



U.P. Ag Connections Newsletter

July 2022

Agricultural News from MSU Extension and AgBioResearch

Volume 26 Issue 7

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News and Views

By Frank Wardynski, MSUE

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Did nitrogen fertilizer pay on grass hay in 2022?

We had a great event this year for the Ag for Tomorrow Conference, especially given all the Covid protocols in place and how rapidly they were changing. All our advertisement indicated masks would be required. At the time both Bay College and Michigan State University were requiring it. About a week before the conference, Bay dropped the mask requirements and days before MSU followed suit.

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MSU Artisan Cheesemaking workshop

We had four tracks of classes covering specialty crops, crops, farm homestead and livestock with a good mix of speakers that included industry representatives, farmers, agencies, and educators from MSU. We had a fabulous lunch with most of the food made from local food donated by MSU Upper Peninsula Research and Extension Center (UPREC) North Farm and Bahrman Potato Farm.

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UP State Fair judging schedule

The conference started with Keynote speakers Abbey Palmer and Lori Wardynski. Abbey Palmer serves as a Community Food Systems Educator for Michigan State University Extension and works with schools and farms throughout the Upper Peninsula. She coordinates educational activities for people of all ages at UPREC. Abbey shared many of the activities taking place in schools across the Upper Peninsula. Agriculture is an excellent tool to use in teaching science and math. It allows students to have a hands-on approach with visual demonstration of how science works. It also answers an age-old question of how I am going to use this in real life.

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Meet Michigan: Stakeholder Conversations

Abbey highlighted innovative activities how each school modified their teaching activities to meet their objectives. One school was looking for a heat source for their green house. They also had access to the exhaust coming out of their boiler system. With some tubing set up as a manifold they found low-cost heating system. Abbey talked about how passionate the schools using agriculture in the teaching activities. They really see the importance of understanding where our food comes from and how it is produced. The final part of Abbey's talk was about the high school agriculture curriculum at Carney-Nadeau school and with the Gogebic-Ontonagon Intermediate School district.

UPREC receives funding for new cattle research

Following Abbey, Lori Wardynski, CTE agriculture instructor and FFA advisor, spoke about the activities she has started within the intermediate school district. Lori teaches agriscience curriculum at three separate locations covering six school districts. She is also advisor to the Gogebic-Ontonagon FFA Chapter which includes all the students from across all six districts.

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Lori thanked Abbey for her support in developing her greenhouse curriculum and serving on the advisory committee. Lori also thanked Pat Wehner, agriscience instructor and FFA advisor at Carney Nadeau School District. Pat has been helpful in helping her prepare FFA members for competitions.

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Market Report

Lori talked about various activities she has taken students through in curriculum, field trips, and FFA competitions. Lori also told of her first agriculture experiences and how much she learned through 4-H activities and growing up on the farm. She thinks it is important to be able to teach students that have not grown up in agriculture. Those first experiences are so important in developing their knowledge and impression of agriculture, where our food comes from and how it is grown.

By the way, did you notice Lori's last name is the same as mine? Yeah, I am a pretty proud dad.

Did nitrogen fertilizer pay on grass hay in 2022?

Christian Kapp—UPREC research technician

According to university and private industry recommendations, a grass hay grower should always apply at least 25 to 50 lbs./ac of Nitrogen (N) at green-up, as N is such a primary driver of biomass yield. However, this year has seen tremendous volatility in the fertilizer market due to a number of black swan events, which are primarily out of our control (supply chain, war, energy tariffs/boycotts, rail infrastructure shortfalls, market monopolies, etc.) This leads to the question, “Can I afford to apply fertilizer to my hay ground?” My personal answer on my farm this year was no, I could not. Moreover, I have heard a number of other producers say the same thing. This led me to wonder, how much of a yield difference is there between 0 and 50 lbs./ac. of N, and what is the rate on return? Consequently, I decided to conduct a simple N trial in our meadow brome variety study at UPREC.

The design was a strip trial replicated four times. Four plots received 50 lbs. of N/ac in the form of urea (46-0-0); the other four plots received no fertilizer. Fertilizer was applied at green-up with a Gandy drop spreader. The meadow brome variety was “Fleet”. Our soil type is Eben Very Cobbly Sandy Loam. The plot was harvested on 6-15-22 at heading stage with a Carter flail harvester. An area of 3 ft wide X 17 ft long was cut and the biomass was collected in a 30 gallon container. The whole plot was weighed, and then a subsample was taken and dried to determine dry matter content (DM).



Meadow brome grass on the left received N fertilizer, grass on the right did not.

Results are shown in Table 1. Means followed by different letters are significantly different.

Table 1.

Treatment	DM tons/ac
Control	1.22 b
50 lbs./ac N	1.98 a
Tukey's HSD P=.05	0.59
Standard Deviation	0.26
CV	16.42
Grand Mean	1.59

According to these results, an increase of 0.76 DM tons/ac was realized with the fertilizer application over the control. Table 2 contains a simple crop budget. Custom rates for dry fertilizer spreading were obtained from the MSU Extension farm management page. Hay pricing was acquired from the current Hay and Forage grower report and the most conservative price amongst the Midwest states was used. Urea was factored in at \$800/ton. A price of \$5.50/ gallon was used for diesel fuel.

Table 2.

Expenditure	Net cost/ac
Diesel fuel	\$0.83
Fertilizer spreading	\$6.02
Fertilizer cost	\$43.50
Total Expense	\$50.35
Income	Per ton
Cash price	\$100.00
Yield @ 1.98 ton/ac	\$198.00
Return over direct expenses	\$147.65
Income difference between treatments	
Yield @ 1.98 ton/ac	\$147.65
Yield @ 1.22 ton/ac	\$122.00
Fertilizer return on investment	\$25.65

So, applying fertilizer in Chatham returned approximately \$25/acre this year. However, I did not factor in land rent, the time spent in driving to pick-up the fertilizer spreader, or other indirect costs such as depreciation. Obviously, if fertilizer prices are low, and hay value is high, a greater rate of return will be realized. Additionally, fertilizer performance is dependent on the climate for optimum utilization; hot and dry conditions will negatively impact return on investment.



MSU ARTISAN CHEESEMAKING WORKSHOP
August 17 - 19, 2022 | 8 a.m. - 6 p.m.

- Registration: \$435.00 per person, Includes all supplies for cheesemaking, course materials, lunch each day and cheese tasting.
- Registration is limited to 20 participants.
- To Register visit: <https://events.anr.msu.edu/cheese22/>
- Contact Phil Durst, durstp@msu.edu, (989) 387-5346 for more information

This is a hands-on workshop in which participants will learn and make both hard and soft cheeses under the instruction of experienced artisan cheesemakers. This workshop is intended for new or experienced cheesemakers who want to do it as a business.

WORKSHOP LOCATION : NATURAL WAY CHEESE
6060 E. Beaverton Rd
Clare, MI 48617

2022 Judging Schedule



Dairy Cattle - Department 1 & 2

Thursday, August 18,—9:00 A.M.—Jr. Show
Thursday, August 18,—1:00 P.M.—Open Show

Beef Cattle—Department 3

Breeding Stock —Thursday, August 18,—8:00 A.M.
Scottish Highland—Friday, August 19—10:30 A.M.
Supreme Champion— Friday, August 19—4:00 P.M.

Jr. Beef Cattle—Department 4

Tuesday, August 16, 9:00 A.M.
Showmanship, followed by Pee Wee Showmanship, Followed
by Market followed by Jr. Beef Breeding

Sheep—Department 5 & 6

Wednesday, August 17—5:00 P.M.
Showmanship, followed by
Pee-Wee Showmanship, followed by Market Lamb
Wednesday, August 17—7:00 P.M.

Open & Jr. Breeding Stock
***Open & Jr. Breeding Stock will run concurrently

Goats—Department 7

Tuesday, August 16—4:00 P.M.
Showmanship, followed by
Pee-Wee Showmanship, followed by Market Class, followed
by Breeding Stock (Open & Jr.)

Swine—Department 8

Wednesday, August 17—9:00 A.M.
Showmanship, followed by Market Class

Poultry—Department 10

Thursday, August 18—9:00 A.M.
Jr. Poultry Showmanship followed by Jr. Poultry Breed
Judging, followed by Open Breed Judging, followed by
Jr. Market and Open Egg Judging.

Rabbits—Department 11

Tuesday, August 16—9:00 A.M.
Jr. Showmanship, followed
by Pee-Wee Showmanship, followed by Jr. Breed
Classes, followed by Open Classes

Horses—Department 12—Open Show

Monday, August 15—1:00 P.M.
Section 1 Miniature Horse
Friday, August 19—12:00 P.M.
Section 2 Speed Events
Saturday, August 20—8:30 A.M.
Section 3 Halter & English
Sunday, August 21—8:30 A.M.
Section 4 Western & Trail

Horses—Department 13—Jr. Show

Tuesday, August 16—8:30 A.M.
Section 1 Pleasure Show
Thursday, August 18—8:30 A.M.
Section 2 Speed Classes

Draft Horse & Mule Show—Department 14

Wednesday, August 17—10:00 A.M.
Section 1 Halter Show

Wednesday, August 17—5:00 P.M.
Section 2 & 3 Cart Classes & Hitch Classes

Draft Horse & Pony Pulling—Department 15

Saturday, August 20—5:00 P.M.
Pony Pull
Saturday, August 20—Following Pony Pull
Draft Horse Pull

2022 Special Events

Queen/Princess Crowning

Monday, August 15—6:30 P.M.

Overall Showmanship

Thursday, August 18—6:30 P.M.

Market Chicken & Egg Auction

Friday, August 19—5:30 P.M.

Livestock Skillathon

Friday, August 19—9:00 A.M.

Beef Supreme Drive

Friday, August 19—4:00 P.M.
Adult Beef Showmanship following Beef
Supreme Drive

Market Record Keeping Awards

Friday, August 19—1:00 P.M.

Beef Jr. Team Fitting Contest

Friday, August 19—2:00 P.M.

Jr. Market Livestock Auction

Saturday, August 20—11:00 A.M.

White Dove Release

Daily at 3:00 P.M. in front of the
Poultry Barn
(Weather Permitting)
Sponsored by: WW Lofts

Meet Michigan: Stakeholder Conversations

July 19, 2022, 12:00 p.m.

Presque Isle Pavilion, 3 Peter White Drive, Marquette

Please join us on Tuesday, July 19 at 12:00 p.m., for Meet Michigan: Stakeholder Conversations.

Open dialogue with stakeholders is one of the tenets that helped build the Michigan State University (MSU) College of Agriculture and Natural Resources (CANR). The essential relationships with our stakeholders help guide our research and outreach agenda and are the cornerstone to our success as a land-grant institution. We want to continue that by giving your organization's leaders and members an opportunity to engage with the senior leadership of MSU and CANR right in your own backyard.

Come and hear about our key research initiatives and learn about how we are engaging students and educating residents on important issues. Short presentations will kick off the forum, followed by a robust question and answer period to address local issues. MSU Provost Teresa K. Woodruff, Ph.D, will join this session to hear from MSU's valued partners in Michigan's Upper Peninsula. The speakers' panel includes:

- **Teresa K. Woodruff**, Provost and Executive Vice President for Academic Affairs, MSU
- **Kelly Millenbah**, Interim Dean, College of Agriculture and Natural Resources
- **George Smith**, Director, AgBioResearch
- **Quentin Tyler**, Director, MSU Extension

Please register by July 17.

[Event Summary for Meet Michigan: Stakeholder Conversations July 19 | ANR Events Management System \(msu.edu\)](#)

For more information, please contact ANR Event Services at 517-353-3175 or email at events@anr.msu.edu

UPREC Receives Support for New Beef Cattle Feeding Research

The MSU Upper Peninsula Research and Extension Center was recently awarded nearly \$150,000 from the Michigan Alliance for Animal Agriculture (M-AAA) to conduct new beef cattle feeding research at the Chatham, MI facility. The new project is led by Dr. Jongkyoo Kim, an Assistant Professor in the Department of Animal Science with expertise in muscle biology and meat science. Other team members on the project include Paul Naasz, UPREC Farm Manager, Dr. Jerad Jaborek, MSU Extension Beef Feedlot Specialist, Dr. James DeDecker, UPREC Director, and Dr. Cedric Gondro, Animal Science Professor.

The project is titled "Improving beef cattle production with guanidinoacetic acid (GAA) supplementation" and will investigate the effects of feeding GAA to Red Angus and Red Angus X Akaushi steers in confinement. Guanidinoacetic acid (GAA) is a precursor of creatine, which is naturally produced by the body to facilitate energy storage in the skeletal muscle. Research in poultry and pigs, as well as to a limited extent in cattle, has demonstrated beneficial effects of dietary GAA supplementation with improvements in average daily gain and feed efficiency. However, mechanisms by which dietary GAA supplementation can increase performance in cattle have not yet been described. It is hypothesized that dietary GAA supplementation fed to growing beef cattle increases skeletal muscle mass and red meat yield by up-regulating the genes responsible for skeletal muscle development and growth. The aim of this research is to record the growth performance, carcass characteristics, and measure the relative expression of the genes responsible for muscle development and growth to elucidate the effects of feeding GAA to cattle. Results from this study could provide beef cattle producers with a natural supplement to enhance muscle growth and improve the economic efficiency of raising cattle for beef production, especially for producers targeting the natural beef market.

This type of cattle nutrition research is somewhat new for UPREC. The study will be conducted in the UPREC South Farm tie-stall dairy barn, with temporary modifications to provide individual pens for 30 head of cattle. This will allow the team to use individual animals as the experimental unit of interest, greatly improving our ability to detect differences between the treatments. This project also represents a foray into feedlot research, which will build capacity to diversify our beef cattle portfolio beyond grass-fed. This change should help UPREC better research represent the whole of Michigan's beef cattle industry, and leverage the Wagyu genetics in our herd. It also is an opportunity to use infrastructure at the farm that has been underutilized since the UPREC dairy herd was dispersed in 2011.

The [Michigan Alliance for Animal Agriculture \(M-AAA\)](#) is a partnership among Michigan animal agriculture industries, the Michigan Department of Agriculture and Rural Development, the Michigan State University College of Agriculture and Natural Resources, the MSU College of Veterinary Medicine, MSU AgBioResearch and MSU Extension focused on advancement of the Michigan animal agriculture economy. M-AAA is investing more than \$2.3 million in 26 new research and outreach projects in 2022. For a complete list of 2022 projects, visit canr.msu.edu/maaa/projects.

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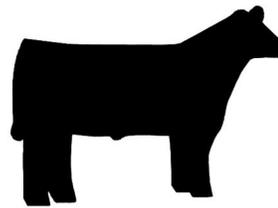
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(906)439-5114 Ext. 2.

FOR SALE: Hay, 5x6 round bales legume grass hay, stored
inside. Call Jon and Donna Ahlberg, Iron River (906)265-9333.

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Market Report

Choice Steers	\$120-\$146 per 100 lbs.
Holstein Steers	\$110-\$140 per 100 lbs.
Hogs	\$82-\$95 per 100 lbs.
Lambs	\$100-\$175 per 100 lbs.
Cull cows	\$80-\$90 per 100 lbs.
Calves	\$100-\$130 per 100 lbs.
Goats	\$200-\$300 per 100 lbs.

Breeding and Feeder Animals

Grade Holstein cows top	\$1775/head
Grade Holstein bred heifers top	\$1775/head

Feed Prices across the U.P.

	Avg. \$/cwt	Avg. \$/ton	Price Range
Corn	\$16.93	\$338.65	\$265-480
Soymeal	\$28.05	\$561.00	\$490-624
Oats	\$18.88	\$377.50	\$320-430
Barley	\$13.77	\$275.33	\$200-386
Average price/100 wt. for 1 ton lots			