

U.P. Ag Connections Newsletter Agricultural News from MSU Extension and AgBioResearch

March 2020

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AgBio**Research**

Selecting perennial and annual forage species and varieties for Michigan's Upper Peninsula

Jim Isleib, MSU Extension Educator

Farm numbers and crop acreage in the Upper Peninsula are relatively small, compared to the entire state of Michigan. Based on 2012 information from the Michigan Agricultural Statistics Service (MASS), only 3% of Michigan's farms were in the U.P. With 3% of the state's population living in the U.P., this makes sense, even though the Upper Peninsula contains 29% of Michigan's land mass. Climate and soils in most of the region are not conducive to corn, soybean and other cash crops. However, based on 2017 information from MASS, the U.P. represents 13% of Michigan's hay (not including pastures not harvested as hay), 23% of its oats, 34% of its feed barley, and about 3% of its corn silage and potatoes. Most of the hay and pasture in the U.P. is composed of grass and grass/legume mixture. Dairy farms on suitable soils utilize alfalfa. Where alfalfa is in the dairy rotation, rotations are usually shorter than on other types of farms. These farms may include beef cow-calf, sheep, horse, other livestock operations and farms selling hay.

When hay fields or pastures are reseeded, farmers should select proven and tested species and varieties. Of course, cost is an issue, but keep in mind that the cost of seed is a very small factor when averaged over the stand life of possibly many years.

The new Michigan State University Extension publication <u>E-3309 "Recommended Hay and</u> <u>Pasture Forages for Michigan"</u> by MSU Forage Specialist Dr. Kim Cassida and MSU Extension forage educator Phil Kaatz provides an excellent guide for seed selection decisions. The twelve -page publication includes descriptions of common species, several handy tables listing species characteristics, a section with tips on seed mixtures for various purposes, and a step-by-step guide for formulating a forage seeding mixture. Many farmers opt to buy a pre-formulated commercial hay or pasture seed mix. Keep in mind that you can prepare a specific mix for your farm based on your experience and good research information.

For U.P. beef producers with long rotations, longevity of forage species may be of high interest. Using the tables in the publication, selection of longer-lasting productivity can be considered. For example, cool season grasses with longer stand life include species such as Kentucky Bluegrass, Meadow Bromegrass, Timothy, Tall Fescue, Smooth Bromegrass and Reed Canary Grass. Orchardgrass, Meadow Fescue and Perennial Ryegrass are rated with less stand life expectancy. Similarly, Alfalfa and Kura Clover are rated with longest expected stand life, followed by Birdsfoot Trefoil, and then Red and Alsike Clovers. Many other characteristics are included in convenient table form, including recommended uses, seeding characteristics, yield potential and other agronomic details.

MSU Extension is offering a set of educational meetings for farmers focusing on forage seed selection and production practices. These free meeting will be held in three locations:

Rudyard Township Hall, Rudyard, March 9, 2020, 6:30 – 8:30pm Delta Co MSU Extension Office, Escanaba, March 26, 6:30-8:30pm Mass City Community Center, Mass City, April 6, 6:30-8:30pm

Please register on-line by March 7 at <u>https://events.anr.msu.edu/recipesforagesuccess/</u> or by contacting Jim Isleib at isleibj@msu.edu or the Alger County MSU Extension Office at 906-387-2530. Low registration will result in cancellation, so be sure to register.

Volume 24 Issue 3

Studying Soil Health

High Schoolers Get Involved with Agriculture through participatory Land-Based Learning Project

A SARE Project between Superior Central High School / Mr. Tim Bliss's classes and Log Cabin Livestock / Ben and Denise Bartlett's sheep operation took place in 2018/2019. It was coordinated by Abbey Palmer, MSU and advised by Jim Islieb, MSU Extension.

Students from **Superior Central School** in Eben Junction, Michigan worked with farmers Ben and Denise Bartlett to develop best practices for hay fields that are too remote from the farm to be grazed. This issue, which relates to ecosystem health and farm financial sustainability, led students to an investigation of the relationship between soil microbial activity, soil health, and crop yield – and the health of their community. This article will provide background on the project, a description of the experiment that students helped to design, and data collected on soil health and hay yields.

Students designed an experiment to examine four different treatments and set up test plots on land that had been hayed consistently for several years without being fertilized or grazed. Intern Beau Rondeau collected data over the 2018 and 2019 growing seasons. Students used class time to visit the site, learn about designing a scientific experiment in the form of agronomic test plots, and to collect soil samples. In an innovative approach to a field day, students met with area farmers at the **Alger County Farmer Potluck** in October and presented their research. Students created soil health test kits that can be borrowed by others in the farming community. The test kits can be utilized by contacting **Tim Bliss**.

This project is one of seven across the U.P. funded by a **Sustainable Agriculture Research and Education Grant** (SARE) and carried out by researchers from Michigan State University, MSU Extension, and MSU Upper Peninsula Research and Extension Center. Land-based learning projects offer students the opportunity to tackle real-world issues in agriculture in a living classroom – a local farm – and to engage with the project in their own communities through internships.

The management practices utilized in the trial were a randomized series of 15 plots, 3 replications of 5 different practices. Those practices were: control, compost, cover-crop, urea, and mulch. All the practices except for "mulching" were done per local standards with a late June/early July first harvest and an August second harvest with the "hay" crop being removed. The mulch plots were harvested earlier and more often, 4 times, and the crop was dropped on the plot to hopefully build soil health.

In May 2018, the plots and trial plan were established with 100#/acre equivalent urea and 5 ton/acre compost was broadcast on appropriate plots. The cover crop was no-tilled into existing sod and no vegetation control was removed. The cover crop mix was: 50#/acre equivalent mix of: 1# sunflower, 8# soybean, 25# oats and peas mix, 4# crimson clover, 2# brassica, 10# Japanese millet. Nothing was done to the control plot or the mulch plot before their scheduled harvest. Soil samples for soil health were taken both in the spring and fall of 2018. All hay harvested per plot was measured for yield and quality.

In May 2019, the trial was repeated with the following changes: The urea plots received 200#/acre equivalent and compost plot received 10 ton/acre equivalent. The no-till mix was changed to: 10# Japanese millet, 25# oats and peas mix, 8# soybean, 5# red clover, 2# radish and 1# sunflower. Soil health samples were collected in the fall of 2019.

Results Summaries:

The overall goal was to impact the soil health of the hay field, but it was also important to *monitor the impacts on quality and quantity of the hay produced. In both years the no-till cover crops were almost 100% un-successful with* only a few planted cover crops being identified. There is no yield data for the cover crop plots.

The following results are the yield in pounds per acre times the RFQ (Relative Feed Quality- higher score is higher quality feed) score and the average of both trial years: Combining yield and quality gives credit to practices that produced higher quality feed. Control 4782 Q units = (pounds X RFQ score)

Control	4/82 (
Compost	5352
Urea	6506
Mulch	5735

Fall 2018 vs Fall 2019 soil health tests for limited indicators:

	P 2018/19	K 2018/19	CEC 2018/19	SOM 2018/19
Control	17/19	51/51	9.7/9.8	4.9/5.3
Compost	25/37	44/56	7.2/7.8	4.0/4.9
Urea	29/28	42/35	8.2/8.2	4.1/3.6
Mulch	27/29	45/40	8.2/8.2	4.4/4.2

Cornell Soil Health results Fall 2019:

	SOM	Protein	Respiration	Р	К	Overall soil health score
Control	3.6%	11.5	94	3.3	42.5	90
Compost	3.0	11.8	90	5.9	47.5	90
Urea	2.4	9.2	49	3.0	22.9	74
Mulch	2.9	10.5	92	3.1	30.4	82

While the urea plots had the highest yield, the urea plots also had a tendency to experience a decrease in soil health indicators. The compost plots had an increased yield over the control plots with two harvests but the mulch plots with 4 harvests had lower yields per harvest but comparable total hay yield and higher quality with resulting higher Q score.

There were not large differences in the plots but two years in a soil's life is a very short time. There were definite trends to higher yield with urea fertilizer, somewhat higher yields with compost and mulch and a decrease in soil health indicators where urea was used.

Glossary:

SOM	Soil organic matter
Ρ	Phosphorus
К	Potassium
CEC	Cation exchange capacity
Protein	Organically bound N
Respiration	Soil metabolic activity

Results summaries prepared by Ben & Denise Bartlett, Jan 2020

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2017-38640-26916 through the North Central Region SARE program under project number LNC17-394. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

Advanced Grazing School

Frank Wardynski, MSU Extension Educator

Michigan State University Extension will be conducting an Advanced Grazing School April 9 and 10, 2020, in the Eastern UP at Waishkey Bay Farm in Brimley, in hopes of attracting graziers from across the state. This workshop is for graziers that have multiple years of experience, use some system of "rotational grazing", and want to further enhance the outcomes of their grazing efforts. The emphasis of this workshop will <u>not</u> be on the "right" thing to do, but on ideas and information a producer can use to further their grazing program. Therefore, it will be critical for each person to be prepared to look at their own operations and be ready to write a work plan for the next year and the next 5 years. Each person will be expected to share some of their ideas and participate in the discussion.

Renowned grazing expert, Ben Bartlett will be the featured presenter. MSU Extension Educators, Kable Thurlow and Frank Wardynski are organizing the activities and will share in teaching and leading group discussion. Also, MSU Extension Specialists Kim Cassida and Jason Rowntree will give presentations.

The goal of the workshop is to have each participant be exposed to some of the newest information on grazing and to leave with a workbook of action plans for their operation. This workshop wants to help you carve out the time, be exposed to new thinking, and most importantly, put a plan together to move your grazing program to a new level of performance. Additionally, this workshop will be the initial planning session for summer pasture walks at various locations across the state.

Participants can register at https://events.anr.msu.edu/event.cfm? eventID=0A7358F4457E179E6092D4FD922498194AE4DE6CD4926C251831027A555C810A

The cost will be \$150 for the first farm participant if signed up by March 29, and then \$75 for subsequent farm members. Registration costs increases to \$175 and \$100 for and signup is required by a deadline of April 5. For more information contact Kable Thurlow at 989-426-7741 or thurlowk@msu.edu or Frank Wardynski at 906-884-4386 or wardynsk@msu.edu.

Maple & Birch Sugaring Workshop

March 14, 2020 9:30AM - 3:30PM

Waishkey Center - Bay Mills Boys & Girls Club Building, 12099 W Lakeshore Dr., Brimley, MI 49715

Contact: Kathryn Jacques (906) 280-1786 for more information

Want to get started or scale up your maple or birch sugar bush production? Curious about value-added maple and birch sugar products? Join us for an engaging day in Bay Mills filled with hands-on activities.

Free lunch provided. Please bring warm clothes for outdoor activities. Bring your own snowshoes or borrow a pair available onsite. Open to all. Beginner and family friendly.

Hosted in partnership with Bay Mills Community College's Waishkey Bay Farm, Bay Mills Community Health Center, MSU Federally Recognized Tribes Extension Program (FRTEP), MSU Forest Biomass Innovation Center and Chippewa Luce Mackinac Conservation District.

Workshop topics covered include:

- Maple and birch sugaring overview
- Different types of equipment, price points and estimated pay off timelines
- Discussion of reduced cost start up strategies DIY, equipment sharing, etc.
- Batch process vs. Continuous
- Grading and marketing
- Hands-on with mobile sugar shack
- Sugar bush tree ID, tree physiology, conservation and forestry management
- Value-added product overview and profit margin
- Maple candy making demonstration
- Hear from experienced local producers

Hardwood or Hardship?

As a Produce Safety Technician, a large portion of my job entails making sure growers are informed of current agricultural best practices, both required and voluntary. When difficulties with implementing these practices arise, the problems are often related to money or time – and we all know that time is money. Usually, the 'why' concept of a best practice is understandable; it is the 'how' that is the tricky part, and the associated costs with changing a farm's production system to meet the parameters of a best practice.

One key example of this is the use of equipment with wooden food-contact surfaces in packing houses on fruit and vegetable farms. This is a common occurrence, considering that the majority of older post-harvest equipment were manufactured out of what was, and still is, cheap and readily available: wood. Today, we know that the porous, fibrous nature of wood cannot be easily cleaned, which is the physical removal of dirt and filth. Further, it cannot be adequately sanitized, which is the treatment of a cleaned surface to reduce or eliminate microorganisms. There are plenty of more hygienic materials on the market for packing house tables and equipment, such as plastic and metal. Wood's unfavorable sanitary situation is made even worse when it is not allowed to fully dry after cleaning and sanitizing. Allowing wooden food-contact surfaces to retain moisture, even after cleaning, creates a hospitable environment for bacteria to live and multiply. Chances are, some of those bacteria are harmful pathogens and could contaminate produce.

From my technician perspective, it is plain as day that all feasible steps would be taken to replace or refabricate packing house equipment with more hygienic materials. From my former vegetable farmer perspective, being asked to replace or upgrade existing wooden equipment is ludicrous. New equipment is expensive, and building new equipment takes time, and time is money. Luckily, there is room for compromise. A farm could vow that when picking out new equipment, whether it is new, used, or fabricated, they steer away from pieces with wooden food-contact surfaces. In the meantime, to manage the microbial risks, verify your packing house cleaning schedule has you cleaning wood surfaces frequently, and make it a point to allow wood to dry completely before using.

To learn more about assessing produce safety risks on your farm and to earn a produce safety certificate from the state of Michigan, contact Landen Tetil at (906) 251-3061 or landen.mqtcondist@gmail.com



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NAN FOR CREINC NOW	4' x 8' x 24"	\$700.00
PLAN FOR SPRING NOW! Now is the time to plan for healthy, nutritious food grown in a	4' x 12' x 12"	\$675.00
self-sustaining, and family-oriented way. Let us get you started or enhance your home-based nutrition effort by installing raised with Vermicompost powered soil in your yard.	4' x 12' x 24"	\$925.00
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3) How many pounds of food would you like to harvest?	A 501(c)3 NON-PROFIT ENTITY (FEIN: 46-3382040)	
E-mail your information to: info@partridgecreekfarm.org	THANK Y	

Post-Harvest Handling and Hygiene for Small and Medium Sized Growers

This program, designed for small and beginning farmers, focuses on a variety of topics related to post harvest sanitation. There will be hands on demonstrations, and practical information shared from On Farm Food Safety experts from Michigan and beyond. Program topics include discussions about cleaning and sanitizing food contact surfaces, hygienic facility design, safety and personnel protection, and developing standard operating procedures for challenging tasks.

March 18, 2020, 1-4 p.m. Marquette Twp Town Hall 1000 Commerce Dr, Marquette, MI 49855

Registration: https://events.anr.msu.edu/event.cfm? eventID=E0A26FCD9AD6D1AF713305F5A2DC1A491F673369C A7268A6C7DC6E0B2A56DE7B

Produce Safety Grower Training Course

Michigan State University Extension will host the Food and Drug Administration-defined Produce Safety Alliance Grower Food Safety Modernization Act (FSMA) certification course at various locations. Those interested in learning about Good Agricultural Practices (GAP's), produce safety, comanagement, and the FDA Food Safety Modernization Act Produce Safety Rule are invited to participate.

March 19, 2020, 9am-4pm Marquette County MSU Extension 184 US-41, Negaunee, MI 49866 Registration: <u>https://www.canr.msu.edu/events/2019-2020produce-safety-grower-certification-course-negaunee</u>

Classifieds

FOR SALE: Mixed hay, large round bales, 4'x4', \$25/bale. Call Al (906)647-6697.

FOR SALE: A.O. Smith Roller Mill. Good running and operating condition. Asking \$550. Call (906) 399-9966.

FOR SALE: Hay, large square bales 3x3x7.75 Timothy grass, 4,000 to sell. Former dairy farm doing all big square bales hay. Call Dave Bell in the EUP 906-440-6455 or email Bellsdairy@yahoo.com. Also a realtor in the UP so contact me for real estate here. Dave@smith-company.com

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

Beautiful property in the Upper Michigan, 130 acres In Perkins for sale or pasture for rent for livestock for the 2020 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
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hjdegroot@alphacomm.net

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Save the Date!

The Growing UP Agricultural Association will be holding their annual meeting on April 3rd, 11:00-2:30 at Bay College, Escanaba. This year's meeting will feature an open discussion on how MSU can serve UP agriculture. GUPAA would appreciate your input!

Marlette Livestock Auction Monthly Dairy & Feeder Cattle Auctions Sale Date March 14

Featuring Dairy Cattle, Cow/Calf Pairs & Bred Brood Cows, Breeder Bulls, & Feeder Steers & Heifers

Hay & Straw Auction - Every Monday @ 12:00 PM 1000+ Small Squares & 150+ Rounds/Large Squares Weekly Livestock Auction - Every Monday @ 1:00 PM Including Calves, Sheep & Goats, Feeders, Hogs, Bulls, Beef, &

> Butcher Cows 6381 Euclid St., Marlette, MI 48453 Robert Filhart, Owner (989)330-6005 Haley Filhart, Owner (989)430-2055



Market Report

	•			
Choice Steers	\$100—\$116 per 100 lbs.			
Holstein Steers	\$70—\$104 per 100 lbs.			
Hogs	\$48—\$52 per 100 lbs.			
Lambs	\$160—\$184 per 100 lbs.			
Cull cows	\$50—\$60 per 100 lbs.			
Calves	\$50—\$100 per 100 lbs.			
Goats	\$200—\$300 per 100 lbs.			
Breeding and Feeder Animals				
Grade Holstein cows \$1750—\$2000/head				
Grade Holstein bred heifers \$1800—\$2600/head				
Feed Prices across the U.P.				

	Avg. \$/cwt	Avg. \$/ton	Price Range	
Corn	\$12.09	\$241.75	\$195-342	
Soymeal	\$19.51	\$390.25	\$360-450	
Oats	\$13.49	\$269.75	\$239-340	
Barley	\$11.68	\$233.50	\$180-310	
Average price/100 wt. for 1 ton lots				





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Calendar of Events

Great Lakes Hop & Barley Conference—Ann Arbor, March 5-7 MCA/MSU Bull Evaluation Program Open House—Crystal, March 7, 10am-1pm UP Forage Meeting—Rudyard Township Hall, Rudyard, March 9, 6:30-8:30 pm UP Agriculture for Tomorrow Conference—Bay College, Escanaba, March 11, 9:15am-4:05pm* Maple Syrup Workshop—Bay Mills Culture Center, Brimley, March 14, 10:00 am Post-Harvest Handling/Hygiene Workshop—Marquette Twp Hall, Marquette, March 18, 1-4pm Produce Safety Grower Training Course—Marquette Co MSUE Office, Negaunee, March 19, 9am-4pm Food & Forages in the EUP—Pickford Township Hall, Pickford, March 19, 6-8 pm MCA/MSU Bull Sale—Crystal, March 21, 12:30pm UP Forage Meeting—Delta Co Extension Office, Escanaba, March 26, 6:30-8:30 pm Growing UP Ag Association Annual Meeting — Bay College, Escanaba, April 3, 11am-2:30pm Beekeeping Workshop—Ewen Trout Creek School, Ewen, April 4 UP Forage Meeting—Mass City Community Center, Mass City, April 6, 6:30-8:30 pm Advanced Grazing School—Bay Mills Community College, Waishkey Bay Farm, Brimley, April 9, 10am -5:30pm and April 10, 8am-1pm Bay de Noc Gardening Conference—Bay College, Escanaba, April 18, 8am-4pm Mushroom Workshop—Pickford, May 16, 10am-noon UP Swine Health Meeting—Delta Co Extension Office, Escanaba, May 18, 6-9 pm UP Swine Health Meeting—St. Ignace Public Library, St. Ignace, May 19, 6-9 pm

*Don't forget to register for the Ag for Tomorrow Conference before March 4

to get reduced registration cost of \$25.