



# U.P. Ag Connections Newsletter

August 2017

Agricultural News from MSU Extension and AgBioResearch

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## **Consider getting an energy audit to reduce farm expenses**

Monica Jean, MSU Field Crops Extension  
Educator

An often-overlooked opportunity for reducing expenses is reducing energy consumption. USDA has said that approximately 34 percent of a farm's expenses are energy related. What impact would a 34 percent reduction in their expenses have on your farm?

Two simple things can be done that do not cost anything and can result in savings. First, contact your utility or electric coop and request a rate analysis. A rate analysis looks at the electricity rate structure for the farm and determines if there are better rates they can change to that reduce their total energy expense. Potato farms and farms that use a lot of power for short periods during specific times of the year (i.e. irrigation) stand to greatly benefit from a rate analysis.

The second recommendation is to ask for an energy audit. This is not a Type 2 audit required for USDA REAP or EQIP grant funding. Rather it is a basic, simple audit. This audit does not cost the farm any money because it is a service provided by their utility or electric co-op. Going through a simple audit takes a few hours and will give farmers access to rebates to implement recommended energy conservation practices. A list of agricultural energy rebates for co-ops can be found at michiganenergy.org. Click on the "Farm Programs" button on the right side of the page and select your local co-op.

To qualify for State or Federal funding, such as USDA grants or loans, it is usually required to complete a certified energy audit. The type 2 audit is a more detailed evaluation and report of energy use that considers all major activities and components. The American

Society of Agricultural and Biological Engineers have developed a standard On-Farm Energy Audits S612, defining what needs to be discussed and included in an energy audit.

Michigan State University Extension, Michigan Energy Options and the Central U.P. Regional Prosperity Initiative are collaborating to offer free informational seminars about energy efficiency and the technical energy audits. Michigan Energy Options, a state-wide clean energy nonprofit with offices in Marquette, will also be there to discuss audits and the services they provide. Lunch and refreshments will be provided. Meetings focusing on farms and agricultural producers are as follows:

October 3<sup>rd</sup>, 11am-2pm CT Stephenson  
County Annex

October 4<sup>th</sup>, 11am-2pm Marquette Township  
Hall

Registration: [https://  
www.surveymonkey.com/r/cuppadenergy17](https://www.surveymonkey.com/r/cuppadenergy17)

For more information on these energy efficiency meetings, please contact Nathan Fazer at CUPPAD at (906) 786-9234 extension 1377 or check the CUPPAD website (cuppad.org). Questions or concerns about agricultural energy conservation please contact Charles Gould, Extension Educator, at (616) 994-4547 or [gouldm@anr.msu.edu](mailto:gouldm@anr.msu.edu)

**Please join us!**

**MSU Upper Peninsula  
Research & Extension  
Center Field Day**

**Saturday, July 29th 10-3 pm**

Michigan State University

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# Organic Grain Field Day

August 2<sup>nd</sup>

6:30– 8:00 pm ET

Guindon Farms

9111 County 416 H Rd.

Cornell, MI 49818

- Meet Matt, Barb and their organic, grass fed Limousin herd
- Tour the MSUE organic grain research plot
- Underseeding rates and mixtures will be discussed as a management tool for weed control
- Refreshments provided

**Thank you for funding this research!**



Questions: Monica Jean, MSU Field Crop Extension Educator  
(906)786-3032 or [atkinmon@anr.msu.edu](mailto:atkinmon@anr.msu.edu)

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## Grazing School 2017

Grazing School provides a hands-on experiences for those interested in starting or improving grazing management. Grazing School attendees can expect to learn a variety of tools and subsequently choose to integrate the methods that are most suitable for their particular grazing system. Additionally, attendees will have the opportunity to work with Michigan State University (MSU) experts to collectively graze a group of MSU livestock during the course of the Grazing School. Grazing school will be held September 21st starting at 8 am and concluding September 22nd at 4 pm.

Early registration due September 18th. For more details:

<https://events.anr.msu.edu/GrazingSchool/>

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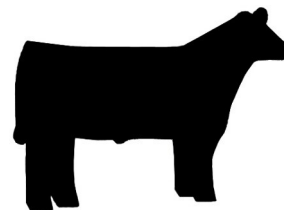
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## Managing corn and soybean fields submerged by recent heavy rains

Monica Jean, Michigan State University Extension  
Kurt Thelen and Kurt Steinke, Michigan State University  
Department of Plant, Soil & Microbial Sciences

The heavy rainfall accumulation encountered throughout the Upper Peninsula has many growers wondering how to approach management for the remainder of the season. There are a couple of items to consider moving forward:

**Assessing plant viability.** The first step is to determine whether plants survived being under water or in saturated soil. Seed that has germinated but not emerged is also susceptible to excessive water damage. In corn, most of the plant mortality will be in localized low areas of the field that were subjected to standing water. The survivability of plants or seedlings under water is dependant on temperature, growth stage, variety, soil type, nutrient status and other factors but is generally in the 24 to 96 hour range. In cool temperatures, plants will survive longer as respiration slows. Conversely, when temperatures warm up, plants consume oxygen quicker, and submerged plants will not survive as long. In cool conditions, corn can survive four days submerged. With soil temperatures warmed up in the upper 70s, submerged corn may survive for only 24 hours. In soybeans, soilborne disease such as pythium and phytophthora can result in plant mortality beyond those areas that were under water. In assessing a soybean stand, for more fertile soils, a minimum of 80,000 to 100,000 living plants per acre are needed to approach the full yield potential of the field. In poorer soils, 100,000 plants per acre are needed. In situations with less than the minimum number of plants remaining, the cost of replanting should be weighed against the expected increase in yield to determine if replanting will be economically feasible.

Generally, the time it takes for submerged soil to dry out enough to get equipment on for management, is usually time enough to make a determination whether or not plants have survived. However, it can be difficult to determine survivability when plants are covered with soil and plant residue left behind by receding water. In these cases, split a plant lengthwise through the stem. The growing point should be relatively firm and white or cream colored. Darkening or softening of the growing point indicates a nonviable (dead) plant.

**Planting/replanting.** Unfortunately, it is getting too late in the growing season to plant or replant. Planting cover crops to help prevent further erosion should be considered. It is not recommended to plant corn after June 15. The rule of thumb most commonly applied to lost yield potential for delayed planting is one bushel per acre per day after May 10, and up to 2 bushels per acre per day after June 1. Corn silage is one of the better forage crops to plant for both yield and quality when faced with late planting conditions. However, there is still a penalty. Wisconsin studies show that corn silage yields from June 10 planting dates were about 30 percent lower than optimal, and by the end of June, the reduction in yield was 50

percent. Soybeans can generally be planted up to the end of June, although yields will likely be reduced commensurate with the later planting date.

**Field operations.** Unnecessary tillage operations on soils that may be marginally wet increase the risk of creating tire and tillage compaction layers that can haunt root development and corn health later if excessively dry conditions suddenly become the norm. In permanent sod fields like alfalfa and hay consider the lost of stand that occurs when equipment or cattle are allowed on wet land. This impact on yield through loss of stand will continue to occur for the life of that seeding unless replanting is done.

**Nitrogen Management.** The presidedress nitrate test (PSNT) is an option for those growers that still have the opportunity to sidedress. PSNT results are more accurate if 40 lb N/A or less was applied at or before planting. If PSNT results measure greater than 25 ppm, no additional N is suggested.

Soil temperatures are generally high across much of the state so unless a nitrification inhibitor was used much of the early applied N likely has converted to nitrate. Denitrification may be an issue in those soils that remained ponded or saturated for an extended period of time. Fields with fine-textured soils and poor internal drainage will be at the greatest risk of denitrification. Estimates are that close to 5% of available nitrate may be lost per day of saturation.

Prior to the rainfall, many fields were heading into prime corn growing weather conditions and approaching peak stages of corn N uptake. The downward movement of nitrate through the soil does not necessarily mean that N is lost as corn roots can still grow into and access N that hasn't reached a tile drain.

Corn that appears chlorotic and N-short may still have sufficient N stored in the soil. Root growth has likely been limited during the saturated conditions which limit plant growth and development. As soils begin to dry and plants resume growth, chlorotic looking corn may begin to green. Corn that was planted late and experienced dry early summer soil conditions may especially look N-deficient.

Although recent research in Michigan has shown that some yield potential may be sacrificed when the majority of N was applied at V10 or later, growers may benefit from a rescue N application as yields greater than 187 bu/A have still been achieved with late-season N applications when little to no N was applied pre-plant or early sidedress.

**Other considerations.** In flooded out areas include potential weed problems from weed seed brought in by encroaching waters, herbicide residue washed in from adjacent fields, loss of herbicide control from excessive leaching or erosion, loss of nitrogen through denitrification or leaching and increased incidence of phytophthora and other root disease. Nodule function in soybeans is also reduced in saturated soil. However, nodule activity resumes to normal levels once the soil dries out. Scout fields closely for these factors and use a PSNT soil test to determine nitrogen losses.

## Pipeline safety is an important farm issue that can't be ignored

By Jim Isleib, Extension Educator

[The Pipeline Ag Safety Alliance](http://pipelineagsafetyalliance.com/) (<http://pipelineagsafetyalliance.com/>) works with extension people across the country to help get the word out to farmers about pipeline safety. A recent message from the alliance includes the following tips:

### Did you know?

- Pipeline depths can change over time due to erosion, previous digging projects, contouring and other factors
- Some pipelines and related facilities may be located above the ground
- Pipeline markers are designed to make you aware of the presence of the pipeline and its approximate location
- Pipeline representatives may be required to be present whenever digging occurs on the pipeline right-of-way
- Even slight contact with a pipeline can cause damage, as pipelines have a protective coating that when scratched, nicked or scraped can cause future incidents, so if a farmer or rancher makes any contact with a pipeline, the pipeline operator should be called immediately
- Pipeline operators can be contacted by phone or e-mail for any questions, and specific contact information (including emergency contact numbers) can be found on printed materials, company websites or pipeline markers in the field



Also, the alliance provides an easy on-line tool called [Find pipelines in your county](https://www.npms.phmsa.dot.gov/) (<https://www.npms.phmsa.dot.gov/>) to look for pipelines in your neighborhood. Use the 'public map viewer' and select your state and county. A colored aerial map will appear with colored lines indicating utility pipelines. You can zoom in to see individual fields.

Farmers and everyone else are urged to [call before you dig](#). It's easy to do...simply dial 811 on your phone. You'll have to think ahead a few days, but the local utilities will mark any underground utilities or assure you that they are not present. 'Digging' includes fence posts, deep tillage, and earth leveling.



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Ron Bates, MSU Extension director of agriculture & agribusiness programs

**Aug. 24**

MICHIGAN STATE UNIVERSITY Extension



## ***Plan now for corn silage success – Part 2: harvest management***

By Jim Isleib, Extension educator

In addition to hybrid selection, there are several additional management components that lead to good success with corn silage. Two important components are crop nutrient management and corn silage harvest methods. It's late to make nutrient decisions for this year, but observing the results of your corn silage fertilization plan can help you next year. These topics have been extensively researched by universities and companies. A brief summary of these points and links to good on-line sources for deeper reading follow:

### **Corn silage crop nutrition**

As with all commercial crops, a good soil testing program is the backbone for development of a good crop nutrition program. Take time to collect a good, representative sample from sampling sites based on topography, soil type and past management, and submit to a reputable soil testing lab. MSU recommends not more than 20 acres be included in a single soil sample. Remember, you're sending the lab a sample of approximately one pound of soil to represent 48 million pounds of soil (20 acres at 8 inch depth).

Livestock manure is often used to fertilize corn silage. Be sure to take full advantage of nutrient credits from manure. Collecting a good representative manure sample and having it analyzed allows farmers to manage their manure resource more efficiently. If manure analysis information isn't available, check the 'book values' for nutrient content of different species in the Midwest Plan Service MWPS-18 [Manure Characteristics](#) publication. Also, make sure those responsible for hauling and spreading keep accurate records of loads hauled on each field. Timely incorporation will have a major impact on retention of the nitrogen component in manure. Following the recommendations based on a quality soil test, and using good fertilizer practices will maximize the growth and development of your corn silage crop.

'Corn fertilization', University of Wisconsin Extension [publication A3340](#) provides an interesting comparison of phosphorus and potassium requirements between silage corn and grain corn at various soil P and K levels and yield goals. [Manure management and air quality](#), a webpage from University of Minnesota Extension provides a good overview of manure management.

### **Harvest management**

There are several considerations when setting up for corn silage harvest. A few key points from [University of Wisconsin Extension's Corn Agronomy – Silage harvesting and storage webpage](#) follow:

**Harvest timing:** Moisture content at harvest should be determined to ensure good quality of silage coming out of your storage. The following are recommended silage moisture

contents for various storage methods: upright silo – 60-65%, upright 'oxygen-limiting silos – 50-60%, horizontal silo – 65-70%, bag silo – 60-70%. Stage of grain maturity is also an important factor in quality silage. The following are visual indicators of moisture: early dent – 73%, ½ milkline – 66%, ¾ milkline – 63%, no milkline – 60%.

**Harvest height:** Increasing cutting height decreases yield, but results in higher concentration of nutrients and improved cow performance. Also, more crop residue is left behind following harvest. This is a tradeoff between yield and corn silage quality that should be carefully considered.

**Silage inoculants:** Corn silage fermentation occurs naturally, but the speed and efficiency of the process may, at times, be improved by using inoculants. The inoculants contain bacteria selected to dominate the fermentation process in the silo.

**Kernel processing:** A properly adjusted kernel processor damages more than 90% of the kernels allowing for more efficient utilization by the cow, pulverizes cob pieces, allows for longer length of cut and requires less power

**Frosted or drought stressed corn:** Moisture content can be higher than the appearance of the crop indicates. Early frosted corn can often be left in the field to accumulate additional dry matter. Late frosted corn at or near the proper maturity should be harvested immediately. Drought stressed corn can accumulate excess nitrates, especially if high rates of N are available to plants, or when a drought stressed crop is chopped within 3 days of rain.

**Rate of filling:** In short, the quicker the better. Rapid filling improves fermentation, lowers overall ensiling costs, and minimizes losses due to weather and advancing crop maturity.

**Packing:** Proper and prompt packing is required to exclude oxygen and promote fermentation. Silage in upright silos creates its own packing pressure while being loaded. Silage bag loaders include adjustments to ensure even bag filling. In bunker silos, wheel tractors with front end loaders or blades should be used to level and pack silage. Crawler tractors do not provide enough compaction. The time and effort spent compacting silage in the bunker affects fermentation. Spending five minutes per ton, running across the surface several times, does a better job than simply spreading off the silage with minimal compaction.

**Sealing the silo:** Prompt and effective exclusion of oxygen from the filled silo will result in improved quality and lower losses. It usually pays to take pains with this part of the process.

These and many more important considerations can be reviewed on UWEX's [Corn Silage Webpage](#).

The MSU Ag Innovation Day "Focus on forages and the future", August 24, 2017 at the MSU Lake City Research and Extension Center offers a variety of forage-related topics, including a session on maximizing quality through proper harvest equipment adjustment.

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## Pasture Walk—Winter-feeding on pasture and hay fields

By Frank Wardynski, MSUE Educator

Pasture walks are set for two locations to address the topic of winter-feeding on pasture and hay fields. Beef farmers in the Upper Peninsula have traditionally fed cattle during the winter months in a confined setting near a barn and lot to avoid moving hay through deep snow. Consequently, an accumulation of matted hay and manure need to be pushed into piles, loaded and spread onto fields. This process can be laborious and requires machinery. Some farmers have taken to feeding hay out in the fields for either a portion of or the entire winter to minimize the challenges of dealing with manure. Strategies include feeding in hay feeders, rolling bales out across the ground and setting bales out for the entire winter during the autumn months.

These pasture walks will address the pros and cons of such practices. Current set locations, dates and times:

Wednesday, September 6, at 6:00 pm eastern time, Upper Peninsula Research and Extension Center, E3774 University Dr, Chatham, MI. Host Paul Naasz

Wednesday, September 13, at 6:00 pm eastern time, Dykstra Beef Farm, 13670 Hwy M-38, Ontonagon, MI. Host Duane Kolpack



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### Market Report

Choice Steers	\$110—\$126 per 100 lbs.
Holstein Steers	\$80—\$110 per 100 lbs.
Hogs	\$77—\$84 per 100 lbs.
Lambs	\$150—\$165 per 100 lbs.
Cull cows	\$55—\$70 per 100 lbs.
Calves	\$135—\$210 per 100 lbs.
Goats	\$200—\$250 per 100 lbs.

#### Breeding and Feeder Animals

Grade Holstein cows	\$1500—\$2200/head
Grade Holstein bred heifers	\$1600—\$2200/head

#### Feed Prices across the U.P.

	Avg. \$/cwt	Avg. \$/ton	Price Range
Corn	\$9.79	\$195.75	\$145-244
Soymeal	\$21.49	\$429.75	\$360-536
Oats	\$9.92	\$198.30	\$180-230
Barley	\$10.21	\$204.25	\$140-262
Average price/100 wt. for 1 ton lots			

## ***Insects on the Farm investigated at last North Farm Short Course of the season***

*Insects on the Farm Short Course gets out the hand lenses and takes to the field to better understand insects, best management, and how to support pollinators*

Insects are important players on the farm – though often thought of as pests and parasites, insects are active in soil health, as pollinators, and even as pest control. Understanding insects in the context of your whole farm ecosystem will help you make informed decisions. Learn insect identification in the field and best practices from MSU Extension Educator Erin Lizotte on integrated pest management (IPM), and hear from Pollinator Project coordinator Megan Milbrath and MSU Extension's Dr. Duke Elsner on supporting native pollinators, including bees and monarchs.

Insects on the Farm will be held on Sunday, August 14<sup>th</sup> and runs from 1-6 pm with refreshments provided.

Short courses qualify for education hours through the [MSU Extension Master Gardener program](#).

Registration is required for these events and can be accessed at <http://www.msunorthfarm.org/short-courses.html> Questions? Contact Abbey Palmer at palmerab@msu.edu or 906-439-5058.



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***If you do not wish to receive this publication, please contact Michelle at [colema98@msu.edu](mailto:colema98@msu.edu) or (906) 439-5114***

**Calendar of Events**

July 29 UPREC Field Day (10 am-3 pm)  
August 13 Insects on the Farm Short Course,  
UPREC North Farm (1—6 pm)

**Eating Through the Eastern U.P. Series**

On Saturdays from 10 am - 12  
Seasonal topic and food at each location  
August 19-Newberry September 16-Rudyard  
October 21-Sault November 18-Brimley

**County Fair Dates**

Ontonagon July 28-30  
Schoolcraft July 28-29  
Luce-West Mackinac August 2-6  
Baraga August 4-6  
Alger August 4-6  
Iron August 10-13  
Marquette August 10-13  
U.P. State Fair August 14-20  
Gogebic August 24-27  
Houghton August 24-27  
Chippewa August 29-September 4  
Dickinson August 30-September 4

**Pasture Walks**

September 6 Upper Peninsula Research and Extension  
Center, E3774 University Dr, Chatham,  
MI. Host Paul Naasz. (6 pm ET)  
September 13 Dykstra Beef Farm, 13670 Hwy M-38,  
Ontonagon, MI. Host Duane Kolpack.  
(6 pm ET)

