



U.P. Ag Connections Newsletter

October 2017

Agricultural News from MSU Extension and AgBioResearch

Volume 21 Issue 10

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Follow the farm on Facebook:
www.facebook.com/MSU.UPREC/

Check out the new Facebook page: MSU Extension Upper Peninsula Agriculture@MSUEAg

Interested in a farm visit from your local MSU Extension Educator?

Has a local MSU Extension educator been on your farm in 2017? If the answer is “no”, then why not? It may be that you’re not interested in having a visit from your educator. Or you may be interested, but your educator doesn’t know it. Back in the time I started my career with ‘Cooperative Extension Service’, county agriculture agents routinely dropped in on farmers within their county borders. This is how we built relationships, learned about farm problems, and kept in touch with the farming community. The internet existed, but only for technology enthusiasts with phone cradle modems, DOS operating systems, and 40 meg hard drives. The general public wasn’t using it. Social media did not exist.

Needless to say, times have changes. Now, farmers have fantastic amounts of information at their fingertips through a computer or smart phone with internet service. Of course, not all of that information is useful, and some of it is downright misleading and harmful. But most farmers are smart people with a good amount of skepticism for farming flimflam. Sticking to solid, research-based information from reliable sources is the best approach. At the same time, the number of local extension people (used to be “agents”, now “educators”) has dropped 50 or 60%. Today, we have three U.P. county-based ag extension educators based in U.P. county offices. We also have a consumer horticulture (home gardening) educator and two and one half community food systems educators (focused primarily on local food and marketing) in the U.P. Also, extension educators are all assigned multiple counties and state-wide responsibilities. County lines are much less meaningful then before.

I checked with my two U.P. MSU Extension ag educator colleagues, and yes, we all value farm visits. If you answered “no” to the question above, it may be that you did not contact your local extension educator and schedule a time for them to visit the farm. With our small staff, increased responsibilities and limited time, that’s what needs to happen. You could also let your educator know that you’d welcome a farm visit when you see them at a field day, winter meeting, or other event. Extension people still need to get out on farms to understand what’s happening in the industry we serve. You can help us out with an invitation. If you don’t know us, look for the right person at [MSU Extension Find an Expert](#) or call your local county MSU Extension office. They can give you the right name and number.

Jim Isleib

Crop Production Educator, Mackinac, Chippewa, Luce, Alger, Marquette, Baraga, Houghton, Keweenaw, Ontonagon, Gogebic Counties. 906-387-2530, isleibj@anr.msu.edu

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Three-year demonstration completed on hay fertility in Chippewa County

On-farm demonstration looks at three-year impact of various hay fertilization programs

By Jim Isleib, MSU Extension Educator

This demonstration was initiated in 2015 with local farmer input to compare the results of moderate annual lime application (1 ton/acre, surface applied) and various annual fertilizer rates including 1) no fertilizer, 2) fertilizer at 'nutrient removal' rate and 3) fertilizer at 'build-up' rate. Michigan State University Extension educator Jim Isleib conducted the demonstration in cooperation with host Rudyard, MI farmers Bruce and Wayne Berkompas.

Six strips were established, treated with lime and fertilizer, and yield checked in 2015 on a typical timothy/birdsfoot trefoil hay field on clay soil under a single cut harvest system. The next year (2016), these strips were each divided into two treatment sections. One section of each strip did not receive any additional lime or fertilizer in 2016 and 2017. The other section of each strip was soil tested in 2016 and given a lime and fertilizer treatment as in 2015, with the exception that the 'build-up' fertilizer rate was calculated based on the new, 2016 MSU soil test report for each strip. The yield goal was set at 2

tons per acre, as it was in 2015. The 2016 fertilizer and lime treatments were intended to duplicate the approach used in 2015 on a part of each area and leave part of each area treated in 2015 as an untreated area in 2016 to observe any 'carry-over' effect from the 2015 fertilizer and lime treatments. All treated strips were soil tested again in spring 2017, but no further applications of lime or fertilizer were made. Yield checks were made on all treatments in 2017 to observe carry-over effect, if any, of the single and two-year fertilizer and lime treatments made in 2015 and 2016. A light application of semi-solid manure was made on the trial area in spring 2017.

Using a ballpark figure for fertilizer cost of \$540 per ton, a simple economic estimate can be made to compare yield increase over three years based on fertilizer application in 2015 only, and in 2015 + 2016. Fertilizer spreading cost of \$7.50/a is included. Fertilizer and application cost is divided by the increase in total 3-year yield to generate the 'breakeven' value of the additional hay needed to justify the cost of fertilization. If the actual value of the extra hay is greater than breakeven, then the fertilizer may be justified. Because the treatments were not replicated, the yield and economic estimates should be considered as 'demonstration only', not as research results.

	2015 Yield (Tons DM/a)	2016 Yield (Tons DM/a)	2017 Yield (Tons DM/a)	Total 3-year yield	Breakeven hay value to justify fertilizer cost (\$/ton DM)
No fertilizer	1.6	1.5	2.5	5.6	
Crop removal fertilizer rate: 2015: 272 lbs 17-9-28 per acre	2.8	1.6	2.9	7.3	\$47.61
Build-up fertilizer rate: 2015: 460 lbs 10-22-24 per acre	3.1	1.8	3.0	7.9	\$35.19

Table 1. Yield data based on 2015-only fertilizer application over 2015-2017 period

	2015 Yield (Tons DM/a)	2016 Yield (Tons DM/a)	2017 Yield (Tons DM/a)	Total 3-year yield	Breakeven hay value to justify fertilizer (\$/ton/DM)
No fertilizer	1.6	1.4	2.8	5.8	
Crop removal fertilizer rate: 2015: 272 lbs 17-9-28 per acre 2016: 186 lbs 0-14-42 per acre 458 total lbs fertilizer	2.8	1.8	3.2	7.8	\$69.33
Build-up fertilizer rate: 2015: 460 lbs 10-22-24 per acre 2016: 261 lbs 0-21-32 per acre 721 total lbs fertilizer	3.1	2.1	2.8	8.0	\$95.30

Table 2. Yield data based on 2015 and 2016 fertilizer application

Summary, continued from page 2 (Hay fertility study)

- Annual yield checks did not suggest any difference between lime application treatments.
- Yields based on 2015-only application of fertilizer suggests carry-over impact on yield into 2016 and 2017.
- Single year application at the 'build-up' rate suggests the most favorable impact on economic hay production at this location over the 3-year period. Single year application at the 'crop removal' rate appears to be the next most favorable.
- Repeat annual applications of 'crop removal' and 'build-up' rates in 2015 and 2016 suggest improved hay yields compared to 2015-only fertilization, but at a higher cost per ton of DM than a single application over the same period.

This demonstration suggests that fertilizing at crop removal or build-up rate every third year may provide a more economic approach to increasing hay yields than annual or two-out-of-three year application in this type of system and environment.



Earthworms & Maple Decline

Released By Bill Cook, MSUE Forester/Biologist

Here is a summary of a new study from Michigan Tech, confirming what many have long suspected.

Earthworms at the root of sugar maple decline

<https://www.sciencedaily.com/releases/2017/09/170901125102.htm>

Here is a link to the study

Non-native worms are eating up the forest floor, causing sugar maples to die back and perhaps harming other forest dwellers, a new study suggests.

[Evidence of damage from exotic invasive earthworm activity was highly correlated to sugar maple dieback in the Upper Great Lakes region](https://www.sciencedaily.com/releases/2017/09/170901125102.htm)

NORTHERN MICHIGAN LIVESTOCK 2017 FALL FEEDER SALES

All sales on Friday at 12:00

Oct. 6 Oct. 20 Nov. 3 Dec. 8

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Smart Gardening

2017

SMART GARDENING VEGETABLE CONFERENCE



Saturday, Oct. 14th

8:30—9:00 Registration

9:00 –4:00 Conference

Quality Inn

1021 N. State St.

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Should I burn off my old, unharvested hay or chop it back onto the field?

Some Michigan hay farmers need to decide how to clean up fields that went unharvested this year due to excessive rain.

By Jim Isleib, MSU Extension Educator

It was a tough year to make quality hay. On some Michigan farms, it was an impossible year and the hay never got made, even though plant growth was excellent. Saturated clay soils through much of the summer prevented hay harvest altogether in some areas of the eastern Upper Peninsula. The result....relatively thick stands of over-mature timothy/trefoil hay. No profitable local market exists for this very low quality hay. Some fields were mowed and windrowed, then after repeated rain events ruined the hay, windrows were burned. The damp windrows failed to burn very well. If left unmanaged, unharvested, standing forage can result in a dense mat on the soil surface over the winter and interfere with spring growth and hay harvest next year.

The question is 'What to do with it?'. There are two practical options to consider. 1) Burn off the fields or 2) chop the standing hay and return it to the field surface.

Chopping and returning the hay to the field has advantages. Whatever 'fertilizer' value is in the hay material (N, P₂O₅, K₂O, S, etc) is recycled back into the soil. The disadvantages to chopping are the machinery cost, time invested, potential compaction on wet soils and the possibility of the chopper depositing the material in a heavy swath which may smother some of the plants underneath. In the short term this may decrease yields, but in the long term seeds in the swath will create new plants. The negatives associated with burning include loss of nutrients, drifting smoke, and personal safety hazard. [Manitoba Agriculture](#) estimates the nutrients losses from burning small grain stubble at 90%. Estimates of nutrients lost through straw burning from Mosaic Crop Nutrition are more conservative, including 98-100% loss of nitrogen, 70-90% loss of sulfur, but only 20-40% loss of phosphorus and potassium.

Using feed analysis reports from a Chippewa county timothy/trefoil field harvested in early August, 2015 (crude protein: 7.37%, P: 0.13%, K: 0.93%), fertilizer value per ton of hay can be estimated. N, P and K values are based on [2017 fertilizer price estimates](#):



Total nutrients (lbs) in old hay		Estimated value (\$/lb)
Nitrogen	20 lb/ton	\$0.33/lb
P ₂ O ₅	5 lbs/ton	\$0.34/lb
K ₂ O	19 lbs/ton	\$0.27/lb

Value of plant nutrients (\$) in old hay	
Nitrogen	\$1.65 (25% of total calculated N/ton)
P ₂ O ₅	\$1.73
K ₂ O	\$5.12
Total	\$8.50 fertilizer value/ton of hay (at least 85% dry matter) returned to field

If the hay is burned and the losses are calculated using the estimate from Mosaic Crop Nutrition:

\$4.77 fertilizer value per ton of hay burned on the field

MSU Extension estimates the cost of chopping hay at \$7.50 - \$12.00 per acre, so we will use \$9.50.

The following is a rough estimate of the cost/benefit of chopping vs burning:

Chopping 2 tons/a hay

\$17.00/acre estimated fertilizer value of 2T/acre hay

\$9.50/acre chopping

+\$7.50/acre

Burning 2 tons/a hay (using optimistic ash nutrient values from Mosaic):

\$9.54/acre estimated fertilizer value of ash from 2T/acre hay
-\$1.00/acre burning cost

+\$8.54/acre

Based on this estimate of nutrient return value, there is not a compelling reason to choose one method over the other. However, chopping avoids the potential problems associated with burning.

A third option is to graze the fields. Trampling is more effective than chopping at returning organic matter to the soil because it doesn't create swaths and the manure is more available to plants. Obviously this requires access to livestock and a fenced field.

Winter Extension Meetings—SAVE THE DATE!

MSUE U.P. Crop Research Updates

Dec 11, 1:30 – 3pm – Chatham (UPREC)
 Dec 13, 1:30 – 3pm ET – Mass City
 Dec 13, 6:30 – 8pm CT – Felch Twp Hall
 Jan 4, 1:30-3pm – Escanaba MSUE Office
 Jan 11, 1:30 – 3 CT – Stephenson
 Jan 17, 2 – 3:30pm – Rudyard
 Jan 17, 6:30 – 8pm – Engadine

Pesticide applicator core manual training

9 am – 1 pm followed by state exams
 Dec 1 – Chatham (UPREC)
 Jan 10 – Negaunee (Marquette MSUE office)
 Feb 6 – Escanaba (State Office Building)

Pork team meeting

Dec 18, 6 – 9pm – Escanaba
 Dec 19, 12 – 3pm – St. Ignace

Monica's Coffee Talks

Nov 6 – 9 am, Big Boy, Manistique
 Nov 7 – 7 am, CT, Farm House, Stephenson
 Nov 7 – 9 am, CT, Redwood Junction Restaurant, Powers
 Nov 8 – 9 am, Jack's, Rapid River
 Nov 9 – 9 am, B's Country Café & Catering, Iron Mountain
 Nov 10 – 9 am, Snack Bar, Chatham

Community Harvest Fest

Presented by Alger County 4-H

October 14th, 10 am—2 pm
 MSU Upper Peninsula Research and Extension Center
 South Farm, Chatham, Michigan



A celebration of community, 4-H, friends and fun!
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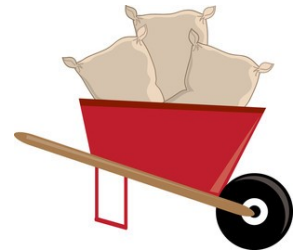
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Market Report

Choice Steers	\$100—\$116 per 100 lbs.
Holstein Steers	\$70—\$100 per 100 lbs.
Hogs	\$56—\$66 per 100 lbs.
Lambs	\$150—\$170 per 100 lbs.
Cull cows	\$55—\$70 per 100 lbs.
Calves	\$80—\$125 per 100 lbs.
Goats	\$200—\$300 per 100 lbs.

Breeding and Feeder Animals

Grade Holstein cows \$1400—\$1800/head
 Grade Holstein bred heifers \$1600—\$2200/head

Feed Prices across the U.P.

	Avg. \$/cwt	Avg. \$/ton	Price Range
Corn	\$10.16	\$203.25	\$160-244
Soymeal	\$21.45	\$429.00	\$375-536
Oats	\$10.10	\$202.05	\$190-230
Barley	\$10.09	\$201.75	\$140-262
Average price/100 wt. for 1 ton lots			

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Calendar of Events

Eating Through the Eastern U.P. Series

On Saturdays from 10 am - 12
Seasonal topic and food at each location
October 21-Sault
November 18-Brimley

Ag for Tomorrow Conference

March 13 – Bay College, Escanaba

MSUE U.P. Crop Research Updates

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Catering, Iron Mountain
Nov 10 – 9 am, Snack Bar, Chatham

**Hosted by the
Alger County 4-H
Saturday, October 14th
Everyone welcome to
attend!**

