

# EXTENSION VIEWS

A Product of Extension Clark County

In this issue: ..... July/August 2023

Questions from My Desk	1-3
Manure Expo 2023	4
Are You Short of Pasture or Forage? Pressure Canner Testing	5
Using lab tests to estimate stability & fermentation adequacy of forages	6-8
Weed of the Month #1: Yellow Nutsedge	8
Clark County Fair Farm Tech Days 2023: Baraboo	9
Should I Top Dress My Alfalfa?	10
Foundations in Gardening Course Weed of the Month #2: Dandelion	11
Conservation Corner Chocolate Dessert Contest at the Clark County Fair	12
Cut, Bale, Scout!	13



**Extension**

UNIVERSITY OF WISCONSIN-MADISON  
CLARK COUNTY

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## Questions from My Desk

### Is it Time to Retire the Moldboard Plow?

*Richard Halopka, CCA*

*Senior Outreach Specialist*

*UW-Madison Division of Extension Clark County*

July 2022 was an end of an era. John Deere decided to end greater than 150 years of manufacturing moldboard plows. The last one will roll off the line in February of 2023.

With that, I will answer the question I've been asked many times.

Should we still use a moldboard plow in crop production? Today, advancements in tillage implements, plus with changes to crop rotations and as John Deere has decided, is it time to retire the moldboard plow?

There may be a place to use a moldboard plow; however, crop rotations are producing more acres of annual crops, there are water quality concerns, need to improve soil health, and concerns with soil erosion, it may be time to retire the moldboard plow and consider a change in tillage management.

The question comes up mainly when a livestock/dairy farmer has decided to reduce his workload, retire from livestock/dairy farming, and just grow annual crops (corn, soybean, small grain).

As an educator, I need to provide some evidence that we should retire the moldboard plow. To support this observation from my days at Iowa State, I developed a case study to answer this question. A retiring dairy farmer asked if he could use a moldboard plow with a corn/soybean rotation without increasing his soil erosion potential. I developed nine exhibits in this case study. We will base the decision to or not to use a moldboard plow based on P-index. The exhibits are all six-year rotations developed using Snap-plus. A P-index correlates soil loss from RULES II calculations determined by tillage practices and phosphorus levels in the soil. The goal is a P-index below 6.

Originally, this farm family used a rotation of 3 years of hay, 2 years of corn grain or silage, and then reseed into a hay crop using a small grain cover. The allowable soil loss for a Loyal series soil is 4 tons per acre; this rotation resulted in a 1.9-ton soil loss over the rotation of 6 years.

This is exhibit 1 below and it is acceptable. Review the following



This newsletter is mailed to approximately 1,400 farmers and agriculture businesses in Central Wisconsin at a cost of .70 per newsletter. County budgets are tight and each department has been asked to reduce expenses. If you would like to view the Extension Views newsletter online versus receiving a paper copy please contact the UW-Extension Office at 715-743-5121 / mariah.stange@co.clark.wi.us. You can view the newsletter on our webpage at: <https://clark.extension.wisc.edu/extension-views/> Thank you for considering this option!

exhibits. All exhibits are based on a six-year rotation with a corn/soybean rotation. I will comment after to support the case removing the moldboard plow as a tillage practice.

#### Exhibit 1

##### Tolerable soil loss with crop rotation of oats/alfalfa seeding-3 years hay- corn grain-corn silage with fall moldboard plowing

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
1.9 tons/acre	2*

#### Exhibit 2

##### Tolerable soil loss with corn/soybean rotation with fall moldboard plowing

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
6.2 tons/acre	7*

#### Exhibit 3

##### Tolerable soil loss with corn/soybean rotation with spring moldboard plowing

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
5.9 tons/acre	6*

#### Exhibit 4

##### Tolerable soil loss with corn/soybean rotation with fall chisel plow and one spring tillage pass

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
4.1 tons/acre	4*

#### Exhibit 5

##### Tolerable soil loss with corn/soybean rotation with spring chisel plow and one spring tillage

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
3.6 tons/acre	4*

#### Exhibit 6

##### Tolerable soil loss with corn/soybean rotation with spring chisel plow of corn ground and one tillage pass in spring to soybeans and spring vertical tillage only on soybean ground to corn

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
3.5 tons/acre	4*

#### Exhibit 7

##### Tolerable soil loss with corn/soybean rotation with only spring vertical tillage of corn ground to soybean and soybean ground with only spring vertical tillage planted to corn

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
2.8 tons/acre	3*

#### Exhibit 8

##### Tolerable soil loss with corn/soybean rotation with spring chisel plow of corn ground and one spring tillage pass to soybean and spring vertical tillage only on soybean ground planted with a fall cover crop to corn

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
3.1 tons/acre	3*

#### Exhibit 9

##### Tolerable soil loss with corn/soybean rotation after 8 years with no-till for both corn and soybeans

<u>RUSEL II soil loss</u>	<u>Rotation P-Index</u>
0.9 tons/acre	1*

\*All exhibits were developed using Loyal soil series (LoB), P = 22 ppm.



Continued from page 2...

With water quality concerns a high priority in Wisconsin, you can see from Exhibit 2 and 3, moldboard plowing is not the choice if the farmer wishes to be sustainable. With soil losses this large, the loss of soil and nutrients will contribute to surface and possibly groundwater concerns.

As a farm manager, many decisions may be difficult, but with a change in crop rotation to multiple years of annual crops, a moldboard plow may not be necessary in the future. The exception may be in organic production or coming out of a heavy sod.

Farmers should also be aware of public perception. In 2023, many people have no connection to agriculture and this past spring many people may have seen soil loss in ditches from recreational fall tillage. From the exhibits above, by not performing fall tillage, there was a half-ton reduction in soil erosion.



Above: Plow for sale

So, what does a 4 ton per acre soil loss entail? The soil loss depth would be the thickness of a dime across one acre. This spring people observed road ditches filled with sediment along fields with fall tillage. There is a cost to the taxpayer in a township and county to remove this sediment, which in addition to causing harm to water quality will also cost your township tax dollars to remove sediments to prevent damage to roads.

If the goal is to improve water quality, improve soil health, and have a sustainable farm, tillage management changes must be part of the discussion.

Many farmers believe soil loss is a cost of doing business. In the future it may cost the farmer more to remove sediments from roadway ditches beyond cost of purchasing crop nutrients from the soil loss off their fields.

Yes, it is time to retire the moldboard plow just as John Deere has done. It is time to evaluate what you do on your farm and understand the cost of your tillage decisions.

Water in Wisconsin is plentiful, but at some point, the public may require a farmer to pay for their soil erosion and potential harm it may cause to water quality in Wisconsin.

If you have questions about tillage practices, crop rotation, no-till, or other conservation measures to improve water quality contact your county Extension agriculture educator, land conservation office, NRCS office or myself [richard.halopka@wisc.edu](mailto:richard.halopka@wisc.edu).



Two feet of sediment in Road Ditch

How many dollars of lost income from this farming practice?



# AUGUST 9-10 2023

**ManureExpo.com**

IN COOPERATION WITH:



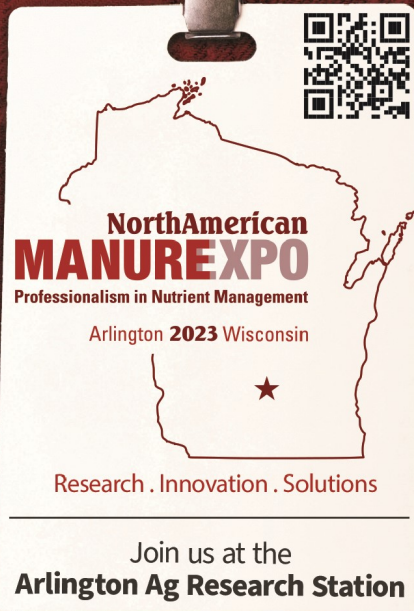
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## Expo Field Location

UW – Arlington Agricultural Research Station  
N 695 Hopkins Rd.,  
Arlington, WI  
53911-9719



- \* Tours
- \* Demos
- \* Vendors/Exhibitors
- \* Speakers
- \* Educational Sessions

## Accommodations

**Holiday Inn Express**  
7184 Morrisonville Rd,  
DeForest, WI 53532

To book a hotel room, please call 1-608-846-8686 and receive a discounted room rate of \$159/night by mentioning the North American Manure Expo. This discounted rate will be available till July 17, 2023 for any days between August 6 to August 11, 2023.

## Other hotels options:

**COMFORT INN & SUITES**  
5025 COUNTY HWY. V  
DEFOREST, WI 53532  
1 608-653-2247

**North American  
MANUREXPO**  
Professionalism in Nutrient Management

**Arlington 2023 Wisconsin  
August 9-10**



## Are You Short of Pasture or Forage?

Richard Halopka, CCA  
Senior Outreach Specialist  
UW-Madison Division of Extension Clark County Crops & Soils

The growing season has many twist and turns. Currently lack of moisture may be causing reduced yields in pastures and concern about needing stored feed to cover forage requirements for your dairy or beef herd. What can I do to bridge this gap or replenish our feed reserves before winter?

Review your current growth patterns in your pastures. Are many of them nonproductive or very low yielding? It may be time to consider reestablishing the pasture. An option would be to plant BMR Sorghum/Sudan early in July or small grains the first week of August. Sorghum/Sudan will provide forage in 45-60 days and likes warm and dry conditions. Late planted oats can provide about 2 ton of dry matter feed. Sorghum/Sudan or small grain may be used for late season grazing or for stored winter feed. A couple of unique features of late planted oats is it will generally not winter kill until about December and it doesn't mature as quickly when compared to spring planted oats, thus providing a good late season alternative for forage.

You could also plant brassicas with oats for pasture to provide a mixture of plant species. This combination could extend pasture into October.

Now to push forage yield of Sorghum/Sudan or oats will require about 50 pounds of diammonia phosphate and 150 pounds of potash per acre. If you are renovating old pasture additional nitrogen may help, but some nitrogen will become available from the previous crop and manure in the pasture. If no nitrogen credit is available 50-60 pounds of nitrogen will increase yields or about 100 pounds of urea per acre.

Then next spring you could plant grass/legume species to re-establish the pasture or use it for hay.

If you have other, questions please call 715-743-5121 or email [richard.halopka@wisc.edu](mailto:richard.halopka@wisc.edu).

## Pressure Canner Testing



Cloverdale Country Store  
N13731 County Road E  
Curtiss, WI 54422

July 10-28

Monday - Friday

8:30 a.m.—5:00 p.m.

## Pressure Canner Testing— Dial Gauges Only

Cloverdale Country Store has partnered with Extension Clark County to offer pressure canner testing July 10—28th.

Extension Clark County will continue to test pressure canner gauges at the Clark County Extension office in Neillsville (517 Court Street, Room 104). We test during office hours Monday - Friday 8:00 am - 4:30 pm .

For testing you only need to bring the lid with dial gauges only. Weighted gauges or “jigglers” cannot be checked. Dial gauges should be check yearly.

For additional information regarding food safety and recommended canning and freezing procedures, please contact the Extension office at 715-743-5121.



## Using lab tests to estimate stability and fermentation adequacy of forages

Matt Lippert, Jackie McCarville, and Lyssa Seefeldt

Laboratory tests provide information on protein, level of fiber, 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 the quality of fermentation of the feed 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).

Fermentation acids produced: lactic, acetic, propionic, and butyric.

Protein fraction converted to ammonia (Ammonia-CP) during fermentation.

Protein fraction subjected to too much heat of fermentation and now bound to the fiber fraction 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 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 more clostridia bacteria, prolonged, excess heat producing, digestible sugar consuming, incomplete fermentation. The sample haylage is wetter than average, but still in the range where good fermentation can be achieved.

**pH:** Is key for evaluating the fermentation process. For the most part, when pH is in 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:

- 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 does, also fermentation (drop in pH occurs more rapidly). Low lactic acid production can result from: restricted fermentation due to high DM content, restricted fermentation due to cold weather, samples taken after considerable aerobic exposure, and silages high in butyric acid.
- Acetic acid provides forage with a vinegar odor and taste but helps with aerobic stability. 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.

### Terminology

*acetic acid = acetate*

*lactic acid = lactate*

*propionic acid = propionate*

*butyric acid = butyrate*

Product: E Hylg		Test Mode: Feed Type: Sub Type:		N9 Haylage - Mixed Mixed	
Moisture	65.49%	Magnesium	%DM	0.25	0.23 - 0.40
Dry Matter	34.51%	Potassium	%DM	3.28	2.05 - 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
		Acetic Acid	%DM	1.32	0.11 - 3.31
		Propionic Acid	%DM	0.33	0.13 - 0.42
		Butyric Acid	%DM	<0.01	0.02 - 0.93
		*Mixed haylage statistics provided for comparison.			

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.



- Butyric acid (butyrate) is often associated with wet forages and increases over time in storage, (continued, lingering fermentation of remaining sugars in the forage and lactic acid and the production of amines and ammonia. 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. Also, the development of butyric acid serves as a marker of undesirable, prolonged fermentation and increased production of amines and ammonia.

Typical concentrations of fermentation end products in legume, grass, & corn silages, and high moisture corn.					
	Legume Silage (30 – 40% DM)	Legume Silage (45 – 55% DM)	Grass Silage (30 – 35% DM)	Corn Silage (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.					

**Near –infrared estimates of Lactic, Acetic, Propionic and Butyric Acid.** 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 is higher in minerals that buffer the pH from acid production.

		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

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

**Ammonia-CP:** A high concentration of ammonia in silages indicates excessive breakdown of protein caused by slow drop of pH or Clostridial fermentation. Depending on the total diet wet haylage may provide too much very rapidly available protein compared to dryer haylage with a more desirable fermentation.

**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. Some differences between corn silage and haylage:

- Corn silage is [direct](#) harvested, often in cooler weather and has less chance for adverse fermentation as compared to a windrow lying in the field.
- 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 for butyric acid producing fermentation.
- Corn silage is lower in minerals and ferments to a lower pH with less buffering.
- 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

- 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.

<b>Moisture: 64.42</b>			
<b>Dry Matter: 35.58 (Feed Avg = 35.63)</b>			
<b>Carbohydrates</b>	<b>%DM</b>	<b>N=3</b>	<b>4 yr</b>
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
<b>Fermentation Products</b>			
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

*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 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.

## References:

- Amaral-Phillips, D. M. Fermentation analysis of silages. Kentucky Cooperative Extension Service, Lexington, KY. Accessed from: [https://afs.ca.uky.edu/files/fermentation\\_analysis\\_of\\_silages.pdf](https://afs.ca.uky.edu/files/fermentation_analysis_of_silages.pdf).
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- Schroeder, J. W. 2004. AS-1254 Silage fermentation and preservation. NDSU Extension Service, Fargo, ND. Accessed from: <https://library.ndsu.edu/ir/handle/10365/5102>.

## Weed of the month: Yellow Nutsedge

Bonus this month, two weeds because of a number of questions I received about nutsedge. With the dry weather, you would think a weed that likes moisture would not be a problem. We did have a wet spring and planting started late, which may have helped the germination of nutsedge. The best method to control nutsedge is with pre-emerge herbicides. There are herbicides with claims to control nutsedge post, but pre-emerge herbicides provide the best control. Roundup will not control nutsedge, but may limit the growth of nutsedge.

If dry weather continues provide fertility required by the crop, provide good weed control so the limited moisture is available to the crop. Below is information on nutsedge.

Yellow nutsedge is neither a grass nor a broadleaf weed; it is sedge. Remember sedges have edges; this will help identifying this grass-like perennial in the field. Nutsedge originated in Eurasia and it is not known how it arrived in the US.

Nutsedge has a triangle shaped pale green leaf blade, a compound umbel, and numerous spiklets within the flower. Nutsedge will reproduce from seed, scaly rhizomes, and a nutlet that develops on the end of a rhizome. Nutsedge establishes in lower areas of a field and tillage will help move the rhizomes and nutlets to other areas of the field.

Nutsedge has little value as livestock feed, but the leaf, rhizome, and nutlet are an important food of waterfowl, muskrats, rodents, and other wildlife.

Nutsedge is very difficult to control because when pulling the weed generally the nutlet or rhizome will remain in the ground. Tillage will disrupt the plant, but may move rhizomes or nutlets to other areas of the field. Herbicides are limited because nutsedge is neither a grass or broadleaf. Read the herbicide label to determine if it will control nutsedge. Wet conditions help nutsedge thrive in crop fields.

## Reference:

Stubbendieck J., Friisoe G. Y., Bolick M. R., Weeds of Nebraska and the Great Plains, Nebraska Department of Agriculture, 1994

[www.extension.umn.edu](http://www.extension.umn.edu)







## Save the Date for the Clark County Fair

### Featuring:

- ◆ Saturday Night Grand Stand Concert: Nathan Hansen opening for Chris Kroeze
- ◆ Junior Fair project exhibits: Arts, crafts, photography and much more
- ◆ Various Junior and Open Class shows: swine, beef, sheep, goats, dairy cattle, riding horses, draft horse hitching, rabbits, cats, dogs
- ◆ Open Class exhibits
- ◆ Saw Cow contest, Green Thumb Challenge, carnival rides, plus various vendors and entertainment!
- ◆ More to Come...

It takes many volunteers to make this event great. Consider volunteering to help the Fair Board make our "Kick-off to the Next 150 Years" a huge success! Contact Christine Garbisch, Clark County Fair Board Secretary to volunteer your services at: [clarkcountyfairwisconsin@gmail.com](mailto:clarkcountyfairwisconsin@gmail.com) or call the Extension Office at 715-743-52122, and we will get your name on a contact list.

2023 Wisconsin

Farm Technology Days

Baraboo, Wisconsin

July 18-20 / 9AM - 4PM

\$10 Per Person CASH / \$12 Per Person CREDIT (12 and under are free)

FREE PARKING

[S3347 Sand Rd, Baraboo, WI 53913](https://www.wisconsin.gov/agriculture/farm-technology-days)



The 2023 Wisconsin Farm Technology Days show will be held at the Badger Steam & Gas Engine Club's grounds conveniently located South of Interstate 90/94 Exit 92 near Wisconsin Dells and West of Highway 12 at Highway 33 at Baraboo. There's plenty to see and do at the show, then plan a stop at Baraboo/Dells or stay and play at the

# Should I Top-dress My Alfalfa?

Richard Halopka, CCA

Clark County UW-Extension Crops & Soils Agent

With current milk prices, many dairy farmers are asking the question is it necessary to top-dress potassium (K) on alfalfa/forage fields. To answer this question we first need some information about the fields in question.

⇒ Is there a current soil test to evaluate the potassium level in the field?

⇒ What are the past fertilizer applications of either manure or fertilizer?

If a current soil test is available for your hay fields review the chart at the bottom of the test. This chart will give a snapshot of your current potassium (K) level in your field. Now also review the K ppm in the chart on the test report, if potassium is below 70 ppm this level is considered very low, 71-90 ppm is low, 91-120 ppm is considered an optimum level, 121-150 ppm high, 151-220 is very high and above 220 ppm is excessively high. The fertility removed by a 3.5-4.5 ton of dry matter yield of alfalfa or a mixed forage for the season will be about 240 pounds of K<sub>2</sub>O. Next, if you look at your report there is a recommendation for established alfalfa. When K levels are low, the recommendation will be 280 pounds of K<sub>2</sub>O per acre or 465 pounds of potash fertilizer. An optimum level recommendation will require 240 pounds of K<sub>2</sub>O per acre or 400 pounds of potash. A high-level recommendation will require 120 pounds of K<sub>2</sub>O or 200 pounds of potash. A very high level will require 60 pounds of K<sub>2</sub>O or 100 pounds of potash per acre and excessively high level will not have a recommendation for K<sub>2</sub>O. The fertilizer recommendation would be for the entire growing season and it would be best to split the applications during the growing season. When a soil test is current, we can determine the amount of fertilizer required to prevent a drop in soil fertility with forage crop removal.

What would happen if I decide not to purchase fertilizer because of tight margins? If your soil is high or excessive on the soil test you will essentially drawn down the nutrition level that is available in the field. At the optimum or lower level of fertility, it could reduce yields of alfalfa, provide more stress on the alfalfa crop and ultimately reduce the stand life.

Therefore, as a dairy farmer what can I do if some funds are available for topdressing hay fields. If the soil test is current and manure or fertilizer was applied in the past we need to credit those nutrients. Example, the soil was sampled and then corn was planted the previous two years and dairy manure was applied at 10,000 gallons per acre. The corn crop didn't use all of the potassium that was applied and some will be available for future years of hay.

The next option would be to apply potash at the rate of crop removal at the minimum if the field had a low or optimum level for potassium. Crop removal at 4 tons of dry matter (DM) will equal 240 pounds of K<sub>2</sub>O or 400 pounds of potash fertilizer for the season. It may be best to split apply the potash in two applications. If your field is high or very high in potassium, you can reduce the amount of potash you apply to 150 - 200 lbs. for the season and if an excessive level of K, no additional fertilizer may be required. If it is an older alfalfa/forage stand and manure is available, application dairy manure at 5,000 gallons per acre will supply 85 lbs. K<sub>2</sub>O per acre using book values of K/1,000 gallon application rate.

So the question is should we top-dress potassium on our alfalfa fields in periods of tight margins? To maintain a stand for a number of years will require potassium fertilizer to maintain yield and the persistency of the stand. Farmer's must pay attention to soil test levels and apply fertilizer at rates that are economical. Fields with high and excessive levels of K you may reduce K applications below crop removal. Fields with lower K levels applications should be at the minimum of crop removal and will provide a return on investment in yield and persistence of the alfalfa stand. Remember, seeding cost for alfalfa or any forage must be recovered over multiple productive years.

Bottom line, if funds are available top-dressing alfalfa will return higher yields per year and an alfalfa stand with many more productive years for a return on your seeding investment.

If funds allow apply sulfur (S) and boron (B) as many areas of the state are low on these nutrients, which alfalfa requires. Use a sulfate source rather than dispersible sulfur as plants take in sulfur in the sulfate form.

If you have additional questions related to alfalfa, crops in general or requirements for topdressing hay fields please call 715-743-5121 or email [richard.halopka@wisc.edu](mailto:richard.halopka@wisc.edu) .

Reference:

C.A. Laboski, J.B. Peters, L.G. Bundy, "Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin" Page 10



# Growing and Caring for Plants in Wisconsin: FOUNDATIONS IN GARDENING

An online, complete-at-your-own-pace introductory course where you learn key concepts for selecting, growing, and maintaining plants – from trees to houseplants to vegetables (and everything in between!)

Early bird registration for Fall 2023 runs July 17-August 14

**Course dates:** September 10-December 9, 2023. Course is self-study and highly flexible. Course material accessible through August 2024.

## Course fee:

- **Early Bird:** \$299, includes electronic version of manual (PDF). *Need-based scholarships available during Early Bird registration only.*
- **Regular:** \$325, includes electronic version of manual (PDF).
- **Green Industry commercial professionals:** Want to send a group through the course? Ask us about our group deals! Email [gardening.course@extension.wisc.edu](mailto:gardening.course@extension.wisc.edu) to set up a time to meet to see if this course is right for your team and to learn about group discounts.

## Additional optional add-ons:

- **Manual Hard Copy (recommended):** \$33
  - Register during Early Bird registration and receive your manual prior to the course start date!
- **Online Labs:** \$40

[https://hort.extension.wisc.edu/foundations-in-gardening/?utm\\_source=website&utm\\_medium=calendar&utm\\_campaign=2023+Foundations](https://hort.extension.wisc.edu/foundations-in-gardening/?utm_source=website&utm_medium=calendar&utm_campaign=2023+Foundations)

## Weed of the month: Horseweed (Marestail)

Richard Halopka, Crops & Soils Agent

This annual forb, which is in the sunflower family, has the distinction of exhibiting tolerance and resistance to glyphosate herbicide. Horseweed generally is a problem in a no-till system, but is growing on most farms and wild areas. Horseweed is a native weed that has now been found in Europe. Native Americans used horseweed as an astringent and settlers used it for treatment of dysentery.

Horseweed is an annual, but may exhibit winter annual growth patterns. Horseweed will produce a rosette in the fall, but unlike most winter annuals will flower and develop seed later in the season, like a spring annual.

Horseweed has a taproot and will grow to 1 ½ to 3 feet tall. Horseweed grows on an erect stem that will have alternate, simple leaves that are gathered closely on the stem. The flower is a white ray developing a small seed.



Horseweed is not poisonous, but the volatile oil, tannic, and gallic acid present in the plant can cause skin and mucus irritations in livestock (especially horses) and humans.

Tillage is an effective control of horseweed, but in a no-till system a combination of herbicides may be required. As mentioned earlier horseweed is tolerant or resistant to glyphosate and ALS herbicides, which means a good management practice is to use two herbicides in combination with different modes of action for horseweed control.

If you have weed questions please call the Clark County UW-Extension office at 715-743-5121 or email [richard.halopka@wisc.edu](mailto:richard.halopka@wisc.edu).

# CONSERVATION CORNER



Jim Arch, CCA  
Clark County Land Conservationist

Hello from the Clark County Land Conservation Department. I hope you have been getting enough rain where you are located to keep your crops growing. You can see a number of soybean fields with fair emergence, and it's not just conventional tilled fields as some no-till fields also have problems, but not as bad as the tilled fields. Planting a little deeper this year will pay dividends.

**New Cover Crop Demo Plot Project:** Our cooperating farmer for the project, Clark Turner no-tilled corn on the plots on May 30<sup>th</sup> and the stand looks great. As of writing this article, the plan is to do an inter-seeding in two of the four plots using the County no-till drill by doing some minor modifications to the drill. I have never tried inter-seeding using a drill we have always broadcasted the seed on the surface so it should be interesting. I am looking at having a fall field day at the plots. Stay tuned for more information as we get closer to fall for date and time.

**Modifications to existing manure storages:** This spring I have noticed several manure storages where a push-off ramp from a free stall barn was added some years after the manure storage was constructed. I need to remind farmers that in most cases this is considered a modification of an existing manure storage and requires an engineered design and a permit from the department. You may ask WHY? In one case I noticed that over the years the concrete that was poured was being undercut and will at some point in the future require major repairs. If this ramp would have been engineered correctly, perhaps the undercutting wouldn't have happened. You might be wondering, what is covered under the current County Manure Storage Management Ordinance (MSMO): the manure storage and transfer system (pipes, channels and manure pump hopper). The manure pump is not covered under the MSMO nor are gutters if they are less than 24" deep and less than 24" wide. If you are unsure and are considering doing something the best thing to do is to call your County Land Conservation Department. In Clark County that number is 715-743-5102.

Stay safe and cool!

Clark County Agricultural Society

FAIR BOARD



Extension

UNIVERSITY OF WISCONSIN-MADISON  
CLARK COUNTY

## CHOCOLATE DESSERT CONTEST

Saturday, August 12  
Clark County Fairgrounds, Dining  
Hall/Fine Arts Building  
Registration: 9:00 a.m.  
Judging Begins: :30 a.m.

*Clark County Dairy Promotion has partnered with Clark County Fair Board and Clark County Extension to offer a Chocolate Dessert Contest open to all Clark County residents.*

*There is no entry fee and there are two divisions:*

*Youth—ages 8 through 18*

*Adult—19 years and older*

*Pre-registration is required.* Limited to first 20 entries in each division.  
Call the Clark County Extension Office at 715-743-5121 to pre-register.  
Deadline to register is August 8th.

Dairy Producers  
of Clark County



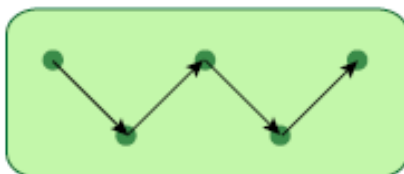


# Cut, Bale, SCOUT!

## Scouting for Leafhoppers

Weekly Scouting – 20 sweeps at 5 locations in each alfalfa field. Because leafhopper population densities vary from year to year and from field to field, the only way to accurately determine damage potential is by monitoring fields on a weekly schedule.

- Start scouting 5-7 days after first cut.
- Use a standard 15-inch diameter insect sweep net.
- Walk a W-shaped pattern in the field and take twenty consecutive sweeps in each of five randomly selected areas.
- Keep a running total of the number of leafhoppers caught. Count adults and nymphs.
- Divide the field total by 100.
- Compare the field counts with the threshold based on crop height.
- If over the threshold, decide on spraying or cutting.
- Continue to the next field.
- After cutting a field over threshold, scout the regrowth. Start scouting sooner if nymphs were present.



## Leafhopper ID

© Penn State College of Agricultural Sciences



### Damage to Alfalfa:

Damage symptoms appear as stunting as well as yellowing of the leaves in a v-shaped pattern starting at the tip of a leaf. As a result of hopper burn, there may be yield loss, quality loss and potentially a reduction in plant vigor and stand. New alfalfa seedlings are particularly susceptible to potato leafhopper damage.

## Leafhopper Thresholds



3 inch	6 inch	8-11 inch	12+ inch
0.2/sweep	0.5/sweep	1.0/sweep	2.0/sweep

## Sample of scouting record

Potato leafhoppers: Use 20 net sweeps per set.

Set 1	Set 2	Set 3	Set 4	Set 5	Total/100	Av./Sweep
10	12	8	15	11	56	0.56

Alfalfa Height 6 inch

The average is above the threshold of 0.5 for this field

Nutrient and Pest Management Program (NPM)  
Integrated Pest Management Program  
University of Wisconsin-Extension, UW-Madison  
<http://ipcm.wisc.edu>



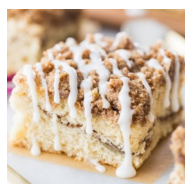
# Upcoming Meetings/Events

***Make sure to listen to WCCN and WAXX for any cancellations***

DATE	EVENT	LOCATION	TIME
July 18 - 20	<b>Wisconsin Farm Technology Days Baraboo 2023 Full Steam Ahead</b>	S3347 Sand Rd Baraboo, WI 53913	9:00 am - 4:00 pm daily
July 25	<b><i>Hancock Highlights: Nitrate Sensing</i></b>	Hancock Agricultural Research Station N3909 County Rd V, Hancock, WI 54943	1:00—3:00 pm
August 9-13	<b>Clark County Fair</b>	Fairgrounds Neillsville	8:00 am—11:00 pm daily
Aug 9-10	<b>North American Manure Expo</b>	UW-Arlington Agricultural Research Station N 695 Hopkins d. Arlington , WI 53911	8:00 am—8:00 pm 8:00 am—5:00 pm

If you would like a copy of the June Dairy Month or Chocolate Dessert Recipe Contest winners, via email or mail, please contact the Extension Office at 715-743-5122 or email Val at: [valerie.wood@co.clark.wi.us](mailto:valerie.wood@co.clark.wi.us)

All contestants will receive a booklet of recipes entered if they leave email or mailing information at the contest.



Did your address change? No longer wish to receive your copy of Extension Views? Want to view the newsletter online instead or have it sent to your email?

Please contact the Extension office at 715-743-5122 or email [valerie.wood@co.clark.wi.us](mailto:valerie.wood@co.clark.wi.us) to update your preference.

Thank you!



**Extension**  
UNIVERSITY OF WISCONSIN-MADISON

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