



U.P. Ag Connections Newsletter

July 2016

Agricultural News from MSU Extension and AgBioResearch

Volume 20 Issue 7

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Please join us—Together at the Farm!

This month, the farm is hosting a unique opportunity to bring together diverse audiences around the topic of local food. Whether you grow greens for the local farmer's market, potatoes for Wal-Mart, educate youth on healthy eating habits, or just like fresh, healthy food—this event is for you!

Together at the Farm, a U.P. Local Food Conference, is planned for Saturday, July 30th at the Upper Peninsula Research and Extension Center and is being organized by the [U.P. Food Exchange](#) and co-hosted by the Marquette Food Co-op, MSU Extension, Western UP Health Department and MAEAP. This event is going to break the mold of similar conferences, in that workshops throughout the day will be focused on hands-on experiences. Expect to spend time outdoors, learn, engage, and possibly get your hands a little dirty! The planning committee has worked very hard to provide opportunities for all interests.

A special feature of the Together at the Farm, is the highlighted keynote speaker, Eliot Coleman, who has been involved in farming since 1966. He has 50 years of experience in field vegetables, greenhouse vegetables, rotational grazing of livestock, and range poultry. He is the author of *The New Organic Grower*, *Four Season Harvest*, and *The Winter Harvest Handbook*. He is also co-author of *The Four Season Farm Gardener's Cookbook*. With his wife Barbara Damrosch he owns and operates Four Season Farm. We are very fortunate to have him in the Upper Peninsula!

After the conference, consider joining us for a local food inspired dinner followed by live music and an old-fashioned barn dance to celebrate a day of learning! Attendees will get another opportunity to hear Eliot Coleman speak, and the evening will be an excellent networking opportunity for farmers and consumers. Although the dinner is a separate, ticketed event with limited seating, the barn dance is free and open to the public.

Registration for Together at the Farm is live and can be found here: www.events.anr.msu.edu/TATF. Sessions have limited space to allow for interactive learning with presenters, so register early to secure your seat! There is still opportunity to sponsor and/or table at the event to gain exposure to over 300 local food enthusiasts from throughout the region. Details on sponsorship can be found here: www.upfoodexchange.com/events/together-at-the-farm/.

I look forward to seeing you...Together at the Farm!

Ashley McFarland

Coordinator, MSU Upper Peninsula Research and Extension Center

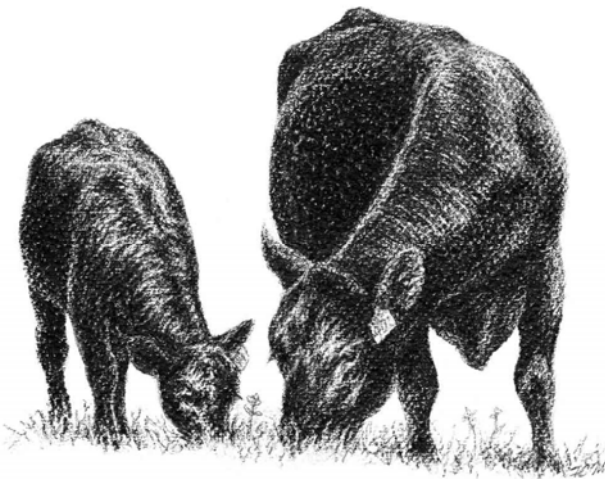
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Pasture walk planned near Rudyard on July 20th

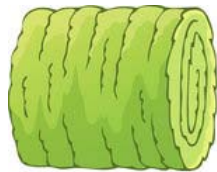
A pasture walk on the Mike Kowalski beef farm in Rudyard is planned for Wednesday, July 20 at 1pm. A well-planned rotational grazing system will be featured, as well as the results of deep tillage prior to pasture renovation. A visit to observe the 2nd year continuation of the hay fertility demonstration on the Berkompas farm in Rudyard will be included following the pasture walk. This demonstration compares no fertilizer application with low and higher rates. It also includes light surface lime application with no lime. There is no charge for this educational program. Please register by contacting MSU Extension Educator Jim Isleib at 906-387-2530 or isleibj@anr.msu.edu by July 18.



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MSU Grazing School Offered

Mark your calendar for the MSU Grazing School on September 22-23. The Upper Peninsula satellite location is at Brimley, MI. The Bay Mills Community College Waishkey Bay Farm teaching facility will host the program. *Registration is \$125 for one participant; \$220 for two participants from the same farm. The workshop fee includes notebooks, resource materials, and all meals. MSU specialists and extension educators will provide a combination of classroom and in-field presentations. Real-time connections via 2-way internet technology will be used for some of the presentations. Look for more information in future Ag Connections newsletters.*

Selecting a liming material, Part 1

Jim Isleib, Extension Educator

Where practical options are available, farmers should make their choice of liming material based on solid, research-based information.

For many Michigan farmers in areas with lower soil pH, different options for liming materials exist. These choices may include 'ag lime' (crushed calcitic limestone), dolomitic lime (high in magnesium), slaked lime ('quicklime' or 'burnt lime'), marl, sugar beet lime, industrial woodash, and other industrial by-products with lime equivalent.

Unless a low-cost, local source of good quality ag lime or suitable industrial by-product is available, a decision must be made about the most desirable type and form of lime to purchase and use. Michigan State University Extension bulleting E-471 ["Lime for Michigan Soils"](#) is an excellent source of information.

If pH and soil magnesium levels are low, then dolomitic lime is a good option to address both issues. Even where soil magnesium is adequate or high, dolomitic lime should still be considered if it is the most economical alternative.

The most important factors affecting the quality of agricultural liming materials manufactured from crushed limestone are fineness of grind and the purity of the limestone used. Lime particles coarser than 8-mesh screen (approximately 1/8 inch) have no practical liming effectiveness. Particles passing through a 60-mesh screen have 100% effectiveness. Those in between are considered 50% effective. "Neutralizing value" is a chemical measurement of the lime materials ability to neutralize acid. Lime recommendations are usually given assuming a neutralizing value of 90 (90% equivalent of pure calcium carbonate). Calculations using the fineness factor and the neutralizing value are used to generate an "effective calcium carbonate" (ECC) number for commercial liming materials. A high ECC results in a lower recommendation of lime than may appear on a soil test report, while low ECC will result in the need for more lime than the soil test report recommends. Generally, after liming materials are applied the soil pH will typically increase during the first 1-2 years and then plateau.

Liquid lime, or 'lime suspension' is a liming option where available commercially. It has advantages and disadvantages. However, be aware that there is nothing special about the liming effectiveness of lime suspensions. Their advantages include fast soil reaction, no dust, ability to combine with liquid fertilizers (except for phosphorus), ease of uniform application. Disadvantages include the potential need for annual application, potential for higher cost than conventional liming, difficulty in getting large pH changes with relatively light applications of lime. Liquid lime contains very finely ground limestone, a small amount of clay and dispersing agent.

Pelletized lime also consists of very finely ground limestone particles held together by a soluble binding agent. The resulting product is easier to spread and less dusty than regular ground limestone. Pelletized lime has been widely adopted in the lawn and garden sector, but its relatively high cost has limited widespread use in agriculture. Again, there is nothing special about the effectiveness of pelletized lime. Its advantages are found in convenience and ease of spreading. It is a source of high quality lime and can be blended with dry fertilizers. Disadvantages include higher cost than traditional calcitic or dolomitic lime. Also, the liming effect is localized in the area around the granule or pellet.

Other liming materials should be analyzed for neutralizing value and fineness, if appropriate. Some, such as industrial wood ash, may include plant nutrients in addition to providing liming function. Paper mill sludges vary depending on the source, but generally provide around 10% lime equivalent by dry weight and include clay and organic material.

Part 2 of this article will focus on an Upper Peninsula trial to demonstrate differences in locally available liming materials.

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Grazing & Soil Health

Soil Health is a popular issue as evidenced with every farm magazine highlighting cover crops, no-till and “soil health”. A healthy soil, as defined by the NRCS, is “*the continued capacity of soil to function as a vital **living ecosystem** that sustains plants, animals, and humans*”. (the bold is Ben’s) To achieve this “living system”, the core practices for a healthy soil are: minimal soil tillage, living roots, soil cover or liter, and plant diversity. That would seem to be exact description of pastures, but not all pastures would be considered the picture of idea soil health or productivity. In fact, most corn fields often look a lot more “healthy” than many pastures. Here’s the rest of the story.

Why is having a “healthy soil” is so valuable? We know it takes sunshine, water, and fertility to grow plants. The health or life in the soil can play a huge role in making this system work to our advantage. The sunshine is the energy in the photosynthetic reaction that takes water and CO₂ and with the help of the green leaf makes sugars. Up to 40% of this sugar is “leaked” out of the roots to feed the life in the soil. The life in the soil, bacterial and fungi in particular, “give back” to the plant: water, nitrogen, phosphorus, and a host of other nutrients and functions. In addition to “feeding” the plants, the soil life produces a glue called glomalin that sticks soil particles together to form aggregates. This is critical because the aggregates create spaces in the soil to hold water and air and allow for root penetration. Also, the life in the soil is what breaks down plant residues and most anything organic into useable plant and soil life nutrients. The soil life then puts this carbon based “stuff” back together again as organic matter. The organic matter holds the water for future plant use, in fact, an increase in 1% of organic matter will generally increase water holding capacity by almost 1acre inch or 20,000 gal/acre or more. The plants and the soil life have an interconnected system that works without inputs supplied by man. A diversity of plants is critical because each plant has its fellow soil

life organisms and an increase in different kinds of plants, means more different kinds of soil life, which in turn results in more nutrients and soil life services being available. If the soil is not alive or the system is not functioning at full capacity due to repeated tillage, long fallow periods, etc., then either plants do not grow as well or we have to add more inputs to make the system function.

Soil health is not a warm and fuzzy idea. Enhancing this living system is a way every farmer can work WITH the soil life so the farmer has to supply less inputs. If you ignore or harm the life in the soil, (the health of the soil), and go it alone, you will have to use more fertilizer to supply nutrients, more pesticide to control the unwanted pests, and pray more often for rain.

Where does grazing figure into what happens below the soil surface? Grazing can have a big impact on the soil life and therefore future pasture growth. Based on information from Dr. Lee Manske of North Dakota State University and work we have done via a SARE grant on our grazing farm, animals grazing plants sends a big message to the underground world. We used a Solvita test that measures the amount of CO₂ produced. The amount of CO₂ produced is an excellent indicator of amount of active life in the soil. We found that grazing can increase soil life by more than 25% over non grazed areas in just 24 hours post grazing. In addition, other research has showned that animals grazing or biting plants will actually stimulate a faster re-growth rate. It almost sounds too good to be true but research demonstrates that proper grazing will actually stimulate greater plant production. You can “eat your grass and have it too” and it really makes sense because grazing forages and grazing animals have co- evolved and actually depend on one another for existence. So, why don’t most pastures look better than corn fields, or in dry areas, why is the brush doing better than the grass? Those sorry looking pastures you see are the results of poor management of the plant – animal interaction.

Grazing & Soil Health, cont. pg. 8



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Beef Cattle Meeting—Deworming and Holistic Management

Michigan State University Extension will be conducting a beef cattle meeting on July 27, 7-9:00 pm EDT at the Feedmill Café, 35009 Tapiola Rd in Tapiola. Jason Rowntree and Frank Wardynski will be present to discuss deworming beef cattle as well as many other management practices using a holistic management decision making process. Jason is in charge of the beef cattle at the U.P. Research and Extension Center in Chatham and leads the grass fed research at both research stations in Chatham and at Lake City. The Chatham research is part of a systems project that looks at the live-stock/cropping systems interaction. Frank is leading a producer cooperator project on deworming cattle that utilizes fecal egg counts to determine need for treatment and identifies resistance issues. The agenda for this meeting is highly flexible. Jason and Frank would like to discuss any topics producers are willing to bring to the meeting regarding cattle production, grazing, forage production and soil health.

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KEYNOTE SPEAKER: ELIOT COLEMAN



Photo by Bryan Karlin

ELIOT COLEMAN has been involved in organic farming since 1966. He has 50 years experience in field vegetables, greenhouse vegetables, rotational grazing of livestock, range poultry. He is the author of *The New Organic Grower*, *Four Season Harvest*, and *The Winter Harvest Handbook*, which has been translated into both French and German editions. He is also co-author of *The Four Season Farm Gardener's Cookbook*. With his wife Barbara Damrosch he owns and operates Four Season Farm.



This conference qualifies for MAEAP phase one credits
Application for SCECH credits submitted

U.P. FOOD EXCHANGE
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 Western Upper Peninsula Health Department

Market Report

Choice Steers	\$110—\$130 per 100 lbs.
Holstein Steers	\$95—\$124 per 100 lbs.
Hogs	\$69—\$76 per 100 lbs.
Lambs	\$170—\$190 per 100 lbs.
Cull cows	\$65—\$75 per 100 lbs.
Calves	\$180—\$260 per 100 lbs.
Goats	\$250—\$250 per 100 lbs.

Breeding and Feeder Animals

Grade Holstein cows	\$1700—\$2400/head
Grade Holstein bred heifers	\$1700—\$2400/head

Feed Prices across the U.P. - 5/16

	Avg. \$/cwt	Avg. \$/ton	Price Range
Corn	\$9.25	\$185.00	\$170-270
Soymeal	\$23.55	\$471.00	\$433-552
Oats	\$8.50	\$170.00	\$160-198
Barley	\$8.00	\$160.00	\$160-232
Average price/100 wt. for 1 ton lots			



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Grazing & Soil Health, cont. from pg. 4

There is a delicate balance between the plants and the animals and it's our job to keep that interaction beneficial to both. Here are the three key principles to better soil life via grazing: 1 – **put more animals in a smaller space for a shorter period of time.** Ideally, animals should move on to new areas before they take a bite from a plant that is trying to re-grow. That usually means three days is max in one spot.

More animals, smaller paddocks, and less time will get you more uniform and less selective grazing, more hoof action on the soil surface, and a better distribution of the manure and urine. 2- **leave appropriate plant residue.** Remember the important role green leaves and photosynthesis plays in feeding the soil life to feed the plants - grass grows grass. You are not “wasting” feed by leaving some residual that feeds the re-growth process, keeps the soil covered to protect it from hard rains and the heat from the sun, and provides carbon for all the soil life below the surface. 3- **provide adequate recovery periods between grazings.** Appropriate recovery times allows for root re-growth, the increase in soil life, and for the plant to build reserves. If a grazed plant is not allowed to recover, it gets weaker and weaker, grows less and less, and finally is crowded out by plants that were not grazed. Pastures don't become “poor and weedy/brushy” all by themselves, our (mis)management makes them that way.

If we “invest” in soil health and if we are better grazing managers, we can spend less on inputs to grow our crops, catch and hold more water, and make better use of the most important free input – sunshine. If we can grow more grass, we



can feed more livestock or the same livestock for a longer period and use less stored feed. It is critical to understand and appreciate our partners below the soil surface and how to manage our grazing to encourage their assistance. It's not just healthy soil but healthy soil for healthy plants for healthy livestock for healthy people. We are part of the system.

Ben & Denise Bartlett—Log Cabin Livestock—Trenary, MI

References:

- Defoliation induces root exudation and triggers positive rhizospheric feedbacks in temperate grassland, E. W. Hamilton III, etc., Soil Biology & Biochemistry, 40 (2008) 2865 ~ 2873
- Compensatory plant growth as a response to herbivory, S. J. McNaughton, OIKOS 40 329 ~ 336, Copenhagen 1983
- NC SARE Farmer and Rancher Grant FNC 14-943

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Calendar of Events

- June 26 Small Farm Systems Short Course, The North Farm @ UPREC (1-6 pm)
- July 20 Pasture Walk, Mike Kowalski beef farm in Rudyard (1 pm)
- July 27 Beef Cattle Meeting, Feedmill Café, 35009 Tapiola Rd in Tapiola (7-9 pm EST)
- July 30 Together at the Farm: U.P. Local Food Conference, Upper Peninsula Research and Extension Center
- August 28 Whole Farm Health Short Course, The North Farm @ UPREC (1-6 pm)
- Sept. 22-23 MSU Grazing School, Bay Mills Community College Waishkey Bay Farm, Brimley, MI
- October 9 Seed Saving, Short Course, The North Farm @ UPREC (1-6 pm)

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