



# Updates from the Upper Peninsula Research and Extension Center

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## Coordinator Comments

We ushered in Fall at the Farm with our North Farm Open House. Thanks to the 100+ attendees that made for a great day of fellowship and sharing everything that we have had going on this season. Please keep reading for the launch of the new North Farm website and open application period for the Apprentice Farmer program. We're looking forward to an exciting 2015 season.

Also included in this month's newsletter is data from our variety trial research program that was funded in part by Project GREEN and the Michigan Department of Agriculture and Rural Development. In order to report data from all the trials, including barley, spring wheat, winter wheat, peas, forages, and cover crops, meetings will be held throughout the U.P. this winter. See below for dates closest to you. Hope to see you at one of our meetings!

Happy Holidays,

*Ashley McFarland*

906-439-5176

ashleymc@anr.msu.edu

## Save the Date—U.P. Wide Variety Trial Meetings

**Presenting results on malting barley, oats, spring and winter wheat, field peas, forages and more!**

Mass City Community Center	December 1st	7—8:30 pm
Iron Co. Extension Office, Crystal Falls	December 2nd	7—8:30 pm CST
Menominee Co. Extension Office, Stephenson	December 9th	11 am—1 pm CST
Sidetracks Restaurant, Cooks	December 10th	11 am—1 pm
Snack Bar, Eben Junction	December 11th	11 am—1 pm
Garfield Township Hall, Engadine	January 6th	7—8:30 pm
Delta Co. Extension Office, Escanaba	January 7th	7—8:30 pm
Bruce Township Hall, Dafter	January 28th	7—8:30 pm

Contact Ashley @  
906-439-5176 or  
ashleymc@msu.edu  
if you plan  
to attend!

Hosted by Field Crops Educator Jim Isleib, Crops Researcher Christian Kapp, & Center Coordinator Ashley McFarland

# Living soils are healthy soils

[Soil health](#) is an increasingly popular topic in modern agriculture. Although it has long been agreed that organic matter is a critical component to the soil health equation, the role of carbon has been less understood. Respiration of carbon; released as CO<sub>2</sub> in the soil from plants, bacteria, fungi, and animals, is absorbed in soil through the humification (building humus) process. Declining humus and lowered rates of CO<sub>2</sub> strongly relate to the lack of food for soil microbes. This condition is often found in degraded agricultural systems where management practices do not support soil life. Improved management, potentially through the use of reduced tillage and [cover cropping](#) will support this key ecosystem process that is being well-accepted as an indicator of healthy soil.

The [Solvita](#)<sup>®</sup> test is a fairly new, cost-effective method to examine soil respiration in the field. A field-moist sample is placed in a sampling jar along with a Solvita<sup>®</sup> probe that includes a color-changing gel. The lid is placed back on the jar and screwed tight to minimize any respiration leakage. After 24 hours the color on the probe is matched with the Solvita<sup>®</sup> color chart, and the rate of respiration is determined. A digital color reader is also available and will provide the most accurate reading of the probes. The number from the probe (0-5) can be entered into the [online calculator](#) to determine the amount of CO<sub>2</sub>-C respired (ppm) and the amount of carbon sequestered (lbs/acre<sup>2</sup>) over the 24 hour period. The calculator will also provide you an explanation of whether or not your level is indicating a healthy, living soil.

## *Putting Solvita<sup>®</sup> to practice*

In the summer of 2014, the [Michigan State University Upper Peninsula Research and Extension Center](#) evaluated cover crops in a replicated trial that included 8 different cover crop species (Annual Rye, Buckwheat,



Chickling vetch, Cowpeas, Ethiopian cabbage, Egyptian wheat, Collards and Sunn hemp), along with a diverse blend of those 8 species. The objectives were to evaluate species suitability for the U.P. and potential species differences in soil respiration. The 9 treatments were laid out in a randomized complete block design with four replications. In order to simulate a low-input farming system, no herbicide or fertilizer was applied to the plots. On September 24<sup>th</sup>, soil respiration was measured on each

plot. Visual assessments were taken on relative level of vegetation and ability to suppress weeds. On September 25<sup>th</sup>, 24 hours after the samples were collected, the respiration rates were determined.

In summary, The Solvita<sup>®</sup> test was an efficient way to analyze soil respiration in the cover crop trial and was able to show significant differences between some of the treatments. Annual Rye on average had the highest CO<sub>2</sub>-C respiration reading, and was statistically significantly higher than Egyptian wheat, the diverse mix, Ethiopian cabbage, Collards, Cowpeas and Buckwheat. Success and results from this study, however, should be interpreted based on your goals for cover crop use. For example, Buckwheat, which produced a healthy stand and did the best at weed suppression, actually had the lowest average CO<sub>2</sub>-C respiration recorded. This may be due to the fact that the canopy from the plant shielded out any understory growth. This would explain why the higher yielding, weedy stands of other cover crop species (cover crop + weeds), actually had higher respiration rates, for example Sunn Hemp.

If you would like to learn more about soil respiration or the cover crop trial, feel free to contact Ashley McFarland at [ashleymc@anr.msu.edu](mailto:ashleymc@anr.msu.edu) or 906-439-5176. McFarland is the coordinator at the [MSU Upper Peninsula Research and Extension Center](#) and is an Extension Educator with [MSU Extension](#).

# The North Farm

## Calling all Farmers!

*The Apprentice Farmer program is now accepting applications for their Farm Incubator*

Have you ever wanted to start farming independently, but don't feel like you're quite ready to start out on your own? Then the North Farm's Apprentice Farmer program may be for you!

The Apprentice Farmer Program is a farm incubator program that aims to serve as the launching point for individuals interested in starting their own farming enterprise. This two-year, residential program provides farming entrepreneurs with the necessary tools and assistance needed to ensure a solid start to their farming career.

Land, equipment, tools, and mentorship are provided to qualified applicants so they can develop a business plan, establish accounts, build capital, and fine-tune skills. The apprentice farmers will grow alongside the talented North Farm staff and other apprentice farmers, sharing ideas, techniques, and labor.

Housing is provided for a small fee to all participants that desire to live on-site. It is strongly encouraged that participants take this opportunity to fully immerse in farm life!

More information about the program, including application, program fees, and the program handbook can be found at the [North Farm Website](#).



## New Website

The best way to connect to the farm, including a list of educational programs, where to find our food, and how to connect to our farmers, is through our website! You can now find us at:

[www.msunorthfarm.org](http://www.msunorthfarm.org)

***Come check us out!***



Find us on Facebook to receive updates from the North Farm –

[www.facebook.com/northfarmatuprec](http://www.facebook.com/northfarmatuprec)



Would you like to attend the Northern Michigan Small Farm Conference in Acme, MI on January 24, 2015?

If so, tell us in 200 words or less, how a travel scholarship would help your operation grow!

Responses can be emailed to Ashley @ [ashleymc@msu.edu](mailto:ashleymc@msu.edu), and must be received by December 1st.

## COMING SOON!

Extension Programs hosted at the North Farm focusing on local food production.

Topics will include:

Soil health

Season extension

Organic vegetable production

Post-harvest handling and food safety

Stay tuned for a complete listing of workshops starting in March 2015!



## Variety trial results are rolling in!

### Malting Barley

The 2014 growing season proved to be a challenging one, but the timely rainfall and cooler temps supported ample growth in our small grain variety trials. This year we hosted spring malting barley variety trials at the Center and in Cooks, Posen, and Empire, MI. Although we're still waiting to hear back on the quality analysis, the yields were promising. You can check out the other sites at our website:

<http://agbioresearch.msu.edu/centers/uprc>.

The Chatham plot shown below was planted on May 10, 2014 following soybeans at a rate of 96 bu./acre. It received 50 lbs. of N at planting (46-0-0). One application of Huskie herbicide was used to control weeds at 11 oz./acre and fungicide (Prosaro) was applied at a rate of 8.2 oz./acre at heading to control disease. The crop was harvested on September 3, 2014 in knowingly wetter conditions than would have been preferred.

Variety	Source	% H2O	Test wt.	BU/ac.	Type
2B05-0811	Experimental	15.8	47.9	92.1	2 row
2B09-3425	Experimental	15.6	48.2	89.5	2 row
2ND25276	Experimental	15.7	47.9	81.4	2 row
ABI Voyager*	Busch Ag. Resources, Inc.	16.5	47.6	83.9	2 row
AC Metcalfe*	Canada	15.7	49.5	79.4	2 row
Celebration*	Busch Ag. Resources, Inc.	15.4	50.1	86.6	6 row
Conlon*	North Dakota State University	15.8	51.1	76.2	2 row
Conrad*	Busch Ag. Resources, Inc.	15.9	50.0	87.1	2 row
Innovation*	Busch Ag. Resources, Inc.	15.8	50.9	88.9	6 row
Lacey*	University of Minnesota	15.9	51.9	87.1	6 row
LCS Genie	Limagrain	17.2	49.7	83.3	2 row
Legacy*	Busch Ag. Resources, Inc.	16.0	47.5	93.8	6 row
Merit*	Busch Ag. Resources, Inc.	17.0	48.5	73.8	2 row
Merit 57*	Busch Ag. Resources, Inc.	16.5	48.9	89.2	2 row
NSA 1820	Limagrain	16.5	51.1	91.0	2 row
Odyssey	Limagrain UK	17.2	48.5	99.7	2 row
Overture	Limagrain UK	17.0	49.0	85.3	2 row
Pinnacle*	North Dakota State University	16.8	48.5	91.2	2 row
Quest*	University of Minnesota	15.5	50.7	93.3	6 row
Rasmusson	University of Minnesota	16.0	50.7	96.1	6 row
Robust*	University of Minnesota	16.0	50.6	74.7	6 row
Stellar ND*	North Dakota State University	15.5	48.1	82.6	6 row
Tradition*	Busch Ag. Resources, Inc.	15.4	50.4	89.2	6 row

\* American Malting Barley Association (AMBA) classified variety



### MSU Upper Peninsula Research and Extension Center

Main office located at E3774 University Drive, Chatham, MI 49816 – just off Highway 94 south of Chatham

North Farm located on the Rock River Road north of Chatham since 1899, Farm Incubator est. 2014

906-439-5114 – <http://agbioresearch.msu.edu/centers/uprc>