

U.P. Ag Connections Newsletter

May 2019 | *Agricultural News from MSU Extension and AgBioResearch* | Volume 23 Issue 5

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NEWS and VIEWS

By Frank Wardynski

I tend not to concern myself with many of the things I cannot control. For example, ag exports. I know they are important and our ag industries need to focus time and dollars towards increasing our market share across the world. But me being a little fish in a big ocean, I focus on farm production practices both in my job and on my own small farming operation.

A few weeks ago I attended the NCBA Legislative Conference in Washington DC while representing the Michigan Cattlemen's Association. It's the second time I've done this. It's a fascinating process. We spend the first afternoon listening to various speakers discussing the topics they would like us to focus on while meeting with legislators. The US, Mexico, Canada Agreement was one of the top priorities. That agreement will be important in replacing NAFTA and allowing free access to those markets. More on this later!

The next day I spent running to legislative offices to give our voice of concern regarding our hot topics of exports, stepping back WOTUS, keeping beef in the USDA dietary guidelines and on school lunch menus, delisting the wolf, etc. One of the interesting observations different this year is that everyone seemed sympathetic to each issue. Two years ago that didn't seem to be the case. Some of our issues were party specific back then and not everyone thought they could support our stance.

The final day included dynamic speakers such as Martha Bárcena Coqui, Mexico's ambassador to the US. She was very interesting and made excellent points about reciprocity. For example, if we are going to put tariffs on aluminum and steel, they need to be able to put tariffs on our beef. If we think we need to audit how well they are following their labor laws, they expect to be able to audit ours, including the hiring of illegal immigrants and their housing and working conditions.

Gregg Doud, Chief Agricultural Negotiator in the Office of the United States Trade Representative, was another speaker. Gregg used to work for the NCBA and now is negotiating for ag exports. He was negotiating with China the morning before speaking to us. He emphasized the USMCA importance and getting that negotiation completed and ratified. Not just because it's important, but more so we can move onto negotiating a trade agreement in Asia. That's the big one. The one we need to get. Opportunities there are huge for almost every agricultural commodity.

Milk and meat per capita consumption isn't growing here in the US and if we hope to continue expansion, we'll need to move the extra product to other countries. In addition to the opportunities increasing of exports, we need to recognize the agricultural growth in countries such as Brazil and Argentina. They are rapidly growing their ag sectors and production and slowly improving their infrastructure. They are poised to capture any exports we lose or don't get.

I still believe the most important thing we can do is take care of our own businesses here at home. But we also need to pay attention to the rest of the world from both a marketing opportunity and competition standpoint.

Spotlight on agricultural education: Linking the school garden to the farm

Teaching students about the seed cycle, commercial food production and careers in agriculture.

By Monica Jean and Abbey Palmer, Michigan State University Extension

Spring is an exciting time for farmers and gardeners, as they plan their gardens and envision the harvest. Students at schools with gardens and agriculture education projects feel this excitement, too, as they decide what to plant and learn about our food system along the way. Michigan State University Extension staff and educators in Michigan's Upper Peninsula have been creating opportunities for youth to experience agriculture through land-based learning in a program called Start Seeds, Save Seeds.

This approach to agriculture education offers opportunities for schools to engage with area farms, Extension educators, and community groups. With the knowledge, resources, and skills of these local experts on hand as co-facilitators of the learning process through visits to classrooms and farms, students identify and understand issues in the food system through hands-on activities and problem solving. In land-based learning, the students begin with curiosity about a phenomenon they observe – say how it is that we can buy produce year round in the grocery store, despite the fact that UP farms are under a blanket of snow – to obtaining information through studying growing season length and the cost of transportation, to planting transplants in their school garden and taste-testing them as a class to determine what from the garden could be included in the lunch room salad bar.

Start Seeds/Save Seeds gives students the opportunity to learn about where food comes from, to try ideas that improve the sustainability of their school, and explore potential careers in agriculture and food systems. Participating schools receive seeds, transplants, educational activities and technical assistance for their school gardens or hoop houses. Start Seeds/Save Seeds encourages teachers and students to think of their school garden as a place to grow seeds as well as food. When students learn about seeds, they can also study plant life cycles, study basic genetics, learn the history of our most common food plants and start gaining exposure to careers in food systems. The program was launched in 2015 with three schools in Marquette and Alger counties to provide technical assistance and experiential learning opportunities.

After two years of grassroots support from MQT Growth, Partridge Creek Farm, and Transition Marquette County, the program sought additional funding from the Central Upper Peninsula Planning and Development Regional Commission to expand to 11 schools in four counties in 2018. Students got to visit a farm, exposing them to food production and a first-hand look at the food system. Many schools also received a classroom visit including a taste-testing of local foods and a presentation on potential careers that exist in agriculture.

Approximately 453 students and teachers participated in this program. We were able to capture feedback from 75 students; the average student agreed:

They know more about possible jobs in agriculture.

They plan to start seed saving at home or in school.

They could describe the cycle of seed saving.

They could identify a crop or produced on local farms.

Tomato plants started from seed are distributed to Central UP schools through Start Seeds/Save Seeds.

When kids participate in the process from growing and eating the plant, they have the opportunity to see themselves within the larger food system. They start to look at their relationship to food—whether that's in their garden, at the farmers' market or at the grocery store—as a dynamic, seasonal process that involves specialized knowledge and many hands across the food system.

For inquiries, please contact Abbey Palmer at palmerab@msu.edu or Monica Jean at atkinmon@msu.edu.

Munising High school students tend their hoop house for early spring greens from spinach that was planted in the fall and overwintered.

Increasing Alfalfa Hay Yields by Addressing Sulfur Deficiency

MSU Extension and Charah, Inc. partnered to test two FGD Gypsum products to correct sulfur deficiency, increasing yields in alfalfa.

By James DeDecker and Christian Tollini, Michigan State University Extension

Sulfur is an essential element for forage yield, quality regrowth, and stand durability. Alfalfa utilizes more sulfur than many other field crops, approximately 5-6 lbs. per ton of dry matter harvested. In years past, sulfur deficiencies were uncommon in Michigan alfalfa. Mineralization of organic sulfur and deposition of atmospheric sulfur dioxide emitted during fossil fuel combustion easily fulfilled the crop's sulfur requirement in most fields. However, our air has become cleaner since the Clean Air Act of 1963 and the decline in atmospheric sulfur deposition is making sulfur deficiency increasingly common, particularly where soil organic sulfur and mineralization capacity are limited. Inadequate levels of available sulfur are not only directly detrimental to alfalfa, but can also inhibit uptake and utilization of nitrogen by the crop, due to the synergistic roles of sulfur and nitrogen in protein synthesis. A 2015 state-wide survey of tissue sulfur levels found that 58% of alfalfa stands in Northern Lower Michigan and the Upper Peninsula were deficient in sulfur. To remedy these deficiencies, MSU Extension conducted a study in Northeast Michigan testing the impact of different sulfur fertilizer sources on alfalfa-grass hay yield and quality.

Two different treatments of SUL4R-PLUS flue gas desulfurization (FGD) Gypsum products were applied to a two year old alfalfa stand in Onaway, MI where prior tissue testing showed sulfur deficiency. The plot was on Onaway Fine Sandy Loam soil. The first treatment was SUL4R-PLUS Gypsum at a rate of 147 lbs/acre (25lbs/acre Sulfur) at green-up. Treatment two was SUL4R-PLUS B+Z Gypsum at a rate of 147 lbs/acre at green up. The third treatment was untreated control.

An initial aggregate soil sample of the field was taken prior to any applications to measure soil quality and sulfur availability. In addition to the soil test, tissue sampling across each plot was done after first cutting to identify nutrient uptake throughout the growing season. In addition to nutrient analysis, yield and forage quality samples were taken in each treatment to quantify returns to fertilizer sulfur. Harvest of first cutting took place July 17th and second cutting harvest took place September 12th.

The SUL4R-PLUS B+Z at 147 lbs per acre treatment at green-up was associated with the highest overall forage yield of 4299 lbs DM per acre, exceeding the control treatment by 1551 lbs. of dry matter per acre and enhancing net income by $58.01 per acre. The SUL4R-PLUS gypsum treatment produced the second highest overall yield of 4059 lbs DM per acre, exceeding the control by 1311 lbs DM/acre, and also showed the highest percentage of both sulfur and nitrogen in tissue samples. Both the SUL4R-PLUS and SUL4R-PLUS B+Z exceed the tissue sulfur sufficiency threshold of 0.2% for alfalfa at bloom, while the control was slightly deficient. All treatments were sufficient in boron, but the SUL4R-PLUS B+Z did have a higher concentration of boron than the control did. Conversely, the SUL4R-PLUS had a Boron concentration lower than the control. Zinc levels in each treatment were not significantly different from each other. However, despite higher sulfur and nitrogen levels, crude protein and relative feed value were not significantly different than the control treatment. This could be due to the maturity of the alfalfa at the time of first cutting. Due to persistent rains, harvest was delayed 3-4 weeks significantly reducing the quality of the forage. In addition to maturity, alfalfa weevil damage was also widespread across the plot, leading to widespread defoliation of the alfalfa.

In summary, it is apparent that both FGD gypsum and FGD gypsum with Boron and Zinc can be effective sources of fertilizer sulfur for forage production. While FGD gypsum alone applied at spring green-up outperformed FGD gypsum with Boron and Zinc treatments at first cutting, additional yield is gained at second cutting with Boron and Zinc in addition to gypsum that increases overall yield. More research is required to fully understand the relationship between the high tissue sulfur and nitrogen concentrations supported by gypsum treatment and forage quality outcomes.

Table 1: Alfalfa Dry Matter Yield by Treatment

Treatment	First Cutting (DM lbs/a)	Second Cutting (DM lbs/a)	Total Yield (DM lbs/a)	Cost per Acre	Net Return per Acre @ $100/T
SUL4R-PLUS B+Z	2693.56 a	1596.50 a	4290.07 a	$19.54	$57.46
SUL4R-PLUS	2898.43 a	1175.96 ab	4074.39 a	$19.54	$46.46
Control	2109.82 b	643.36 b	2753.18 b	$0.00	$0.00

Table 2: Alfalfa Tissue Nutrients by Treatment

Treatment	Tissue Ca (%)	Tissue S (%)	Tissue B (ppm)	Tissue Zn (ppm)
SUL4R-PLUS B+Z	2.03% a	0.228% ab	59.00 a	28.00 a
SUL4R-PLUS	1.95% a	0.240% a	44.00 b	27.75 a
Control	1.95% a	0.205% b	54.25 a	29.00 a

Table 3: Alfalfa Forage Quality by Treatment

Treatment	First Cutting Crude Protein (%)	First Cutting RFV	Second Cutting Crude Protein (%)	Second Cutting RFV
SUL4R-PLUS B+Z	4.65% a	94.90 a	20.10%	135.97
SUL4R-PLUS	4.63% a	94.85 a	16.39%	113.16
Control	4.53% a	98.98 a	15.52%	113.84

2018 Upper Peninsula Corn Performance Trials

M.P. Singh, J. Lauer, M. Jean, C. Kapp, W.D. Widdicombe and L.A. Williams

Michigan Corn Performance Trials (MCPT), conducted by Michigan State University (MSU) has had a long history in the Upper Peninsula (UP). In 2018, the MCPT team (Maninder Singh, Bill Widdicombe, and Lori Williams) in partnership with the UP research and extension team (Ashley McFarland, Monica Jean, Christian Kapp and Andy Bahrman) collaborated with the University of Wisconsin Corn Performance Trials (WCPT, Joe Lauer) to conduct a corn hybrid evaluation trial on Pleasant View Dairy Farm (Charlie Meintz) in Menominee County with entries from WCPT's Marinette County, WI location.

Additionally, hybrid performance from the WCPT Marinette County location (representing an environment similar to the UP) was reported with permission from WCPT team. This collaboration was developed as part of an effort to improve the relevancy of MCPT trials in the UP, and was supported by funding from MSU AgBioResearch and MSU Extension. A minimum of 58 grain hybrids and 40 silage hybrids were planted at both locations, with additional entries at the UP location solicited from local seed dealers.

Planting was accomplished using a Winterstieger Plot King Planter on May 14 at a target seeding rate of 31,600 seeds/acre. Previous crop in the field (sandy loam soil) was corn. Corn silage and grain plots were harvested on September 9 and October 29, respectively. For trial results visit https://varietytrials.msu.edu/corn/. For details on the WCPT location in Marinette County, please refer to University of Wisconsin bulletin A3653 (available at https://corn.agronomy. wisc.edu/HT/2018/2018Text.aspx).

Just a reminder it is time…

to schedule your bull testing!

Renee Coyer –Thompson Vet Clinic

(906) 341-2813

Note: Renee will be traveling to the western UP to conduct Breeding Soundness Exams on May 3, 2019. To schedule an appointment, contact Frank Wardynski (906)884-4386 or wardynsk@msu.edu. She will also be at MSU UPREC on May 7.

Springtime Manure Management

Spring has – finally –made its undeniably grand debut in Upper Michigan, announcing itself with an increase in daylight, decrease in snow piles, and those telltale heavy rains, awakening the frogs and eliciting flood warnings across the peninsula. As the earth thaws out beneath us, so do those manure piles, and it's time to initiate a manure management routine.

On farms where manure and fresh fruits and vegetables comingle, there are some extra considerations to implementing an appropriate manure management plan. Raw, untreated manure can pose some significant microbial risks if applied to produce or produce production areas, and those risks need to be mitigated. The leading risk associated with untreated manure is the ability of all manures to carry human pathogens. The pathogens present in manures vary depending on the livestock that produced the manure. Poultry, for example, are typically carriers of *Salmonella* and *Campylobacter,* while ruminants will often shed toxigenic *E. coli* in their manure. Many other factors, including the age and diet of livestock or which season the manure was produced, also affect the presence of human pathogens in manure.

There are many ways to minimize the inherent food safety risks that come with having manure present on the farm. Raw manure storage should be located away from fruit and vegetable fields, in an area where potential runoff will not enter production areas. Proper handling practices should be utilized to prevent any cross-contamination with composted manure. Shared-use equipment, such as a tractor used for both moving manure and preparing vegetable fields, can result in cross contamination if not properly cleaned between uses. If raw manures are used to fertilize fruit and vegetable fields, an application-to-harvest interval date should be observed, known commonly as the '90-120-day rule'. This standard recommends a 90-day interval from the day the manure was spread to the day the crops are harvested for produce that does not typically touch the ground during growth, such as trellised tomatoes and cucumbers, while it is best practice to observe a 120-day interval for crops grown in or on the ground, such as carrots and melons. In the UP's brief growing season, it can be challenging to meet these interval dates and still have time to grow a crop. Applying raw manure to a field in the fall, after harvest, can serve as a practical way to fertilize fields and minimize food safety risks. Of course, another option is to treat the manure with a scientifically validated process, such as aerobic composting, to eliminate harmful pathogens and create a safe, beneficial value-added product.

Landen Tetil, Produce Safety Technician
Marquette County Conservation District

Your Input Matters: Helping Farmers Under Stress Survey

A team of researchers at Michigan State University (MSU) and MSU Extension are trying to learn the best methods to give farmers resources for managing stress through their mobile devices. We would like to invite you to participate in a 5-minute, anonymous survey about your preferences for receiving information through your mobile device, as well as topics of interest. To take the survey go to: Farm Stress Survey. If you have concerns or questions about the survey please contact Amanda Holmstrom at holmstr6@msu.edu.

The survey will be open through May 31, 2019.

Northern Michigan Livestock

Gaylord, MI—I-75 (Exit 282), 2 miles west on M-32 to N Townline Road, go 2 miles North to Sale Yard

2019 Spring Feeder Cattle Sales

All Sales are on Fridays @ 12 pm

May 10

Preconditioned cattle will be sold first on April 26th, proof required

- Pre-conditioning program strongly recommended
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- Request cattle be brought in the day before sale
- Bred cattle & breeding bulls may be sold at sales
- Steers in question will be sold as bulls

Sale Barn Telephone (989) 732-5732

Frank or Jan Leist—Telephone (231) 439-5679

See us on our website: www.northernmichiganlivestock.com

Report Cover Crop Fields in U of M Survey

University of Michigan researcher Jennifer Blesh is collaborating with members of Michigan State University Extension to map winter cover crop use in Michigan. The research team will be collecting the location (GPS points) of fields, and type of cover, as part of an audit to document winter cover crop use in the state. The project is funded by the USDA, and will determine how the cover crops are performing in different locations, soil types and climate conditions to assist farmers with more effective use of cover crops. All data collected will be anonymous and not linked to individual farms. If you are a grower who plants cover crops, and you would like to have your field(s) included as part of this winter cover database, send an e-mail to Jennifer Blesh at jblesh@umich.edu.

Classifieds

FOR SALE: NH 1003 AUTO BALE WAGON . Holds 84 small square bales. Excellent for one person hay operation. $3900. Good condition. Rock (906)356-6505.

HERD REDUCTION: Red Angus heifers and bulls. Top bloodlines. Gentle and easy to handle. (906) 238-4236.

FARM FOR SALE by owner: 278A / 200 tillable, 160A adjacent to farm buildings, some woods for harvest/ hunting. Includes 96' barn, 6 buildings, 2 wells. All structures have metal roofing. $382,000. Visit FB Link - Brimley Sales for pics/details. Contact Melvin Schwiderson @ (906) 248-6633 or northwind906@icloud.com

Beautiful property in the Upper Michigan, 130 acres In Perkins for sale or pasture for rent for livestock for the 2019 season. Beautiful river running through it. Great for hunting, building or developing, or simple grazing livestock. Land is divided into 9 paddocks with high tensile electric fence and 5 stock watering ponds. Call (906) 359-4825.

FARM FOR SALE: Upper Peninsula Farm with over 1,100 acres, water access, maple syrup production, and much more! **Shady Lane Farms**
http://shadylnfarms.wixsite.com/shadylnfarms
Henry DeGroot (906) 238-4251
hjdegroot@alphacomm.net

WANTED TO BUY: Feed barley or yellow peas in large totes or semi loads. Also, 2019 hay bales off of field. Prefer 4x6 bales in Delta, Schoolcraft or Alger County. Call Dan Dalgord (906)644-2276.

FOR SALE: John Deere B. Clean, less than 50 hrs on rebuild. **Allis-Chalmers C**. New paint, runs good. **Hay Hauler**. Hauls up to 10—4x6 round bales, use spear on back, don't have to unhook. Call Terry (906)644-2777.

FOR SALE: 9680 Lilliston No-Till Grain Drill. The Chippewa Luce Mackinac Conservation District is accepting closed bids until May 15th, 2019. Drill has been rented and maintained by Conservation District for over 20 years. Drill/planting width is 10.5ft. Transport width is 14.5ft. Weight is 5500 empty. Will require some work. Comes with owners manual. Please contact Mike at (906) 635-1278 for additional information. Bids can be sent to CLMCD 2847 Ashmun St. Sault Ste Marie, MI 49783.

Market Report

Choice Steers	$118—$128 per 100 lbs.
Holstein Steers	$80—$100 per 100 lbs.
Hogs	$73—$83 per 100 lbs.
Lambs	$160—$180 per 100 lbs.
Cull cows	$45—$55 per 100 lbs.
Calves	$75—$100 per 100 lbs.
Goats	$200—$260 per 100 lbs.

Breeding and Feeder Animals

Grade Holstein cows $850—$1375/head

Grade Holstein bred heifers $1000—$1300/head

Feed Prices across the U.P.

	Avg. $/cwt	Avg. $/ton	Price Range
Corn	$10.03	$200.50	$155-262
Soymeal	$19.34	$386.75	$360-450
Oats	$12.00	$240.00	$200-300
Barley	$9.78	$210.00	$160-260

Average price/100 wt. for 1 ton lots

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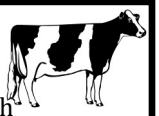

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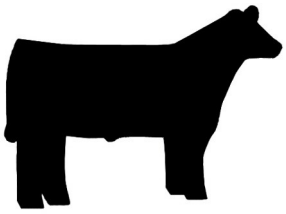

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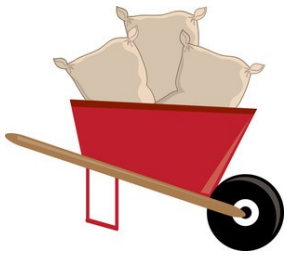

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Calendar of Events

Carney-Nadeau FFA Alumni Consignment Auction—May 5—Machalk's Specialty, Stephenson, noon
Northern MI Livestock Feeder Cattle Sale—May 10—Gaylord, noon
UP Food Summit—May 17—Bay West Campus, Iron Mountain, 9 am-1 pm CT