UW-Madison Division of Extension * Vacant
(920) 388-7141 for 4H Information**

Enrollment is Open!

Find Your SPARK in 4-H! 🌸
Encuentre Su Chispa en 4-H! 🌸

Develop Sparks ~ A Place to Belong ~ Get Involved in our Communities!
¡Desarrollo de chispas ~ Un lugar de pertenencia ~ Involúcrese en nuestras comunidades!



FIND YOUR SPARK

WITH KEWAUNEE COUNTY 4-H

WWW.4HONLINE.COM



FALL FORUM

**GRADES 7-13
NOVEMBER 4-5, 2023
GREEN LAKE CONFERENCE CENTER, GREEN LAKE, WI**

Fall Forum is an opportunity for youth in grades 7-13 and adult leaders to attend the statewide training weekend with county and state staff. Planned by a team of youth and adult volunteers from the Wisconsin 4-H Leadership Council with the support of county and state staff, our hope is that 4-H youth and adult leaders will come together to connect, collaborate, celebrate, and continue building excitement and energy for a new year of 4-H learning.

Fall Forum includes:

- An inspiring keynote address by Tim Talen
- Opportunities to participate in dozens of youth- and adult-led workshops on Saturday
- Choose your own adventure interactive activities on Saturday night
- Introductions for WLC Candidates AND WI 4-H Hall of Fame Laureates



To learn more about Fall Forum, visit go.wisc.edu/4hfallforum.



**UW-MADISON EXTENSION
KEWAUNEE COUNTY**

4-H VOLUNTEER VIP TRAINING

Are you re-enrolling as a volunteer or plan to be a new volunteer this year? Sign up today for VIP training!

Trainings start in September and new dates will be added as facilitators are confirmed.

Visit <https://4h.extension.wisc.edu/resources/volunteer-resources/4-h-foundations/volunteers-in-preparation/> for a current list of dates available.



An EEO/AA employer, University of Wisconsin-Madison Division of Extension provides equal opportunities in employment and programming, including Title IX and American with Disabilities (ADA) requirements.
La Universidad de Wisconsin-Madison División de Extensión, un empleador con igualdad de oportunidades y acción afirmativa (EEO/AA), proporciona igualdad de oportunidades en empleo y programas, incluyendo los requisitos del Título VI, Título IX, y de la Ley para Americanos con Discapacidades (ADA).

STATE ARTS TEAMS

4-H DRAMA COMPANY

creates a stage performance incorporating acting, song, and dance. Show content is a collaborative effort between company members and their director. Each Drama Company member contributes ideas for the show and works with the group to problem solve issues on the set and in the script, which is culminated into a final performance during Summer Academy. There are also many in-person opportunities to connect and rehearse.



4-H ARTS TEAM

creates a collaborative piece of artwork and works to artistically support statewide programming opportunities. The team members also teach seminars and train to be peer leaders for county and regional events, as well as create an Art Show display for Summer Academy. The 4-H Arts Team is led by a professional artist who teaches team members artistic techniques using a variety of mediums.

Applications for State Arts Teams open in Fall in 4HOnline and are due January 15, 2024. Please review the position descriptions for more information on application requirements.

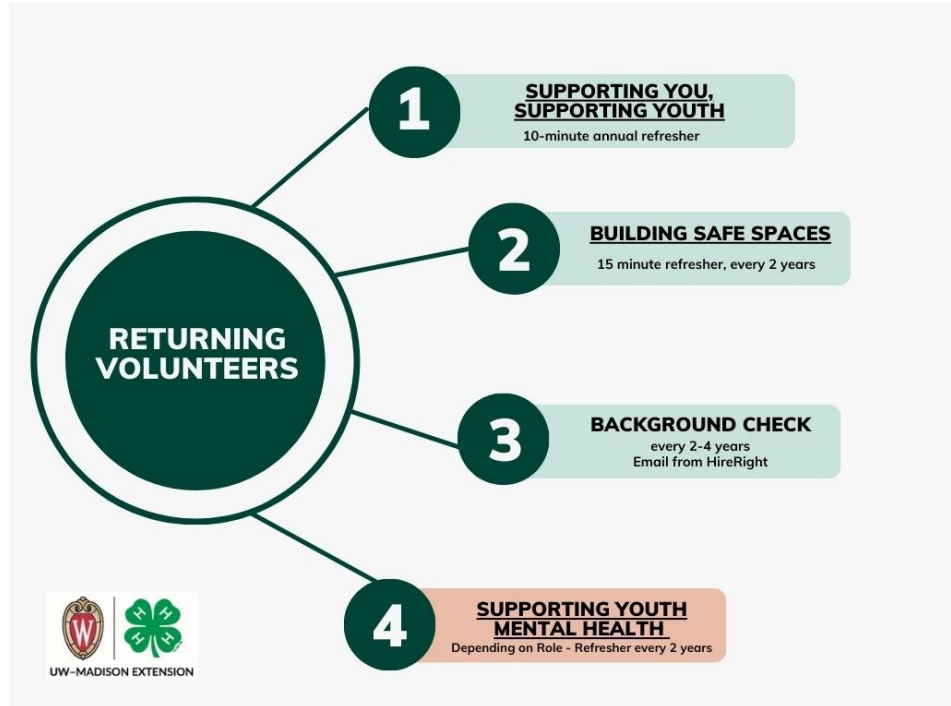
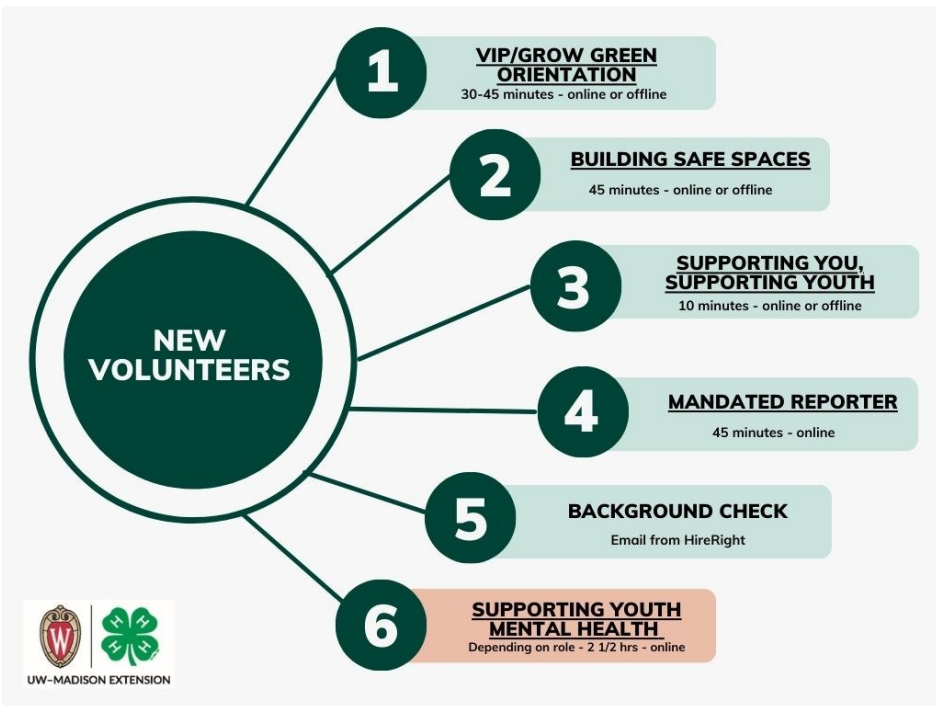
For more information on State Teams, visit go.wisc.edu/4hstateteams.





UW-Madison Division of Extension * Vacant
(920) 388-7141 for 4H Information

Volunteer Training Flow Charts



Our state 4H training office has made these handy flowcharts to help our wonderful volunteers ensure they have all the necessary trainings to be an active volunteer in Kewaunee County 4-H. You can see what trainings you need by accessing your 4-H Online account.

Descriptions for each training can be found here: <https://4h.extension.wisc.edu/resources/volunteer-resources/training-for-volunteers/>

Welcome to the 2023-2024 4-H year!

Join us at the 2023 Kewaunee County 4-H Banquet!

Hi 4-H families, we hope you will join us at the annual Kewaunee County 4-H annual banquet on October 21st. At the banquet, we will celebrate outstanding Kewaunee County 4-H members, teen leaders, adult volunteers, and community partners. This event is open to all 4-H families, volunteers, and community members. We hope you can be part of this celebratory evening!

Details about the banquet:
(Please note: You must RSVP ahead of time to attend. You will not be able to register at the door.)


Date: Saturday, October 21st
Location: The Rendezvous, E896 County N, Luxemburg, WI 54217
Doors open at 6:30pm (please check-in upstairs upon arrival)
Meal begins at 7:00pm
Awards, speakers, raffle, and door prizes to follow

Cost:
* \$10.00 for current adult volunteers, teen leaders, and 4-H members
* \$20.00 for spouses and other guests not part of 4-H

Questions should be directed to Darlene Boeder, (920)676-4580

To register: Visit the Kewaunee County 4-H website to download a form at: <https://fyi.extension.wisc.edu/kewaunee4h/>

Or you can register at the office or a form can be sent to you by calling (920)388-7141.

Or you can snip out the form here 

Please return the form and the payment by October 13th to the Extension office at 625 Third St., Luxemburg, WI 54217.

****Please note, you need to be registered to attend. You will not be able to register at the door.**

2023 Kewaunee County 4-H Banquet



Join the celebration of outstanding Kewaunee County 4-H members, teen leaders, adult volunteers, and community partners. This event is open to all 4-H families, volunteers, and community members. We hope you will accompany us for this celebratory evening!

Please cut off and return the RSVP (located at the bottom of this flyer) to the Kewaunee County UW-Extension office by October 13th, 2023.

Saturday, October 21st

Location: The Rendezvous, E896 County Rd N, Luxemburg, WI 54217

Cost: \$10.00 for current volunteers, teen leaders, and 4-H members
\$20.00 for spouses and other guests not part of 4-H

Time: Doors open at 6:30pm (please check in upstairs upon arrival)
Meal begins at 7:00pm
Awards, speakers, raffle, and door prizes to follow

Questions can be directed to Darlene Boeder at (920) 676-4580.

You must be registered to attend. You will not be able to register or pay at the door.

Please cut off this portion and return by October 13th to:
Kewaunee County 4-H, Attn: Leaders Banquet, 625 Third St., Luxemburg, WI 54217
Please make checks payable to: Kewaunee Co. 4-H Leaders Association

Name(s): _____
Address: _____
Phone: _____ E-mail: _____
Cost:
Number of current adult volunteers, teen leaders, or members _____ @ \$10.00 = _____
Number of spouses and/or other guests attending not part of 4-H _____ @ \$20.00 = _____
Total amount enclosed: _____



UW-Madison Division of Extension * Aerica Bjurstrom, Regional Dairy Educator
920-388-7138 * aerica.bjurstrom@wisc.edu

Want to improve soil health? Start with minimizing erosion.



Soil health is something we hear a lot about these days. Cover crops, soil health tests, diversity in crop rotations, and reduced compaction are all ways to improve soil health. While it is true, cover crops and diverse rotations can improve soil health and tests to measure progress are good, there is some low hanging fruit that farmers may be missing when it comes to improving soil health.

Minimizing water soil erosion is a way to improve soil health that does not require a large investment in equipment, time, and seed. Erosion damages soil health in two ways. First and most obvious is by thinning the A horizon, or topsoil by soil erosion and exposing less productive subsoil. Second, and possibly the most destructive way soil health is impacted is by raindrop impact and running water sorting soil components and degrading soil by leaving behind less productive components.

The process of erosion is a multi-step process that starts with rain impacting bare soil. Rain impacts with the force of a small bomb exploding and such force can destroy soil structure at the surface. Soil is thrown into the air and when the soil particles fall back to earth, the particles are suspended in water. Sand, silt, clay, and organic matter are separated from one another in the moving water. The heavier sand settles out of the soil water solution sooner than the lighter clay and organic matter. Silt particles fill pores at the soil

surface as silt settles out forming a crust, reducing the ability of the soil to absorb water. Clay and organic matter are the lightest weight of the soil particles and are carried the farthest, often leaving the field and entering surface water. Clay and organic matter have a negative charge associated with them and the negative charge holds soil nutrients for plants to use for growth and development. Loss of clay and organic matter reduces the ability of the soil to supply nutrients to plants. Even small changes in percent sand, silt, clay, and organic matter can impact soil productivity. Sand settling out on the field can bury more productive soils and reduce crop productivity.

Crop residue left on the soil surface acts as a cushion against raindrop splash. Think of crop residue as an airbag for your soil. An airbag will keep you from impacting your vehicle's steering wheel or dashboard in an accident. Crop residue will keep the raindrop bomb from exploding on the surface of bare soil. Management of crop residue that leaves the soil surface covered is one of the best ways to improve soil health, whether or not using cover crops. Tillage that buries residue reduces the impact of cover crops and slows or eliminates the improvement of soil health you are trying to accomplish by planting cover crops. Chisel plowing in a cover crop system can reduce carbon and organic matter accumulation in soil by up to 20% according to research in Minnesota. Reducing erosion is the first step to improving soil health.

Written by UW Crops & Soils Educator Steven Okonek
This article was originally published in Wisconsin Agriculturist Magazine.

Yellowing leaves on soybeans? That has to be a potassium deficiency, right? Maybe not.



While yellowing in the middle or upper canopy is usually a sign of potassium deficiency, it could mean something worse is lurking below the soil surface. Often, a superficial glance isn't enough to get to the root of the problem. Going through a checklist to eliminate potential causes provides the best chance at proper diagnosis and treatment.

- Potassium deficiency
- Herbicide damage
- Fungal disease
- Pest pressure
- Lack of water

If those are ruled out, the answer could be underground. Soybean cyst nematodes (SCN), the tiny, worm-like parasites, can decrease yields substantially without inducing obvious symptoms. However, SCN can produce yellow leaves when populations are high. SCN management comes in two forms: Preventing the infestation of fields and reducing the nematode populations in infested fields.

Did you know that:

- Soybean Cyst Nematode (SCN) was first found in the U.S. in North Carolina in 1954?
- SCN is the most serious soybean pest in the U.S. and causes more than \$1 billion in soybean yield losses each year?
- SCN is a microscopic roundworm that occurs in all major soybean production areas?
- SCN causes no specific symptoms, and its effects are often not dramatic?
- Many growers do not know they have a problem until a severe infestation develops.
- Yield losses due to SCN can be over 50%?

Understanding the life cycle of SCN, routine soil testing and proper crop management can reduce the incidence of this pest.

Wisconsin's Free SCN Testing Program

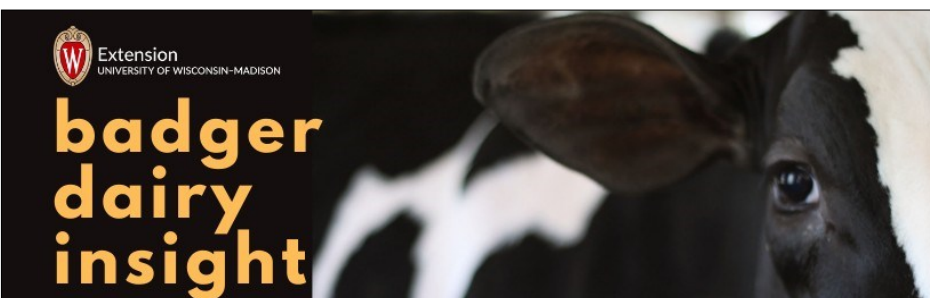
Fall is a great time to collect extra samples for Soybean Cyst Nematode testing. Through a grant from the Wisconsin Soybean Marketing Board, Wisconsin growers are eligible to have 4 soil samples analyzed for SCN and other plant parasitic nematodes at no charge.

Want to test? Request a free soil sampling kit!

By email: freescntest@mailplus.wisc.edu

By phone: 608-262-1390

Written by Chris Clark, Northeast WI Crops & Soils Outreach Specialist



Join the University of Wisconsin-Madison – Division of Extension's Dairy Program on the third Tuesday of each month from 11am-12 pm CST for the Badger Dairy Insight webinar series. New this year we are switching our webinars to a monthly platform. We are featuring your local Extension Dairy Program Educators and UW Specialists as they present on current dairy topics. Take the opportunity to learn from and discuss with experts on the dates below.

There is no charge to participate in the sessions, however pre-registration is required to allow access.

- **October 17, 2023**—Manure Processing Systems
- **November 21, 2023**—Moving cows without the cows: new options for interactive employee training
- **December 19, 2023**—Udderly efficient: management strategies for optimal performance

For more information and to register visit <https://dairy.extension.wisc.edu/badger-dairy-insight/>



FREE WELL TESTING FOR KEWAUNEE COUNTY RESIDENTS

Cost: FREE for Kewaunee County residents

PRE-REGISTRATION IS REQUIRED

Call 920-845-9740 to register, beginning September 5

Test Date: October 16 Deadline: when all 300 tests are filled



WISCONSIN COASTAL MANAGEMENT PROGRAM



Well testing brought to you by Kewaunee County Land & Water Department
Funded by Coastal Management Grant and Peninsula Pride Farms



UW-Madison Division of Extension * Aerica Bjurstrom, Regional Dairy Educator
920-388-7138 * aerica.bjurstrom@wisc.edu

Using lab tests to estimate forage stability and fermentation efficiency

Laboratory commercial feed tests provide information on protein, level and digestibility of fiber, minerals, which are all factors that determine the feeding quality of the forage. Today many forage tests provide information beyond the energy and protein in the feed but also feed fermentation quality and its stability in the manger. Having efficient fermentation is critical to ensure the forages being fed are highly palatable and digestible.

There are a few lab results that tell us how well the feed is fermented which include:

- Moisture/ Dry Matter (DM).
- Major fermentation acids produced: lactic, acetic, propionic, and butyric.
- Protein fraction converted to ammonia (Ammonia-CP) during fermentation.
- Protein fraction bound to fiber via excessive heating during ensiling is Acid Detergent Insoluble Crude Protein (AD-ICP).
- Remaining ethanol or water-soluble sugar (ESC or WSC) fractions are not converted to acids during fermentation.

DM/Moisture: Desirable fermentation is most likely in the range of 35-45% DM or 55-65% moisture, depending on the forage and storage structure used. Both haylages that are too wet or too dry may have poor fermentation. Dry haylage will be harder to exclude oxygen out of the silo/pile. Oxygen must be depleted to begin anaerobic fermentation. Wet forage will encourage a clostridial fermentation which is not desirable. A slower fermentation will deplete desirable sugars and produce excess heat. The sample haylage in Figure 1 is wetter than average, but still within the range where good fermentation can be achieved.

pH: Is key for evaluating the fermentation process. For the most part, when pH is within the normal range, the lower the pH the better the fermentation. This pH is 4.24 in the range of low enough to make the feed stable.

Lactic, Acetic, Propionic, and Butyric Acids:

Terminology

- acetic acid = acetate
- lactic acid = lactate
- propionic acid = propionate
- butyric acid = butyrate

Lactic acid is the predominant fermentation acid found in silages. Adequate levels of lactic acid indicate minimal dry matter losses and proper fermentation. Lactic acid production is a more efficient fermentation, losing less energy through fermentation than acetic acid production. The pH drops more rapidly with high lactic acid fermentation. Low lactic acid production can result from: restricted fermentation due to high DM content or cold weather, samples taken after considerable aerobic exposure, and silages affected by clostridial fermentation (high in butyric acid).

Product:	E Hylg	Test Mode:	N9
		Feed Type:	Haylage - Mixed
		Sub Type:	Mixed
Moisture	65.49%	Magnesium	%DM 0.25 0.23 - 0.40
Dry Matter	34.51%	Potassium	%DM 3.28 2.06 - 3.51
pH	4.24	Sulfur	%DM 0.26 0.18 - 0.33
		Chloride	%DM 0.94 0.17 - 1.17
		Lactic Acid	%DM 4.41 0.34 - 6.51
Crude Protein	%DM 21.15	Acetic Acid	%DM 1.32 0.11 - 3.31
AD-ICP	%CP 10.17	Propionic Acid	%DM 0.33 0.13 - 0.42
ND-ICP w/SS	%CP 17.21	Butyric Acid	%DM <0.01 0.02 - 0.93
Protein Sol.	%CP 60.47		

Figure 1. Partial forage analysis report for a haylage sample. Dry matter, pH, protein solubility, and volatile fatty acids help determine if the forage had good fermentation.

Acetic acid provides forage with a vinegar odor and taste but helps with aerobic stability by inhibiting the proliferation of yeasts and molds. High levels can be caused by extremely wet silage, prolonged fermentation, loose packing, or slow silo filling.

Propionic acid provides forage with a sweet smell and taste. Very low levels of this acid are found in well fermented forages.

Butyric acid (butyrate) is often associated with wet forages and increases over time in storage, and it is caused by clostridial fermentation. What are the negatives associated with butyric acid in the forage? Butyric smells rotten, it is objectionable to the cow and intake will drop. Also, for transition cows that are prone to risk of ketosis, butyrate is a ketone, high butyrate forages are therefore already elevated for ketones, even when the liver will produce more, pushing the cow to ketone overload more easily. The prolonged butyric fermentation will deplete digestible energy sources such as sugars and lactic acid, lowering the digestibility of the feed, and causing the production of amines and ammonia.

Typical concentrations of fermentation end products in legume, grass, & corn silages, and high moisture corn.					
	Leg-ume Si-lage (30 – 40% DM)	Leg-ume Si-lage (45 – 55% DM)	Gras s Si-lage (30 – 35% DM)	Corn Si-lage (30 – 40% DM)	High Moisture Corn (70 – 75% DM)
pH	4.3 – 4.7	4.7 – 5.0	4.3 – 4.7	3.7 – 4.2	4.0 – 4.5
Lactic Acid (%)	7 – 8	2 – 4	6 – 10	4 – 7	0.5 – 2.0
Acetic Acid (%)	2 – 3	0.5 – 2.0	1 – 3	1 – 3	< 0.5
Propionic Acid (%)	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1
Butyric Acid (%)	< 0.5	0	0.5 – 1.0	0	0
Ethanol (%)	0.2 – 1.0	0.5	0.5 – 1.0	1 – 3	0.2 – 2.0
Ammonia-N (% CP)	10 – 15	< 12	8 – 12	5 – 7	< 10

DM = Dry Matter | CP = Crude Protein
Adapted from: Kung and Muck. 2017. Silage Harvesting and Storage. Large Dairy Herd Management.

Most inoculants for haylage are primarily lactic acid producers, you can often tell an inoculated forage vs. one not inoculated by the amounts of lactic and acetic acid. Inoculated forages will be higher in lactic acid. This haylage has favorable levels of both lactic and acetic acids within the normal range found in haylage samples. Butyric acid is undesirable. Wet forages are best fed quickly before the VFA profile deteriorates.

Alfalfa is harder to ferment (drop the pH as low as quickly) than grass or corn silage. This is because alfalfa has high CP concentration and consequently elevated ammonia during fermentation. Ammonia buffers the pH from acid production.

Ammonia-CP: A high concentration of ammonia in haylages or grass silage indicates excessive breakdown of protein caused by slow drop of pH or clostridial fermentation. Depending on the total diet, wet haylage may provide excessive rapidly available protein compared to dryer haylage with a more desirable fermentation.

		Dry Basis	90% Range*
Crude Protein	%DM	21.15	15.2 - 24.3
AD-ICP	%CP	10.17	5.02 - 13.7
ND-ICP w/SS	%CP	17.21	
Protein Sol.	%CP	60.47	34.2 - 65.6
Ammonia-CP	%CP	6.05	1.82 - 12.3

Sugar (ESC)	%DM	1.50	1.11 - 8.06
Sugar (WSC)	%DM	2.79	1.46 - 8.94

Figure 2. Section of the forage analysis report that identifies the protein fraction converted to ammonia (ammonia-crude protein) during fermentation; ethanol- and water-soluble sugar.

AD-ICP: If a forage heats too much in storage, some protein will become unavailable for digestion.

ESC or WSC Sugar: Higher sugar levels indicates these sugars will be available to feed heat producing bacteria when the silage is exposed to air at feed out. Corn silage pH, fermentation acid profile, sugar, etc. have

the same implications as for haylage. Here are some differences between corn silage and haylage:

- As direct harvested it is “cleaner” with less field “dirt” incorporated into the feed. The test that shows this is the ash level of the feed. The soil in haylage can be a source of clostridia spores and induce butyric acid producing fermentation.
- Corn silage is lower in minerals and ferments to a lower pH with less buffering capacity.
- Corn silage ferments rapidly and is high in sugar. There may still be abundant sugar after complete fermentation that will be available when the feed is exposed to oxygen at feed out. This is a potential stability problem with corn silage.
- An additional test to measure yeasts and molds may be a helpful indicator to measure feed stability.
- If inoculant including *L. buchneri* is used, elevated levels of acetate will develop over time. While acetic acid production in haylage is an indicator of slower, less energy-efficient fermentation, acetate is a superior acid for stability, providing resistance against secondary fermentation at feed out. *L. buchneri* slowly produces acetate while in the storage phase and acetate will increase over time. This is desirable because of the higher sugars often found in corn silage that can make a feed unstable at feed out.

Moisture: 64.42			
Dry Matter: 35.58 (Feed Avg = 35.63)			
Carbohydrates	%DM	N=3	4 yr
ADF	21.19	21.01	22.16
aNDF	37.18	38.80	38.88
aNDFom	35.87	37.67	37.44
Lignin	3.52	3.49	4.05
Starch	36.09	34.80	34.81
Sugar (ESC)	0.90	0.85	1.67
Sugar (WSC)	3.76	4.41	4.23
Fermentation Products			
pH	3.82	3.78	3.97
Lactic Acid	6.33	6.03	3.49
Acetic Acid	1.60	2.09	1.51
Butyric Acid	0.00	0.00	0.00

Figure 3. Partial forage analysis for a corn silage sample. Dry matter, pH, protein solubility, and volatile fatty acids help determine if the forage had good fermentation.

The examples provided (Figures 2 and 3) come from two different widely used Midwestern laboratories. Be careful comparing results across labs. These labs do provide information on how the sample compares to lab averages or ranges.

Good forage must be more than simply high in energy and digestibility, it must also be well-preserved and palatable to support high production in dairy cattle.

Written by Matthew Lippert, Jackie McCarville and Lyssa Seefeldt, UW-Madison Extension Specialists. For more information visit <https://dairy.extension.wisc.edu/articles/using-lab-tests-to-estimate-forage-stability-and-fermentation-efficiency/>

Kewaunee County 2023 Clean Sweep

recycle!

ACCEPTABLE ITEMS:

- *Ammunition
- *Ag Chemicals & Pesticides
- *Automotive Fluids
- *Eyeglasses
- *Enamel/Lead/Oil Based Paint
- *Fire Extinguishers & Flares
- *Fluorescent Tubes - \$2.00each
- *Household Chemicals
- *Lawn & Garden Chemicals
- *Medications (Pills, Capsules) incl. Opioids
- *Medical Needles & Syringes (Household)

NON-ACCEPTABLE ITEMS AT CLEAN SWEEP EVENT:

- *Latex Paint
- *Flashlight-Type Batteries
- *Explosives/Fireworks
- *Infectious/Biological Waste
- *Radioactive
- *Smoke Alarms
- *RIVERVIEW TRANSFER STATION WILL TAKE THESE ITEMS CALL (920) 388-2223 FOR FEES:
- *Latex Paint
- *Televisions
- *Contaminated Soil
- *Freon Devices
- *Tires
- *Compressed Gas Cylinders
- *Flashlight-Type Batteries

UPDATED Location!!

Kewaunee County 2023 Clean Sweep Hazardous Waste Collection

SATURDAY, OCTOBER 21, 2023
8AM – NOON

Kewaunee County Fairgrounds
625 Third Street, Luxemburg
— Use Third Street entrance

PRE-REGISTRATION REQUESTED:

Kewaunee County Emergency Management
Call: (920) 845-9701 — Monday-Friday: 8AM-4PM
—OR—
Register Online at www.kewauneeco.org under: Emergency Management
*Clean Sweep

***Free household waste up to 50 pounds**
***Free agriculture waste up to 200 pounds**

*Kewaunee County Reserves the Right to Close Registration Early and/or Reject Any Materials that DO NOT Meet the intent of the Program

The Drug Take Back Portion of this Collection is partially Sponsored by Kewaunee County F.A.C.E.S.



The ADRC of the Lakeshore, along with Community Congregational Church in Kewaunee, will be hosting a Living Well with Chronic Conditions workshop each Thursday beginning October 5th through November 16th (no class November 2nd) from 9am – 11:30am. This workshop is for those with a chronic/on-going health condition such as diabetes, arthritis, high blood pressure, heart disease, chronic pain, depression, anxiety or have residual effects from a stroke to gain new skills to manage your health to help feel better, and take control of your life to do the things you want to do. Please contact the ADRC of the Lakeshore at 1-877-416-7083 with questions or to register.

This workshop is open to residents of Manitowoc and Kewaunee Counties.

KEWAUNEE COUNTY SENIOR RESOURCE FAIR



FREE SCREENINGS & INFORMATION

- Blood Pressure Checks
- Blood Sugar Tests
- Balance Testing
- Memory Screening
- Assistive Technology
- Low Vision & Blindness Equipment

VACCINATIONS

- Must bring insurance cards.

PRESENTATIONS

- 10:00: Kewaunee County Public Libraries
- 11:00: Cooking Demo: ADRC Nutrition Program

BINGO

- Starts at 12:30 pm

OCTOBER 3, 2023

**Kewaunee County Fairgrounds
Expo Hall
625 Third Street, Luxemburg
9:00 am – 12:00 pm**

This event is open to all seniors and caregivers. Allow us to connect you with local services and opportunities to support future needs and maintain a healthy lifestyle!

For more information, call the ADRC at 1-877-416-7083.



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Tus Tswv Hauj Lwm Ntawm (EEO/AA), ntawm lub Tsev Kawm Ntawv Qib Siab (University of Wisconsin-Madison Division of Extension) pab rau kev neaj ncees txog kev hauj lwm thiab kev pab cuam, xws li nyob rau hauv Title VI, Title IX, thiab ntawm tsab cai Americans with Disabilities Act (ADA) yuav tsum kom muaj thiab Feem 504 ntawm the Txoj Cai Kev Pab Rov Tsim Kho Uas Tau Teev Tseg.