



Updates from the Upper Peninsula Research and Extension Center

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Extension workshops are scheduled to cover everything from seed starting to post-harvest quality

Upcoming Events

- Ag For Tomorrow: Bay College in Escanaba, Tuesday, March 10th
- Siting and Planning for Hoop-houses Workshop: The North Farm, Saturday, April 11th
- Great Lakes Hop and Barley Conference: Grand Valley State University in Grand Rapids, April 10th-11th



Please follow us on Facebook to receive daily updates of Farm activity – www.facebook.com/MSU.UPREC

Coordinator Comments

Here we are, patiently awaiting spring with ice cover on the Great Lakes greater than last year at this time, which is hard to believe. Most of us at the Farm felt it had been an easier winter this year, but Mother Nature has certainly packed a powerful punch on her way out. Each morning on my way to the Farm, regardless of the weather conditions, I am reminded that farmers don't get snow days...or cold days for that matter, and for that we should all be thankful. Farmers waking up every morning and working hard all day no matter the conditions are why we have one of the most safe and consistent food systems in the world.

I'm excited to share with you in this newsletter two initiatives that I've been working on this past year. First of all, the yield and quality results from the malting barley trial are now available. Yet another wet harvest season challenged us in terms of meeting optimal quality across the board, but yields were excellent and we got to see how varieties performed in very poor weather conditions. I believe it will only be a matter of time before there is a malt house sited in the U.P., so keep looking on the horizon for opportunities to source a growing market! Finally, as much progress has been made at the North Farm in terms of facilities and establishing growing plans and markets, we are now opening the farm for formal Extension workshops starting in April and continuing throughout the growing and harvesting season. Collin Thompson, the North Farm Manager, is excited to bring to you hands-on opportunities at the farm on a host of topics ranging from siting hoop-houses to cold storage techniques, and everything in between. We've been busy across the Farm and we look forward to working with you in the 2015 growing season!

Happy Spring,

Ashley McFarland

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Malting Barley Variety Trial Results

Despite challenging weather at harvest, results from the Michigan State University malting barley trial show potential for quality malting barley

In 2014, a four-site variety trial was managed by staff from the [Michigan State University Upper Peninsula Research and Extension Center](#) (UPREC). The trial was supported through Michigan State University [Project GREEN](#) grant program, [Michigan Department of Agriculture and Rural Development](#), and the [American Malting Barley Association](#). The goal of the study was to determine which varieties were best suited to provide the yields and quality sought by craft maltsters and brewers. The four trial locations were 1) UPREC in Chatham, MI (Alger County), 2) Robere Farm in Cooks, MI (Schoolcraft County), 3) Pilarski Farm in Posen, MI (Presque Isle County), and 4) Empire Malting Co. in Empire, MI (Leelanau County). Each plot utilized a randomized complete block design, which allows for statistical analysis of results. Twenty-three varieties were tested in four replications. Trial data is summarized below, however complete data for all varieties across all locations can be found at the [UPREC Malting Barley website](#).

Yield

In a typical year, yields around 40-50 bushels/acre are realized throughout the Upper Peninsula and northern Michigan, however the cool, wet summer led to higher than average yields at most sites. Christian Kapp, crops researcher at the UPREC since 2001 and manager of the trial noted some of the highest yields he has ever witnessed in over 10 years of conducting barley variety trials. "We had tremendous yields in 2014, especially at the Cooks site," Kapp reported. Those sites that received plentiful rainfall, however, had higher than optimal moisture at harvest. The Empire site was the only location that experienced low yields, where a brief drought coupled with very light soils, heavily impacted vegetative growth and grain fill.



Grain Quality

A composite sample of the four replications of each variety was sent to the grain analysis lab at [North Dakota State University](#) for assessment. Selected parameters that are of high interest to the malting industry are:

Protein – seeking less than 12.5%, which will yield more malt extract

DON – indicator of Fusarium head blight (FHB) and deoxynivalenol contamination, needs to be less than 1 ppm

Germination – seeking at least 95% to ensure barley can be germinated and processed into malt

RVA – indicator of pre-harvest sprout, which will equate to poorly germinating grain that will not store well for long periods, optimum levels are greater than 120, values down to 50 exhibit intermediate pre-germination, but can be malted if stored and handled properly

Other parameters tested involve kernel size, including plumpness.

Weather at harvest severely impacted grain quality in terms of germination and incidence of pre-harvest sprout. Since most of the plots received substantial rainfall at harvest, grain began to sprout or lose its germina-

Site	Average Moisture (%)	Average Test Wt. (lbs. /bu.)	Average Yield (bu./acre)
UPREC	16.1	49.4	86.8
Cooks	15.2	49.3	107.3
Posen	15.2	51.5	81.1
Empire	14.3	48.3	23.5

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The North Farm

www.msunorthfarm.org



Find us on Facebook to receive updates from the North Farm –
www.facebook.com/northfarmatuprec

Mark your calendars, Extension workshops coming to the North Farm

Collin Thompson and the North Farm staff will be hosting a series of Extension workshops at the farm starting this spring and running through the harvest season. All workshops are held on-site at the North Farm and will include a combination of classroom and hands-on activities. The charge is \$10/person or \$15/farm if multiple people are attending. Discounts are also available if registering for the entire workshop series. Seats are limited so be sure to sign-up early! If you have any questions about the offerings, feel free to contact Collin Thompson at 906-439-5059 or thom1264@anr.msu.edu.

Registration can be accessed at:
www.events.anr.msu.edu/NorthFarmWorkshops15/

Each workshop will start at 2 pm EST

Siting and Planning for Hoophouses — April 11, 2 hours

Site preparation is arguably the most crucial point in hoop-house construction. Join The North Farm for a discussion regarding proper site preparation and considerations for hoop-houses and learn about drainage, solar exposure, anchoring mechanisms, and snow load considerations. This workshop will be incredibly valuable for individuals in the planning stages of their hoophouse construction.

Transplant Production – May 2, 2 hours

Healthy seedlings lead to healthy crops. Come learn some techniques and tricks for growing healthy transplants. We will discuss lighting considerations, temperature requirements, watering techniques, and hoophouse transplant production. We will also demonstrate different styles of transplant production, including open flats, plug trays, and soil blocks.

Low-Cost Season Extension Technologies and Techniques — May 16, 2.5 hours

Extending the season does not have to be cost prohibitive. Come learn about low-cost ways of gaining weeks in the spring and fall. We will discuss low tunnel and high tunnel technologies, row covers, and crop selection to make sure you can keep producing into the back side of the calendar.

Scheduling and Production Planning – June 6, 3 hours

One of the most exciting and challenging parts of farming is production planning. This workshop will focus on planning your crop schedule to provide consistent supply to meet your market or family's demands. We will discuss variety selection, succession planting, crop rotations, and cover cropping.

Tools for the Small Farm — July 18, 2.5 hours

Join The North Farm staff for a discussion on the tools that we use on our small farm. These purpose-built tools serve to lessen labor inputs, decrease worker fatigue, and maximize yields. We will also discuss suppliers from which you can source tools and supplies. You will have the opportunity to try out several of our tools.

Post-harvest Handling — August 8, 3 hours

One of the most crucial parts of vegetable production is post-harvest handling. With proper care after harvest, your crop will not only look amazing, but it will last longer on the shelf and will be safe to eat. Come learn about techniques, tools, and systems that will help you maximize the salable portion of your harvested crop while maintaining a level of efficiency and safety.

Cold Storage – September 26, 2 hours

Cold storage is essential for extended shelf life in vegetable crops. Come learn about different options for cold storage and the benefits of each. We will discuss root cellaring, refrigeration, and cold chain considerations during transport.

Soil Health and Cover Crop Rotations – October 17, 2 hours

Soil health is the backbone of any farm and integrating cover cropping systems aids in the development of healthy soil systems. Join The North Farm staff for a discussion regarding planning cover crop schedules, analyzing soil health, and management strategies for organic systems.



Malting barley continued...

Site	Average Protein (%)	Average DON (ppm)	Average Germination Energy (GE %)	# Varieties with GE ≥ 95%	# Varieties with RVA ≥ 120	# Varieties with RVA ≥ 50 & < 120	# Varieties with RVA < 50
UPREC	12.5	0.0	78	2	1	8	14
Cooks	13.6	0.0	84	5	0	4	19
Posen	11.4	0.0	93	15	4	9	10
Empire	15.3	0.0	97.5	22	4	6	13

tive energy. Challenging years like 2014 can lead to unplanned opportunities. During this test, we were able to determine what varieties may possibly show some resistance to pre-harvest sprout even in these worst-case scenarios. It was very promising to see DON levels were at 0 ppm at all sites, indicating the success of appropriate applications of fungicide to control FHB – especially in a weather year that would have been highly conducive to infestation. Finally, protein levels were on or very close to target at all sites except for Empire. This can be attributed to the

drought conditions experienced through the growing season. Samples are also sent to the USDA-ARS Cereals lab in Madison, WI, where they are micro-malted and analyzed for malting characteristics.

Future plans

Staff at UPREC in cooperation with [Michigan State University Extension](#) and [Michigan State University AgBioResearch](#) plan to host two trials in 2015 to continue to build on the data collected on these varieties.

Please join us for the Great Lakes Hop and Barley Conference held at Grand Valley State University in Grand Rapids, Michigan April 10th-11th. Conference tracks will focus on beginning and advanced hop management along with malting barley production and malthouse opportunities. This inaugural event will feature speakers from across the county focusing on delivering high quality ingredients to the Michigan craft beer industry.

Register here: <http://events.anr.msu.edu/hopandbarley15>



MSU Upper Peninsula Research and Extension Center

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