NEWS & VIEWS
By Frank Wardynski, MSU Extension Educator

Jim Isleib coordinated producer input sessions this fall to determine educational needs across the U.P. We’re still not done but Jim has included a summary of what we’ve heard so far. As you might expect the input has been a little bit different at each location. It’s interesting how diverse our agriculture is across the U.P. Most of the differences seem to be climate and soil related. It will be interesting as we formulate plans to address forage production programming because everyone’s situation and issues are so different.

We conducted one of the meetings in Daggett where we were hosted by Tracy and Terry DeBacker of DeBacker Family Dairy at their on farm store. They served us delicious meatballs with candied carrots and an amazing cheesy potato dish. It was fabulous. I so recommend anyone to stop in for lunch, or an ice cream cone, or any of the many products they raise and produce right there on the farm.

I think they started bottling and selling their own creamline milk in glass bottles back in 2011 and then followed with cheese curds. They now have homemade ice cream and homogenized milk now in plastic jugs. Creamline milk is pasteurized but not homogenized. You know, that’s not a product easy to find everywhere. It has the benefits of cream that separates just like milk straight from the bulk tank yet it’s pasteurized removing microbial contamination health risks. And the chocolate milk is incredible.

In addition to the on farm store, they now have stores in Escanaba and Menominee. They are selling milk through about two dozen grocery stores across the U.P. as far north as Houghton and down to Menominee, with plans of moving into Wisconsin. In their own stores they sell milk, ice cream and cheese curds from their own dairy cows. They also sell their own beef. They sell their neighbor’s meats, candles and various other products. You can see their products at http://www.debackerfamilydairy.com/ or on Facebook at https://www.facebook.com/pages/DEBACKER-FAMILY-DAIRY-LLC/133264430019573?sk=info&tab=page_info. I highly recommend everyone go put together a gift basket as Christmas presents.

I speak so highly of their operation because it’s so impressive. In my opinion, this is how “local foods” works. They sell enough product to generate real income, real jobs. Many people think I’m anti-local foods. That’s not true; I’m trying to do it myself. I’m just not very good at it. I think it’s really hard because you have to be so good at so many things. You have to be an expert at producing your given product. And if you have a diverse operation, you need to be an expert at growing several products. You need to be really good at marketing. Not just knowing when to and where to sell but to be a salesman. Figuring out how to be productive and efficient in areas like product distribution, processing, quality control and food safety. I’m always impressed with people that can pull it all off while selling enough product to generate enough income to make it worthwhile.

I think that another factor that makes it so tough is that a local foods producer is competing against an agriculture infrastructure that is the envy of the rest of the world. Here in the United States, we produce, process, transport, and distribute food better and more economically than any other country. And we do it almost as safely as any other country. Again, I think it’s so impressive to put that system together on a local basis.

~Frank

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WANTED & FOR SALE LISTINGS

Personal ads will be removed monthly. We reserve the right to edit your ad. Free ads must be no more than 110 spaces. Please respect the space requirements. You can always purchase an ad if more space is required. Please call or email your ad no later than the 15th of each month. Call the Ontonagon County MSU Extension office at 906-884-4386 or email msue66@msu.edu.

Hay for Sale—4X4 Big Round Bales $25 each—call 906-338-2902

HELP WANTED

EXPERIENCED FARMER/FARM FAMILY FOR 500 ACRE DIVERSIFIED FARM ON THE GARDEN PENINSULA IN DELTA COUNTY OF UPPER MICHIGAN. Please forward relevant information and references to DeltaGardenFarm@gmail.com

Thanks for your interest.

For Sale: 300 grass trefoil 4X6 round bales, approx. 1500 lbs each. Cecil twine wrap, stored outside. $60 each. 50 grass-trefoil bales from 2013, same size/weight stored outside $30 each. Call Mike Brzoznoski, 1220 Gibb City Road, Iron River, MI 906-367-1212

Looking for a past edition of the newsletter?
Check out www.maes.msu.edu/upes

MARKET REPORT (11/22/14)
By Frank Wardynski, MSU Extension Educator

Market Ready Prices

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<tr>
<td>Goats</td>
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<td>$1500-$2250</td>
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Breeding and Feeder Animals

- Grade Holstein cows: $1300 - 1800 per head
- Grade Holstein bred heifers: $1300 - 3500 per head

Feed Prices across the U.P.

- Corn: $12.15 per cwt, $243.00 per ton, $243.00 - $343.00 price range
- Soymeals: $31.10 per cwt, $622.00 per ton, $277.00 - $349.00 price range
- Oats: $17.18 per cwt, $343.50 per ton, $31.10 - $349.00 price range
- Barley: $13.85 per cwt, $277.00 per ton, $17.18 - $277.00 price range

Average price/100 wt. for 1 ton lots

Save the Date!

2015 U.P. Agriculture for Tomorrow Conference

The next U.P. Agriculture for Tomorrow Conference will be held at Bay College, Escanaba on Tuesday, March 10, 2015. Agriculture for Tomorrow offers the opportunity to attend educational sessions on a variety of topics, view displays from sponsors, and network with others. We are excited about the topics we will be offering this year around soil health, local food systems, livestock, and plants/crops. Several sessions will again qualify for MAEAP Phase I credit.

Michigan State University AgBioResearch and Extension staff will be hosting a series of meetings throughout the Upper Peninsula to report on the crop variety trials that were hosted at the Upper Peninsula Research and Extension Center this past year. In partnership with Michigan Department of Agriculture and Rural Development, researchers in Chatham were able to test a host of varieties concentrating on small grains and forages. Production data and crop potential in the U.P. will be explored. Specific crops highlighted include malting barley, spring and winter wheat, oats, dry field peas, and various forage crops. Please mark your calendars for the meeting held closest to you. These meetings are open to the public and are free of charge. However, please RSVP so that we can plan accordingly for refreshments. We hope to see you this winter!

If you have any questions regarding the meetings or to RSVP, please contact Ashley McFarland @ ashleymc@anr.msu.edu or 906-439-5176.

Meeting Schedule:

- Mass City Community Center Dec. 1st 7—8:30 pm
- Iron Co. Extension Office, Crystal Falls Dec. 2nd 7—8:30 pm CST
- Menominee Co. Extension Office, Stephenson Dec. 9th 11 am—1 pm CST (lunch provided)
- Sidetracks Restaurant, Cooks Dec. 10th 11 am—1 pm (lunch provided)
- Snack Bar, Eben Junction Dec. 11th 11 am—1 pm (lunch provided)
- Garfield Township Hall, Engadine Jan. 6th 7—8:30 pm
- Delta Co. Extension Office, Escanaba Jan. 7th 7—8:30 pm
- Bruce Township Hall, Dafter Jan. 27th 7—8:30 pm
Reed canarygrass – love it or hate it

Michigan grazers and forage growers have mixed feelings about this forage grass species.

Jim Isleib, Extension Educator

Reed canarygrass, Phalaris arundinacea, is a cool-season forage grass species used by Michigan farmers in certain situations. This grass does best in moist, cool climates. It prefers fertile, moist and swampy soils and is especially well-suited to areas along waterways that frequently overflow. Other forage grasses are better suited to both wet and dry mineral soils.

According to the 2013 Michigan Forage Variety Test Report, reed canarygrass is slow to establish, has a long stand life, is rated ‘good’ on acidic soils and ‘excellent’ on wet soils, has ‘good’ drought, heat and cold tolerance, and is rated ‘good’ for both pasture and hay production. It has a sod-forming root system with rhizomes and creates a very dense stand when established in a favorable location. It is most often found in areas that frequently flood, or along ditches, streams and riverbanks. This plant is considered a native species by the Michigan Natural Features Inventory, although they note that ‘most Midwestern colonies thought to be escapes of cultivated and European forms’ and that ‘the invasive character of some Phalaris populations may be the result of agronomic breeding for vigorous growth and drought tolerance’. Reed canarygrass definitely has the capability of crowding out other plant species in a wet, swampy environment. Native substitutes are being recommended for erosion control applications in some states.

Older varieties of reed canarygrass contain high levels of alkaloids, making them less palatable to livestock than other forage grasses. Newer varieties, including Palaton and Venture have low alkaloid content and are preferred where a reed canarygrass seeding is planned. A seeding rate of 6-8 lbs. per acre for a pure stand and 3-5 lbs. per acre in a forage mixture is recommended. Fall seedings generally are more successful because weed pressure is reduced.

What do Michigan farmers have to say about reed canarygrass? An informal poll was conducted during the MSU Ag Expo farm show on July 22 and 23, 2014. Dr. Kim Cassida, Michigan State University Extension state forage specialist, established a forage demonstration plot at Ag Expo including reed canarygrass, along with several other grass and legume forage species. MSU Extension staff asked several farmers about their experience and opinions about reed canarygrass as they visited the demonstration plots. Responses ranged from ‘love it’ to ‘hate it’.

Positive responses included the way reed canarygrass provides good grazing and hay opportunities when other pastures are suffering from drought, and how it makes good use of wetter sites that would otherwise be unproductive. It is very persistent, but didn’t spread outside the wet areas. When managed properly, these farmers felt that reed canarygrass feed quality was acceptable.

Negative responses focused mostly on perceived low feed value. Reed canarygrass becomes very coarse if not harvested early enough. These farmers thought it was just too coarse and rank to make good feed.

In 1966, MSU released an extension publication called “Reed Canarygrass for wet lowland areas of Michigan”, authored by Carter M. Harrison and John F. Davis.

The publication listed the advantages of reed canarygrass as:

- Makes good use of farm land which, in the past, has been considered wasteland because it was too wet.
- Lengthens the pasture season for most farms by furnishing additional pasture good for five to six and one-half months.
- Produces green, succulent pasture feed after most upland pastures have dried up, or are unavailable.
- Makes a good orchard mulching and packing material.
- A good stand, well fertilized, will carry three head of livestock per acre (as documented in a survey of 60 reed canarygrass fields in 1949, on average, 3 animal units per acre were pastured for 4.8 months – 52% of the fields were pastured longer than 5 months) or will produce a heavy yield of hay, grass silage, or bedding.

Many of these points still apply today, but need to be tempered against changes in our understanding of environmental issues since 1966. Agricultural plant species with the potential to create undesirable environmental impacts should be considered carefully before including them in cropping or grazing systems. However, reed canarygrass, when properly established and managed in a farming situation, still has a valuable niche on some farms.

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Chewy Sugar Cookies

**Ingredients**

- 2 3/4 c. all-purpose flour
- 1 tsp baking soda
- 1/2 tsp baking powder
- 1 c. softened butter
- 1 1/2 c. white sugar
- 1 egg
- 1 tsp vanilla extract
- 3 to 4 Tbsp. buttermilk
- Sprinkles or colored sugar, for decorating

**Directions**

Preheat oven to 375 degrees F.

In a small bowl, stir together flour, baking soda, and baking powder. Set aside.

In a large bowl, cream together butter and sugar until smooth. Beat in the egg and vanilla. Gradually blend in dry ingredients. Add enough of the buttermilk to moisten the dough and make it soft, not wet.

Roll rounded teaspoons of dough into balls and place on a ungreased cookie sheet. With a brush or fingers, moisten the top of each cookie with the remaining buttermilk and slightly flatten the top of each cookie. Sprinkle with raw sugar or colored sprinkles.

Bake for 8 to 10 minutes or until slightly golden. Let stand for 2 minutes before removing to cool on a rack.
USDA Farm Service Agency Announces Key Dates for New 2014 Farm Bill Safety Net Programs

USDA announced key dates for farm owners and producers to keep in mind regarding the new 2014 Farm Bill established programs, Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC). The new programs, designed to help producers better manage risk, usher in one of the most significant reforms to U.S. farm programs in decades. Dates associated with ARC and PLC that farm owners and producers need to know:

- Sept. 29, 2014 to Feb. 27, 2015: Land owners may visit their local Farm Service Agency office to update yield history and/or reallocate base acres.
- Nov. 17, 2014 to March 31, 2015: Producers make a one-time election of either ARC or PLC for the 2014 through 2018 crop years.
- Mid-April 2015 through summer 2015: Producers sign contracts for 2014 and 2015 crop years.
- October 2015: Payments for 2014 crop year, if needed.

USDA leaders will visit with producers across the country to share information and answer questions on the ARC and PLC programs.

USDA helped create online tools to assist in the decision process, allowing farm owners and producers to enter information about their operation and see projections that show what ARC and/or PLC will mean for them under possible future scenarios. The new tools are now available at www.fsa.usda.gov/arc-plc. Farm owners and producers can access the online resources from the convenience of their home computer or mobile device at any time.

Covered commodities include barley, canola, large and small chickpeas, corn, crambe, flaxseed, grain sorghum, lentils, mustard seed, oats, peanuts, dry peas, rapeseed, long grain rice, medium grain rice (which includes short grain rice), safflower seed, sesame, soybeans, sunflower seed and wheat. Upland cotton is no longer a covered commodity. Producers can contact their local FSA office for more information or to schedule an appointment.

USDA Reminds Farmers of 2014 Farm Bill Conservation Compliance Changes

The 2014 Farm Bill implements a change that requires farmers to have a Highly Erodible Land Conservation and Wetland Conservation Certification (AD-1026) on file.

For farmers to be eligible for premium support on their federal crop insurance, a completed and signed AD-1026 certification form must be on file with the FSA. The Risk Management Agency (RMA), through the Federal Crop Insurance Corporation (FCIC), manages the federal crop insurance program that provides the modern farm safety net for American farmers and ranchers.

Since enactment of the 1985 Farm Bill, eligibility for most commodity, disaster, and conservation programs has been linked to compliance with the highly erodible land conservation and wetland conservation provisions. The 2014 Farm Bill continues the requirement that producers adhere to conservation compliance guidelines to be eligible for most programs administered by FSA and NRCS. This includes most financial assistance such as the new price and revenue protection programs, the Conservation Reserve Program, the Livestock Disaster Assistance programs and Marketing Assistance Loans and most programs implemented by FSA. It also includes the Environmental Quality Incentives Program, the Conservation Stewardship Program, and other conservation programs implemented by NRCS.

Many FSA and Natural Resource Conservation (NRCS) programs already have implemented this requirement and therefore most producers should already have an AD-1026 from on file for their associated lands. If however an AD-1026 form has not been filed or is incomplete then farmers are reminded of the deadline of June 1, 2015.

When a farmer completes and submits the AD-1026 certification form, FSA and NRCS staff will review the associated farm records and outline any additional actions that may be required to meet the required compliance with the conservation compliance provisions.

FSA recently released a revised form AD-1026, which is available at USDA Service Centers and online at: www.fsa.usda.gov. USDA will publish a rule later this year that will provide details outlining the connection of conservation compliance with crop insurance premium support. Producers can also contact their local USDA Service Center for information. A listing of service center locations is available at www.nrcs.usda.gov/wps/portal/nrcs/main/national/contact/local/.

USDA Announces New Support for Beginning Farmers and Ranchers

Department Implementing New Farm Bill Programs, Unveiling New Centralized Online Resource to Support Next Generation of Farmers

USDA has announced the implementation of new Farm Bill measures and other policy changes to improve the financial security of new and beginning farmers and ranchers. USDA also unveiled www.USDA.gov/newfarmers, a new website that will provide a centralized, one-stop resource where beginning farmers and ranchers can explore the variety of USDA initiatives designed to help them succeed. USDA’s www.usda.gov/newfarmers has in depth information for new farmers and ranchers, including: how to increase access to land and capital; build new market opportunities; participate in conservation opportunities; select and use the right risk management tools; and access USDA education, and technical support programs. These issues have been identified as top priorities by new farmers. The website will also feature instructive case studies about beginning farmers who have successfully utilized USDA resources to start or expand their business operations. Today’s policy announcements in support of beginning farmers and ranchers include:

- Waiving service fees for new and beginning farmers or ranchers to enroll in the Non-Insured Crop Disaster Assistance Program (NAP) for the 2014 crop year. NAP provides risk management tools to farmers who grow crops for which there is no crop insurance product. Under this waiver, announced via an official notice to Farm Service Agency offices, farmers and ranchers whom already enrolled in NAP for the 2014 crop year and certified to being a beginning farmer or social disadvantaged farmer are eligible for a service fee refund.

- Eliminating payment reductions under the Conservation Reserve Program (CRP) for new and beginning farmers which will allow routine, prescribed, and emergency grazing outside the primary nesting season on enrolled land consistent with approved conservation plans. Previously, farmers and ranchers grazing on CRP land were subject to a reduction in CRP payments of up to 25 percent. Waiving these reductions for new and beginning farmers will provide extra financial support during times of emergency like drought and other natural disasters.

- Increasing payment rates to beginning farmers and ranchers under Emergency Assistance for Livestock, Honeybees and Farm-Raised Fish Program (ELAP). Under this provision, beginning farmers can claim up 90 percent of losses for lost livestock, such as bees, under ELAP. This is a fifty percent increase over previously available payment amounts to new and beginning farmers.
**December 2014 – FSA News, continued**

In the near future, USDA will also announce additional crop insurance program changes for beginning farmers and ranchers – including discounted premiums, waiver of administrative fees, and other benefits.

**DON’T MISS THE DEADLINE – Upcoming Crop Reporting Dates**

January 2, 2015 – Honey (Certifying number of colonies)  
January 15, 2015 – Apples, Blueberries, Cranberries  
February 1, 2015 – Maple Sap (Number of eligible trees and taps)

**GREAT INTEREST RATES : Farm Storage Facility Loans (FSFL)**

Remember: these loans are now available for Hay/Forage Storage as well as traditional grain storage!

November Interest Rates:
- 2.125 percent for 7 years with a loan of $100,000 or less  
- 2.375 percent for 10 years with a loan of $100,000 - $250,000  
- 2.500 percent for 12 years with a loan of $250,000 - $500,000

Contact your local FSA county office for December’s interest rates.

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**REMINDER! Pesticide applicator ‘core manual’ review sessions offered before state certification exams**

For those preparing to take state pesticide application certification exams, and others seeking recertification credit by attending educational programs, 3 review sessions are offered in different U.P. locations. The session is a review of the National Pesticide Applicator ‘core’ manual, including study questions and a practice test. Past participants have found this review helpful in preparation for the exams. It is not intended to replace thorough study of the core manual and any commercial category study materials, available from the MSU Bookstore at http://shop.msu.edu or your local MSU Extension office.

A $10 fee, cash or check payable to ‘MSU Extension’ is required at the door for the review session. Please register for the core manual review sessions by contacting Jim Isleib, MSU Extension at 906-387-2530 or isleibj@anr.msu.edu. Please register for the state exams at https://secure1.state.mi.us/opes/ (enter as a guest) or by contacting MDARD Pesticide and Plant Pest Management inspector David White at 906-250-3554 or whited@michigan.gov

If taking a state exam, separate payment to “State of Michigan” is required, $50 for private applicators, $75 for commercial. Payment is waived for military veterans seeking private certification or recertification who bring along federal form DD-214 that indicates honorable discharge status.

You are not required to attend the review session to take the exam. Lunch will not be provided. A 1 1/2 hour break is scheduled between the review and the exams for participants to have lunch. If taking an exam, bring your own lunch, or plan for a very quick lunch break.

**Friday, December 5, 2014**
MSU Upper Peninsula Research and Extension Center, Chatham, MI
Core manual review: 9:00 am – 1:00 pm eastern time  
State exams: 1:30 pm Eastern time

**Tuesday, January 27, 2015**
State Office Building, large conference room  
305 Ludington Street, Escanaba, MI  
Core manual review: 8:30 am – 12:30 pm eastern time  
State exams: 1:00 pm Eastern time

**Wednesday, February 4, 2015**
Menominee County MSU Extension Office  
904 South US 41, Stephenson, MI  
Core manual review: 8:30 am – 12:30 pm Central time
Forage discussion groups held across U.P.

Jim Isleib, UP Crop Production Educator

A series of small discussion groups focusing on forage issues was held across the U.P. this fall. Farmers representing local areas were invited to attend and share their views on problems and opportunities faced by farmers in their neighborhoods. These meetings were part of a special U.P forage education project organized by MSU Extension educators Jim Isleib and Frank Wardyski, and MSU forage specialist Dr. Kim Cassida, and funded by Project GREEEN. The farmers invited represented the types of farms active in their part of the U.P.

Four meetings have been held so far, in Ontonagon, Rudyard, Rapid River and Daggett. One more is planned. Input from participating farmers has been very honest and direct, interesting and useful, and sometimes critical of MSU. In all cases, farmer comments were noted and recorded. The information received will be used to shape forage-related MSU Extension programs and demonstrations for 2015 and beyond. Naturally, we won’t be able to address everything discussed, but this helps us decide where our efforts should go. A small grant has been secured from the MSU Extension Agriculture and Agribusiness Institute to deliver new forage programming in the Upper Peninsula during 2015.

Ideas and observations that emerged during the small group discussions included:

* Cover crop options for soil improvement and enhanced crop production
* Best ways to bring unimproved forage ground into good condition
* Fertilizer and lime decisions based on economic reality (making it pay)
* Weed problems in perennial forages (ex: wild carrot, leafy spurge)
* Hay marketing and economics
* Assisting and encouraging new and young farmers
* Annual forages (ex: sorghum, forage oats, brassicas)
* Affordable, well-adapted alfalfa varieties
* Tillage practices – no-till challenges
* Need for new focus on marketing end-products for maximum farmer profit (ex: cooperative USDA slaughter facility and meat marketing)
* Corn silage production
* Increasing effective fiber in dairy rations (ex: low lignin alfalfa, high fiber digestibility corn and sorghum)
* Finding ways to collaborate more effectively with University of Wisconsin and private dairy industry to support farms near the Wisconsin border
* Face-to-face meetings and programs are important
* On-farm demonstration and research is valuable to local farmers
* Timing meetings based on farmer availability is important (late fall/winter)
* More focus on good 4-H ag programs for youth

This is a long and impressive list of ideas, and there was a lot more! Thanks very much to the farmers who participated in these discussions.

What happens to corn silage quality due to an early frost?

Frost events will make management decisions more important for silage producers.

Posted on September 23, 2014 by Phil Kaatz, MSU Extension

During the 2014 growing season, the weather has been consistently cooler and wetter in the central and northern portions of Michigan, and frost has occurred in several locations during the latter days of summer. In most years, corn silage harvest starts in late August and early September for most producers. The reduction of growing degree day units and early frost will mean immature corn silage will be harvested in many locations leading to differences in silage quality compared to years with normal growth and development.

When evaluating corn silage quality, most producers consider protein and energy or starch content as the most important characteristics to determine the value of the crop. Immature harvested corn silage will have lower dry matter (DM) yield, starch and energy concentrations, and higher sugar, crude protein and neutral detergent fiber (NDF) concentrations as compared to mature corn silage. Dry matter yield and digestibility of immature corn silage are highest at the time of the first frost and additional losses occur as frosted corn remains in the field. This has led to reduced milk yields after repeated frost events. In addition, the corn silage might have higher effluent losses and extensive fermentation that could reduce dry matter intakes.

Changes in nutrient composition of corn silage with advancing maturity

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<th></th>
<th>DM</th>
<th>CP</th>
<th>NE Mcal/lb</th>
<th>NDF</th>
<th>ADF</th>
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</table>

* Maturity was categorized by dry matter content (% DM): Immature, less than 25% DM; Normal, 32-38% DM; Mature, greater than 40% DM

To manage a frosted immature crop, several factors should be considered at harvest:

- Harvest at the correct DM content. Leaves will quickly turn brown and although the plant appears dry, whole plant DM will not decrease as quickly on a total plant basis. The majority of plant moisture will be found in the stalk and ear. Use whole plant DM to determine when to begin chopping and target moisture content between 32-38 percent DM.
- Harvest as quickly as possible. Increased drying of the plants usually occurs and delays may lead to silage that does not pack properly. Additionally, this will lower the risk of any molds that could grow on the ear while still in the field.
- Monitor silage particle size and kernel breakage. Cornell University recommends that there should be greater than 90 percent of kernels broken or damaged.
- Check each field prior to harvesting as different growing conditions from field to field and hybrid to hybrid will cause whole plant DM to change.
- Use of bacterial silage inoculant should be considered to improve fermentation efficiency and DM recovery. Frost will kill some of the normal bacteria found on the plant.

The best suggestion for producers when harvesting frosted corn silage is to use the basic principles that go hand in hand with good management practices. For more information contact Michigan State University Extension’s Phil Kaatz at kaatz@msu.edu or 810-667-0341.

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Frost events will make management decisions more important for silage producers.

Posted on September 23, 2014 by Phil Kaatz, MSU Extension

During the 2014 growing season, the weather has been consistently cooler and wetter in the central and northern portions of Michigan, and frost has occurred in several locations during the latter days of summer. In most years, corn silage harvest starts in late August and early September for most producers. The reduction of growing degree day units and early frost will mean immature corn silage will be harvested in many locations leading to differences in silage quality compared to years with normal growth and development.

When evaluating corn silage quality, most producers consider protein and energy or starch content as the most important characteristics to determine the value of the crop. Immature harvested corn silage will have lower dry matter (DM) yield, starch and energy concentrations, and higher sugar, crude protein and neutral detergent fiber (NDF) concentrations as compared to mature corn silage. Dry matter yield and digestibility of immature corn silage are highest at the time of the first frost and additional losses occur as frosted corn remains in the field. This has led to reduced milk yields after repeated frost events. In addition, the corn silage might have higher effluent losses and extensive fermentation that could reduce dry matter intakes.

Changes in nutrient composition of corn silage with advancing maturity

<table>
<thead>
<tr>
<th></th>
<th>DM</th>
<th>CP</th>
<th>NE Mcal/lb</th>
<th>NDF</th>
<th>ADF</th>
<th>Lignin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immature</td>
<td>23.5</td>
<td>9.7</td>
<td>0.62</td>
<td>54.1</td>
<td>34.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Normal</td>
<td>35.1</td>
<td>8.8</td>
<td>0.66</td>
<td>45.0</td>
<td>28.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Mature</td>
<td>44.2</td>
<td>8.5</td>
<td>0.61</td>
<td>44.5</td>
<td>27.5</td>
<td>3.1</td>
</tr>
</tbody>
</table>

* Maturity was categorized by dry matter content (% DM): Immature, less than 25% DM; Normal, 32-38% DM; Mature, greater than 40% DM

To manage a frosted immature crop, several factors should be considered at harvest:

- Harvest at the correct DM content. Leaves will quickly turn brown and although the plant appears dry, whole plant DM will not decrease as quickly on a total plant basis. The majority of plant moisture will be found in the stalk and ear. Use whole plant DM to determine when to begin chopping and target moisture content between 32-38 percent DM.
- Harvest as quickly as possible. Increased drying of the plants usually occurs and delays may lead to silage that does not pack properly. Additionally, this will lower the risk of any molds that could grow on the ear while still in the field.
- Monitor silage particle size and kernel breakage. Cornell University recommends that there should be greater than 90 percent of kernels broken or damaged.
- Check each field prior to harvesting as different growing conditions from field to field and hybrid to hybrid will cause whole plant DM to change.
- Use of bacterial silage inoculant should be considered to improve fermentation efficiency and DM recovery. Frost will kill some of the normal bacteria found on the plant.

The best suggestion for producers when harvesting frosted corn silage is to use the basic principles that go hand in hand with good management practices. For more information contact Michigan State University Extension’s Phil Kaatz at kaatz@msu.edu or 810-667-0341.
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## Meetings & Events Calendar

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<tr>
<th>December</th>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>December 1</td>
<td>7:00—8:30 pm UP Variety Trail Update Meeting, Mass City Community Center, Mass City, MI</td>
</tr>
<tr>
<td>December 2</td>
<td>7:00—8:30 pm CST UP Variety Trail Update Meeting, Iron Co. Ext. Office, Crystal Falls, MI</td>
</tr>
<tr>
<td>December 5</td>
<td>9:00 am—1:00 pm Pesticide applicator core manual review, MSU UP Research and Ext. Center, Chatham, MI</td>
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<tr>
<td>December 9-10</td>
<td>Online Bred Heifer Sale Clay Knoll Farms, see insert for details</td>
</tr>
<tr>
<td>December 9</td>
<td>11:00 am—1:00 pm CST (lunch provided) UP Variety Trail Update Meeting, Menominee Co. Ext. Office, Stephenson, MI</td>
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<tr>
<td>December 10</td>
<td>11:00 am—1:00 pm (lunch provided) UP Variety Trail Update Meeting, Sidetrack Restaurant, Cooks, MI</td>
</tr>
<tr>
<td>December 11</td>
<td>11:00 am—1:00 pm (lunch provided) UP Variety Trail Update Meeting, SnackBar, Eben Junction, MI</td>
</tr>
<tr>
<td>December 25</td>
<td>Merry Christmas</td>
</tr>
<tr>
<td>January 1</td>
<td>Happy New Year—2015!</td>
</tr>
<tr>
<td>January 6</td>
<td>7:00 pm—8:30 pm UP Variety Trail Update Meeting, Garfield Township, Hall, Engadine, MI</td>
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<tr>
<td>January 7</td>
<td>7:00 pm—8:30 pm UP Variety Trail Update Meeting, Delta Co. Ext. Office, Escanaba, MI</td>
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<tr>
<td>January 27</td>
<td>8:30 am—12:00 pm Pesticide applicator core manual review, State Office Bldg., large conf. room 305</td>
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<tr>
<td>January 28</td>
<td>7:00 pm—8:30 pm UP Variety Trail Update Meeting, Bruce Township Hall, Dafter, MI</td>
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<tr>
<td>February</td>
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<tr>
<td>March</td>
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<tr>
<td>March 10</td>
<td>AG For Tomorrow Conference—Look for more information in January and February editions</td>
</tr>
</tbody>
</table>

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