

Courthouse
1926 Hall Avenue
Marinette, WI 54143
Phone: 715-732-7510

If you will need any type of accommodation or assistance as you attend any UW-Extension sponsored event, please contact the host county or Scott at the Marinette County office at least two days prior to the event. All requests will be confidential.

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Corn Silage 2017 Newsletter

Corn silage harvest season is going to be a longer, more drawn out affair than we want, due to significant timing variability of corn maturity on most farms. Make sure you collect moisture data to guide your harvesting, whether through the UWEX sampling dates below and on page 2, or through other sources, or your own equipment.

There are some different options for corn silage sampling collection this year, plus the 'traditional' route which I have been utilizing many of the last years. Please take advantage of these free opportunities to help you harvest at the optimum time.

Florence County and Northern Marinette County farms - please note the Monday afternoon portions of the corn silage sample collections.

Congratulations to all our county's youth for their efforts at the fairs in the last few weeks. NOTE: The Dairy MPP signup period has some extra options this year - watch for a full article on this topic in the October newsletter.

Scott Reuss

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Calendar of Events (contact us if you want info on an event)

Sept./ Oct.	Corn silage sampling (pg. 2/3)
Thurs., Sept. 14	5:30 p.m. Harmony Winter Squash & Pumpkin Fest
Sat., Sept. 16	1 pm Gillett Beef Cow/Calf Workshop (pg. 8)
Sept. 17-23	National Farm Safety & Health Week
Sept. 27, 28, 29	Milwaukee Dairyland Initiative Workshops
	- Youngstock Facility Design
	- Positive Pressure Tube Ventilation Design for Calf Barns
	- Ventilating Adult Cow Facilities
Fri., Sept. 29	day Kimberly Farm Mgmt. Update for Ag. Prof. (p. 4)
Thurs., Oct. 10	Appleton WI Farm Succession Professionals
	Network Meeting
Sat., Oct. 14	2-5 pm Harmony Fall Family Fun Fest - great family fun for all!!
Thurs., Nov. 30	Seymour Farming Forward: Planning Your Farm's Future

If you are interested in a program title that is not otherwise found in this edition, contact us for more information.

Corn Silage Sampling - 2017

Free to producers within Marinette, Oconto, and Florence Counties. Sponsored by the UW-Extension offices. Other samples accepted for a \$10 per sample fee.

Tuesdays, September 12th, 19th, and 26th

8:30 a.m. to 9:15 a.m.

Middle Inlet Town Hall - intersection of Marinette Cty. Hwy. X & Hwy 141.

9:45 a.m. to 10:30 a.m.

Fendryk Farms, Cty Hwy. P and 25th Road, 2 miles west of Hwy. 141. Use the 25th Road entrance to the farm (just south of Cty. P) for easiest access.

11: a.m. to 12:15 p.m.

Kuchta Farms' grain bin site on Marinette County Hwy M, 2.5 miles west of County W.

12:45 p.m. to 1:45 p.m.

Peterson Farms, 6336 Goatsville, 1.5 miles west of Hwy 141 (2 miles north of Lena).

2:15 p.m. to 3 p.m.

Curt Kohls' farm, just northwest of Gillett on Klaus Lake Road, just south of Town Hall Road, which is the first road off Hwy. 32 north of Gillett.

Thursday, September 14th

10 a.m. to 1 p.m.

Crivitz Feed Mill

Saturday, September 16th

12:30 p.m. to 4 p.m.

11413 North Flat Rock Lane; Gillett, WI (in conjunction with beef meeting - flyer on page 8)

Mondays, September 18th, 25th, and Thursday, October 5th

3:30 p.m. to 5 p.m.

Aurora Feed Mill (Stephenson Mktg.), on west edge of Aurora.

Friday, October 6th

9 a.m. to 10 a.m.

WOCO Radio Station parking lot: 3829 Hwy. 22

10:30 a.m. to 11:30 a.m.

Fendryk Farms, Cty Hwy. P and 25th Road, 2 miles west of Hwy. 141. Use the 25th Road entrance.

12:30 to 1:30 p.m..

Curt Kohls' farm, just northwest of Gillett on Klaus Lake Road, just south of Town Hall Road, which is the first road off Hwy. 32 north of Gillett.

These gals got sick of waiting, when will you start harvesting your corn silage? Be sure to have it at the correct moisture for your storage.



Collecting a Good Sample

Sample collection is very important to getting good test results. The first step to collecting a good sample is to think about all the different fields and/or varieties that you want tested. Each variety will mature and dry-down differently, and there are always differences from field to field, so plan on sampling most of the fields that you are thinking about ensiling this year.

When collecting the actual sample plants, collect your sample according to the variability in the field. If the field is pretty consistent, collect at least five plants in a W-shaped pattern from the area being sampled. If the field is variable, collect more plants and collect at least one or two from each size of plants found in the field. Wrap the plant stems in wet paper and bring all your separate samples to the collection site nearest you. If in doubt, collect a few more plants for each given sample, or collect more than one sample according to field variability, whether it be soil type, variety, or whatever else.

Lastly, collect them as soon as possible before you leave for the collection site. Call Scott's cell phone at 715-923-0807 if you are running behind so that he can either wait for you or arrange a meeting point.

Storage considerations for corn silage

High-quality corn silage can be produced in many different types of storage structures. However, each structure type - bunker silo, silage bag, upright silo, or silage pile - needs to have the corn silage at a certain range of whole-plant moisture to achieve the best possible results. The recommendation is to hit the following ranges:

Silo Type	Recommended Moisture %
Upright	60-65
Upright, oxygen-limiting	50-60
Horizontal silos	65-70
Silage bags and piles	60-70

Packing Capacity – When packing silage into a bunker silo, you must have enough packing weight to adequately handle the forage coming into the bunker. If you do not pack adequately, you will lose dry matter and forage quality. A quick rule-of-thumb is that you need about 800 lbs of weight per delivered wet ton per hour. For example, 80 tons delivered per hour requires 64,000 lbs of packing capacity. Stated Simply: Pack or Lose! If you do not take the time to pack correctly, you will have lost 2 to 5 times as much silage to spoilage as you should. So do your best by:

1. Use the heaviest tractors you can. Total weight has shown to be more important than per tire weight.
2. Unload the silage in thinner layers. This will allow each layer to be more properly packed.
3. If feasible, slow down your delivery rates. The single most important variable to final silage density in a significant study a couple years ago was delivery rate. If the rate was less than 60 ton/hour, the final density was sufficient, if more than that, the density decreased.
4. Harvest at the right moisture for your system. See above.

Assistance with buying/selling corn silage / snaplage / HMC

This is certainly going to be a year where corn producers may be looking to sell certain acres to livestock producers, rather than taking the risk of frost, low test weight and high moisture content, or other issues. Also, there are dairy farms that are going to need extra acres of corn silage due to late or insufficient planting of their own acres. Make sure you work together to come up with a 'good for both of you' contract that spells all appropriate features out clearly. I am willing to assist in yield estimations, valuation, contract wording, or however else you need assistance. Also, see the next two pages for a few pointers on the different methods of setting/measuring corn grain equivalency.

Contact me and let me know what you need and we will set times to get it done.



Farm Management Update for Ag Professionals

Friday, September 29, 2017

Liberty Hall, Kimberly

- 9:15 am **Registration, milk, coffee, juice, and rolls**
- 9:45 am **“Milk Marketing / Dairy Policy Outlook and Update”**
- Mark Stephenson, *Extension Dairy Market Specialist, Center for Dairy Profitability UW-Madison*
- 10:30 am **“Understanding and Negotiating Milk Marketing Contracts”**
- Troy Schneider, *Agricultural Attorney, Twohig, Rietbrock, Schneider and Halbach, S.C.*
- 11:15 am **“UW-Extension Update”**
- *Local Extension Educators*
- 11:45 am **Lunch**
- 12:45 pm **“HR Best Practices”**
- Simon Jette-Nantel, *Extension Farm Business Management Specialist, UW-River Falls,*
Stephanie Plaster, *Ozaukee & Washington County Extension Agriculture Educator,*
& Jennifer Blazek, *Dane County Extension Dairy and Livestock Educator*
- 1:30 pm **“Recruiting, Hiring & Managing Dairy Farm Employees”**
- Frankie Rodriguez, *Co-Founder and Placement Specialist, AgriStaff USA, Kiel, WI*
- 2:10 pm **“AgFA Financial Dairy Analysis: Past, Present, Future”**
- Jenny Vanderlin, *Extension Farm Business Management Specialist, Center for Dairy Profitability, UW-Madison*
- 2:30 pm **“Speaker Q & A / Open Forum”**
- *Moderated by Scott Gunderson, Manitowoc County Extension Dairy and Livestock Educator*



Farm Management Update for Ag Professionals Registration Form

Name(s): _____

E-Mail(s): _____

Business: _____

Address: _____

City: _____

Zip: _____

Phone: _____

Registration Fee: \$40 per person

Make check payable to: **Waupaca County**

Mail this registration form and check to:
Waupaca County UW-Extension
811 Harding Street
Waupaca, WI 54981

715-258-6231

Registration Deadline: September 22, 2017

Agronomy Advice

<http://agronomy.wisc.edu>

August 2017

Field Crops 28.5 - 129

Finding Value in Producer-Dairyman Corn Silage Contracts

Joe Lauer, *Corn Agronomist*

Grain producers and dairyman annually debate the question, "What is corn silage worth this year?" Most grower-dairyman silage contracts are based upon prices determined at some point during the growing season using CBOT and CME grain markets. A fair price must be negotiated from the seller's (minimum to accept) and buyer's (maximum to pay) perspectives. Buyers and sellers need to consider local market conditions that will influence the final negotiated price. If the seller minimum is greater than the buyer maximum, then it would be more economical to harvest the crop as grain.

The seller (grain producer) has opportunities with marketing grain and opportunities with marketing stover (i.e. bedding, fertilizer value, decreasing soil erosion, etc.). The seller starts with the value of the standing corn minus grain harvest costs. The price is adjusted for the value of phosphorous and potassium harvested in the stover.

The buyer (dairyman) starts with the price of standing corn in terms of quality and harvesting costs. The buyer usually assumes harvesting costs when corn is standing, and adjusts the value of corn silage based on what it would cost to purchase corn and straw to replace nutritional value of corn silage. Forage quality adjustments can be derived through opportunities with marketing milk. Some corn, like brown midrib hybrids (bmr), have more stover value than non-bmr hybrids.

Corn silage is often harvested after kernels are fully dented, with most acres harvested at about 50% kernel milk before grain is physiologically mature (black layer). Corn grain yield increases 0 to 43% between full dent and black layer, with about 9 to 13% of the final grain yield determined after 50% kernel milk (Afuakwa and Crookston, 1984). A major factor in negotiating a silage price is predicting what the final grain yield would be in any given cornfield.

Since the 1990s, an objective the University of Wisconsin Corn Agronomy program has been to determine the relationship between silage starch content and final grain yield. Silage starch content is a common silage quality measurement routinely evaluated by forage testing laboratories. Our approach uses paired plots for collecting data to predict final grain yield using silage yield and quality measures. Half of the plot is harvested for silage yield and quality, while the other half is left standing for subsequent grain harvest using a combine.

Experiments have been conducted at numerous locations over many years and experimental factors including hybrid, plant density, date of planting and row spacing along with interactions.

Grain equivalents (grain yield at 15.5 % moisture / forage yield at 65% moisture) are often used in corn silage contracting. However, grain equivalents can be quite variable and likely changing over time and environment/management thereby not reflecting the true value of a cornfield. In 1972, grain equivalents were estimated to be 5.0 to 7.0 grain bushels per silage ton for typical grain yield levels at the time (Jorgensen and Crowley, 1972). In modern hybrids used in this study, average grain equivalents were 5.1 to 8.6 bu/T depending upon grain yield (Table 1). However, depending upon hybrid and environment, grain equivalents could be as low as 3.8 bu/T and as high as 10.5 bu/T.

In order to accurately use grain equivalents in contract negotiations measurements need to be taken "after the fact" (after silage harvest). Few growers are willing to leave "check strips" in the field. Weather, wildlife and hybrid standability and ear droppage can influence post-silage harvest grain yield measurements. A better approach might be to use a silage yield or quality estimate to predict final grain harvest.

Forage yield was a good predictor of final grain yield ($R^2 = 0.70$). The forage quality parameters NDF and NDFD were not good predictors of grain yield ($R^2 = 0.04$ to 0.10 , respectively). Starch content improved the prediction ($R^2 = 0.29$). Assuming that starch was 70% of the grain, we used starch content and forage yield to back calculate grain equivalents (Starch method in Table 1). This method consistently underestimated true grain yield equivalents. The difference (or bias) between these two methods was affected by the grain yield level. However, by using a forage yield measurement, a more accurate contract could be arrived at between grain producers and dairymen.

In conclusion, corn silage buyer and seller perspectives are different with each needing to develop a price from the seller's (minimum to accept) and buyer's (maximum to pay) perspectives. Cost of corn silage production has increased over time, so it is imperative to get a handle on these costs. Grain equivalents in modern hybrids are greater than older hybrids. The relationship between forage and grain yield is quite variable. Starch content of corn forage can be used to predict grain yield, however, grain equivalents using starch content underestimate final grain yield and must be adjusted using a bias.

Table 1. Corn grain equivalents (at 15.5% moisture) per Ton of Silage (at 65% moisture).

Grain Yield	Forage Yield	Starch content	Bushels of Grain / Bushels of Grain / Bushels of Grain /			Difference (bias)
			Ton Silage (1972)	Ton Silage (Revised 2016)	Ton Silage (Starch method)	
Bu/A	T/A	%	Bu/T	Bu/T	Bu/T	Bu/T
Less than 90	3.8	20.9	5.0	5.1	4.4	0.7
90-110	5.4	27.3	5.5	6.6	5.8	0.8
110-130	6.0	29.0	6.0	7.1	6.1	1.0
130-150	6.7	30.4	6.5	7.5	6.4	1.1
150-170	7.3	31.4	7.0	7.8	6.6	1.2
170-190	7.9	32.2	7.0	8.1	6.8	1.3
190-210	8.6	32.6	7.0	8.3	6.9	1.4
210-230	9.3	32.6	7.0	8.5	6.9	1.6
230-250	9.9	32.4	7.0	8.6	6.8	1.8

An android app for phones is called "Corn Silage Pricing" available at the Google Play Store. Silage price calculators can be found on-line at:

<http://corn.agronomy.wisc.edu/Season/DSS/UWEXCornSilagePricingDecisionAid.xls> and <http://corn.agronomy.wisc.edu/Season/DSS.aspx>.

Literature Cited

- Afuakwa, J.J., and R.K. Crookston. 1984. Using the kernel milk line to visually monitor grain maturity in maize. *Crop Science* 24:687-691.
- Jorgensen, N.A., and J.W. Crowley. 1972. Corn silage for Wisconsin cattle: Production, harvesting, storage, use in dairy rations. UWEX Bulletin A1178, University of Wisconsin, Madison.

This article is adapted from a publication written by the author for Hay and Forage, 2017.

Hydrogen Sulfide (H₂S) Health Hazards

Hydrogen sulfide is a colorless, flammable, extremely hazardous gas with a “rotten egg” smell. It is produced by the breakdown of animal wastes or manure. It is heavier than air and can collect in low-lying and enclosed, poorly ventilated areas such as reception pits, ditches, or manholes.

Concentration (ppm)	Short Term Symptoms/Effects
0.00011-0.00033	Typical background concentrations
0.01-1.5	Odor threshold (when rotten egg smell is first noticeable to some). Odor becomes more offensive at 3-5 ppm. Above 30 ppm, odor described as sweet or sickeningly sweet.
2-5	Prolonged exposure may cause nausea, tearing of the eyes, headaches or loss of sleep. Airway problems (bronchial constriction) in some asthma patients.
20	Possible fatigue, loss of appetite, headache, irritability, poor memory, dizziness.
50-100	Slight conjunctivitis (eye irritation and redness). Respiratory tract irritation after 1 hour. May cause digestive upset and loss of appetite.
100	IDLH – Immediately Dangerous to Life and Health Leave area and get to your safety zone Coughing, eye irritation, loss of sense of smell Altered breathing, drowsiness after 15-30 minutes Throat irritation after 1 hour Gradual increase in severity of symptoms over several hours. Death may occur after 48 hours.
200-300	Marked conjunctivitis and respiratory tract irritation after 1 hour. Pulmonary edema (fluids in lungs) may occur from prolonged exposure.
500-700	Staggering, collapse in 5 minutes. Serious damage to the eyes in 30 minutes. Death after 30-60 minutes.
700-1000	Rapid unconsciousness, "knockdown" or immediate collapse within 1 to 2 breaths, breathing stops. Death within minutes.
1000-2000	Nearly instant death

What about longer term health effects? Some people who breathed in levels of hydrogen sulfide high enough to become unconscious continue to have headaches and poor attention span, memory, and motor function after waking up. Problems with the cardiovascular system have also been reported at exposures above permissible exposure limits. People who have asthma may be more sensitive to hydrogen sulfide exposure. That is, they may have difficulty breathing at levels lower than people without asthma.

Source: <https://www.osha.gov/SLTC/hydrogensulfide/hazards.html> Accessed. November 2, 2016.



For further information on Manure Gas Safety, visit <http://fyi.uwex.edu/agsafety>.

Information provided by **UW- Madison/Extension Center for Agricultural Safety and Health**,
460 Henry Mall, Madison WI 53706.



**Biological Systems
Engineering**
UNIVERSITY OF WISCONSIN-MADISON



FALL BEEF MEETING

Saturday, September 16, 2017

1 PM until 4 PM

Cedar Barn Cattle Company

Terry & Julie Yonker and Family

11413 North Flat Rock Lane, Gillett, WI 54124

12:30 PM Registration

Farm Tour & Pasture Walk

Presentations:

Feeding Beef Cows and Finishing Feeder Cattle

Daniel Schafer, Professor, UW-Madison, Department of Animal Science

Finding your Foothold on Digital Dermatitis

Sarah Mills-Lloyd, DVM, Agriculture Agent, UW-Extension Oconto County

\$5 Registration Fee for printed materials

RSVP REQUESTED BY SEPTEMBER 8, 2017 BY CALLING
THE OCONTO COUNTY UW-EXTENSION OFFICE (920) 834-6845

A SEMINAR SERIES FOR:

- ◆ Registered stocker producers ◆ Commercial cow/calf producers
- ◆ Small hobby farm beef producers ◆ Agriculture professionals
- ◆ Educators ◆ Youth livestock project participants

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