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Dear Great Lakes Grazier,

Another grazing season is slowly winding down. As always, how good the season was on your farm depends upon your location in the State and the resulting weather that you received. Moisture always plays a big part in pasture growth and those in the South wanted more rain and those in the U.P. and the Tip of the Mitt wanted it to end, at least long enough to make some hay. When hay fields never dry enough to avoid tire ruts, that is excess moisture and that is what the Eastern U.P. experienced this summer.

We know that good pasture management can moderate these weather effects of too much or too little moisture. Improving soil organic matter with practices such as winter bale grazing or using multi specie grazing cover crops can retain more soil moisture. I just returned from the Grass Fed Exchange Conference in Albany, New York and the enthusiasm for practices like these to improve soil health is at an all-time high! It is amazing how these practices were just being discovered fifteen years ago and today so many people from so many different States are using them. The reason why is that they work. In trials that I have conducted grazing multi specie cover crops, feed costs were reduced by $0.50 – 0.80/cow/day versus feeding hay in November and December. And this practice improves soil organic matter at the same time according to research trials. Winter bale grazing can double soil organic matter and fertility in just 2 – 3 years according to trials that I have conducted. The process is easy to manage, the livestock are kept in a healthy outdoor environment, and feeding them hay is something you have to do anyway in the winter season. Some worry about the sod damage that the cows inflict on the hay or pasture field, but when done right with a little bit of management, the damaged is minimized and is quickly forgotten by increased soil fertility and forage growth the next years.

Some of these practices will be highlighted at upcoming field events listed in this newsletter. I hope to see you at some of these this fall!

Jerry Lindquist

MSU Extension Grazing Educator

Inside this issue:

Human Cases of E. Coli and Crypto on the Rise Locally

Summer 2017 saw an increase in illness due to *E. coli* & *Cryptosporidiosis bacteria* in Mecosta and Newaygo County residents and the source may have been contact with animals

According to District Health Department Officials, cases of human sickness caused by a specific strain of the bacteria, *E. coli* and parasite *cryptosporidium*, increased in the summer of 2017 in Mecosta and Newaygo Counties. Both of these germs are found in the intestinal tracts of humans and animals and are commonly spread by the feces that they produce. According to Dr. Jennifer Morse, Medical Director for three local health departments (Central Michigan District Health Department, Mid-Michigan District Health Department, and District Health Department #10), "these increases are concerning because the resulting illness can be life threatening." She goes on to say, "With the investigations that have been completed thus far, the major source seems to be coming from farm animals."

Escherichia coli, commonly called *E. coli*, is one of the most common bacteria on earth. It is found normally in the intestinal tracts of healthy humans and warm-blooded animals. Not all strains of *E. coli* are capable of causing illness; however, many types of *E. coli* that cause illness are relatively harmless to the long term health of infected humans and can cause diarrhea, abdominal cramps, nausea, vomiting, and a low-grade fever. One sub-group once referred to as *E. coli* 0157:H7, now known as Shiga-toxin producing *E. coli*, or STEC, is known to cause more severe human illness. STEC also causes diarrheal illness but can lead to kidney disease and can occasionally lead to death.

Cryptosporidium is a parasite in humans and animals which causes watery diarrhea that can last a few days to a few weeks. Rarely, *cryptosporidium* infection can involve and lead to complications in the lungs, gallbladder, and pancreas.

Both of these germs are spread by feces from the infected animal, or host, to the unsuspecting animal or person through ingestion. The local cases this summer point toward the host being farm animals that infected humans that had contact with these animals. Summer-time commonly sees an increase of these infections as humans come in more direct and frequent contact with farm animals. The period from spring to fall is when contact between humans and animals is most frequent given seasonal events such as county fairs, petting zoos and farm tours.

Transmission is not complete until the germ is ingested. These germs, when shed in feces, can survive in soil, water and other surfaces including concrete, wood, metal and human skin for a long period of time. The transmission can be as innocent as a child on a farm visit petting a baby calf with his/her hand and then eating with the same hand an hour later. This is why it is very important that people do not eat or drink in areas where animals are housed and always practice good hygiene by washing their hands after interaction with animals.

To keep everyone healthy, including the animals, while taking the opportunity to learn more about agriculture and have fun, it is important to practice the following, to make sure you are not exposing yourself to any harmful germs.

- Help children avoid kissing or hugging the animals.
- Do not eat, drink, or smoke in or around areas where animals are housed.
- Keep sippy cups, small toys, and pacifiers secured and put away in animal areas; they often end up on the ground and then back in the mouth of the child.
- Do not take baby strollers into animal housing areas. This will prevent the wheels from becoming contaminated and then spreading the contamination to the car or buildings at home.
- Upon exiting animal housing areas, utilize provided hand washing stations. If available, wash with soap and water for at least 20 seconds. Alcohol based hand sanitizers are not as effective as soap and water, but are also acceptable.
- When you return to your home wash all clothing with hot soapy water and clean the bottoms of footwear with soapy water if necessary.

Additionally, it's important that farmers and fair exhibitors keep pens clean and bedded on a regular basis to help reduce the buildup of harmful germs. Signage can also be posted at fairs and farms to help remind visitors to wash their hands and not eat in barns.

The immune systems of young children are still developing and may be more severely impacted by these germs. Also, the elderly or anyone recovering from a disease or illness may have a weaker immune system and be more prone to suffering the impact of these germs. Extra care and attention must be given anytime these individuals come in contact with animals, be it at a farm, fair, petting zoo or other event.

For more human health information regarding this issue contact your local public health department by calling 231-876-3823 or emailing media@dhd10.org. For agricultural health issues pertaining to this matter contact Jerry Lindquist, MSU Extension at 231-832-6139 or lindquis@msu.edu.

Baleage is different than all other forage making practices

USDA Forage Specialist says knowing how baleage is different can get you a long way toward making better quality baleage

Baleage is made in round-bale and big-square hay packages so some people assume it is very similar to making dry hay. Others assume because the end product of baleage is a fermented wet silage that it is just like making haylage. According to Dr. Wayne Coblentz, from the USDA Dairy Forage Research Center in Marshfield, Wisconsin, making baleage is different in some significant ways than other forage harvesting practices and farmers need to understand those differences if they are to make better quality forage from baleage.

Coblentz spoke in August at the Michigan State University's Ag Innovation Day in Lake City, Michigan. He highlighted the great advantages of making baleage which include: fewer weather delays; less wilting time required; reduced respiration of plant sugars resulting in better feed quality, reduced dry matter losses in the field compared to dry hay; less storage loss; and oftentimes reduced feeding losses compared to hay. Also he added that baleage requires less expensive equipment and offers more flexibility for feeding than does a traditional haylage system. However, he also explained that there are some major differences that forage producers need to understand about baleage to be more successful in making it.

These differences include:

- Baleage takes longer to ferment than chopped haylage. One reason for this is that the long plant stems in baleage do not release plant sugars as quickly to fuel fermentation as shorter, chopped haylage particles.
- Baleage usually is not packed as tightly as haylage. This permits more oxygen to be trapped within the bale, allowing extended respiration that further slows fermentation.
- Baleage is usually drier than chopped silages, which inherently restricts fermentation. Normally, the production of fermentation acids increases with higher forage moisture.

For these and other reasons, baleage goes through a slower and more incomplete fermentation than most chopped silages. This slower process usually allows the forage to remain above a pH of 5.0, and shifts even more emphasis towards maintaining anaerobic (oxygen free) conditions in order to preserve the silage. Air exclusion is then the key to making stable baleage and it is accomplished by wrapping the bales in air tight plastic. This is especially important with drier baled silages (less than 40% moisture) that are more permeable to air, and are at risk for spoilage should holes in the plastic wrap occur during storage. Baleage that is too wet (greater than 60% moisture) can undergo a secondary fermentation that produces butyric acid and ammonia, which can cause depressed animal feed consumption. These clostridial-type of fermentations are more likely to occur in difficult to ensile crops, such as alfalfa, that have high buffering capacity and have very limited amounts of sugar. Cool-season grasses are usually more forgiving in this respect.

To make the highest quality baleage, and to avoid the feeding of a lower quality product Coblentz recommends the following:

- Make baleage from forages that are harvested at the proper stage of maturity and are of good quality. Do not assume that baled silage techniques will magically improve poor-quality forage.
- Harvest baleage in the moisture range of 45 – 55%. The bales will be lighter to handle, will optimize intake & performance, and will prohibit clostridial activity during fermentation and storage.
- Make bales that are packed tightly with high density. Excluding as much air as possible from the bale is important. Maximize revolutions within the baler for each bale by slowing ground speed, maintaining appropriate engine rpm, and by baling only moderately sized windrows.

- Wrap bales with 6 or more layers of plastic as soon as possible after baling; significant damage may occur after 24-hour or longer delays. Consider using a lactic-acid producing inoculant from a reputable manufacturer anytime conditions are less than optimum.

The key to making high quality baleage is to make a bale within the recommended moisture range that is as dense as possible (> 10 lbs DM/ft^3), and wrap it in plastic as quickly as possible. This will allow oxygen depletion to occur rapidly inside the plastic. Once oxygen depletion is complete, fermentation will occur, but because of the slow and limited fermentation within baled silages, maintaining anaerobic conditions is absolutely critical. As such, plastic should be monitored closely for damage, and patched promptly when holes or leaks are discovered.

Some farms are successfully baling very dry silages (25 - 40% moisture), and preserving the forage in plastic. Coblentz says these bales typically will not ferment aggressively, and preservation is largely achieved by limiting air access. However, in the absence of air, preservation can be accomplished , provided the producers are diligent about maintaining the integrity of the silage plastic. As forages become drier, there may be increased risk of internal puncturing of the plastic as these drier plant stems become more rigid. This often occurs along the junction of the flat and circumferential sides of the round bale. A small investment in additional plastic layers may be appropriate for these very dry silages.

Baleage has many advantages and continues to grow in popularity. When done right it can make high quality forage that can optimize animal performance. For more information contact Jerry Lindquist, MSU Extension Grazing and Field Crop Educator at 231-832-6139 or at lindquis@msu.edu.

2017 Osceola County Soil Health Field Day

Thursday, October 12, 2017
2:00pm—6:00 p.m.

Schedule of Events:

2:00PM Benefits of Cover Crops in Field Crop Operations: John Bode rental field, corner of 15 Mile Rd (Sunrise Lake Rd) & 150th Ave. 3 miles east of LeRoy, MI

4:00PM Using Multi-Species Cover Crops for Cattle & Small Ruminant Fall Grazing: Dan Lee Farm, 16932 US Hwy 10, Hersey, MI

6:00PM Dinner sponsored by Farm Bureau Insurance & Byron Seeds

Additional Topics:

Economics of soil health improvement

Cover crop trials

Cover crop species comparison

Rainfall impact on soil nutrients

Speakers will include:

John Bode of Pine Crest Dairy

Gerry Davis of Byron Seeds

Local MSU Extension Staff

Local NRCS & MAEAP Staff

Please RSVP your intentions to attend at 231-832-2950 by October 9

Cover crops improve overall soil health by acting as a living mulch and reducing weeds, disease, and inputs. MSU Extension, NRCS and MAEAP will be on hand for discussions about the benefits of cover crops and programs available. MAEAP Phase 1 Credit available.

If you have any questions, please call us! At the Osceola-Lake Conservation District—231-832-2950

If you need an accommodation to participate, please contact Greg White at 231-832-5341 or at: greg.white@nrcs.usda.gov by 9/28/2017 if you wish to attend.

NRCS is an Equal Opportunity Provider and Employer.

MICHIGAN STATE UNIVERSITY | Extension

Sheep Flock Producer's Series

A series of meetings to teach the basics of sheep management, nutrition, herd health and predator control to the sheep and goat flock owner.

October 18, 2017 Denise & Ben Bartlett, flock owners from Traunik, MI, will address getting started with sheep; health & handling issues including parasite management, and predator abatement issues. Meeting is from 6:30—9:00pm at the MSU Lake City Bio-AgResearch Center, 5401 West Jennings Rd., Lake City, MI.

November 8, 2017 Issac Matchett, flock owner from Charlevoix, MI, and Jerry Lindquist, MSU Extension Grazing Educator, will address sheep flock grazing management, fencing and extending the fall grazing season. Meeting held from 6:30—9:00pm at the Osceola County Courthouse, 301 West Upton Street, Reed City, MI.

November 27, 2017 Dr. Richard Ehrhardt, MSU Small Ruminant Specialist will discuss Flock Nutrition, Ram Breeding Soundness Examination and Sheep Marketing Options and Strategies. Meeting will be held at the Mecosta County MSU Extension Conference Room, 14485 Northland Drive, Big Rapids, MI.

MSU Extension programs are open to all people. There is no charge to attend these meetings. Please RSVP your attendance to determine the number for refreshments and for material handouts. Call the Osceola County MSU Extension Office at 231-832-6139 at least two days before each meeting.

Agriculture Field Day

October 21, 2017

Schoedel's Summit View Farm

3217 Schoedel Road, Manistee, MI

*****MAEAP Phase 1 Event*****
MDA 3 RUP Recertification Credits

9:30 AM to 9:40AM	**Welcome and Introductions** Scott Hughey USDA-NRCS Katie Schoedel, President Benzie & Manistee Farm Bureau
9:40 AM to 10:40 AM	**Board Hay Wagon — Crop Land Demonstration** Discussion about conservation on cropland including pesticides, nutrient management, cover crops, crop rotation, & minimum till/no-till. Panel discussion with MSU Extension, NRCS, Seed Reps, and other industry professionals
10:40 AM to 10:45 AM	**break**
10:45 AM to 11:45 AM	**Board Hay Wagon — Pasture Demonstrations** Discussion about conservation on pastureland including weed control, prescribed grazing, extending the grazing season, fences, supplying water, sacrifice areas, & planting pastures. Discussion with MSU Extension, NRCS, Seed Reps, and other industry professionals
11:45 AM to 12:15 PM	**Headquarters Tour** Discussion about Conservation Practices on Headquarters including, runoff water, waste storage facility, heavy use area protection, fuel facilities, pesticide storage, & fertilizer storage. Discussion with MSU Extension, NRCS, and MAEAP staff
12:15 PM to 1:00 PM	**Lunch and Learn*-** Lunch provided by Benzie-Manistee Farm Bureau *12:30 PM MAEAP Information Presentation - Lizzy Freed, MAEAP Technician Benzie County, and Dan Busby, MAEAP Verifier - MDARD
1:00 PM to 3:00PM	**Transitioning your Farm Business to the Next Generation** Tom Doyle, Attorney with Doyle Law PC & Professor, Thomas Cooley Law School, Subjects taught include Estate Planning, Law of Cyberspace, and Computer Law
3:00 PM to 3:15PM	**Wrap Up and RUP Credits**

There is ***no fee*** for attending this event and lunch will be provided, but please ***register no later than October 13.*** To register, contact the Manistee Conservation District at (231) 889-9666 or email scott.hughey@mi.usda.gov

MICHIGAN STATE UNIVERSITY | Extension

Mid Michigan Cattle Network
Cool Season Grazing Field Day

DATE & TIME:
October 26, 2017
5:30—7:00 p.m.

LOCATION:
Grove Farm
2093 Swanstra Rd.
Gladwin, MI 48624

Speakers for the event:
Byron Seed Rep.
Gerry Davis
MAEAP Technician:
Ken Wawersik
MSUE Educators:
Paul Gross
Jerry Lindquist
Kable Thurlow
NRCS
NRCS District Conservationists
Dave Lehnert
Boyd Byelich

Hosted by:
Thane and Trena Grove

WHO SHOULD ATTEND:
Beef Cattle Producers, individuals interested in cover crops or annuals for livestock, those interested in Management Intensive Grazing, soil health and lowering cost of production and increasing profitability.

DESCRIPTION:
Participants will be able to view **cool** season annuals that will be used for grazing beef cattle. There will be Industry professionals on site to talk about various crops available for forage production. This event also qualifies as a MAEAP Phase 1 meeting.

HOW TO REGISTER:
https://events.anr.msu.edu/mmcncool/

CONTACT:
Kable Thurlow call: 989-426-7741 or email thurlowk@anr.msu.edu

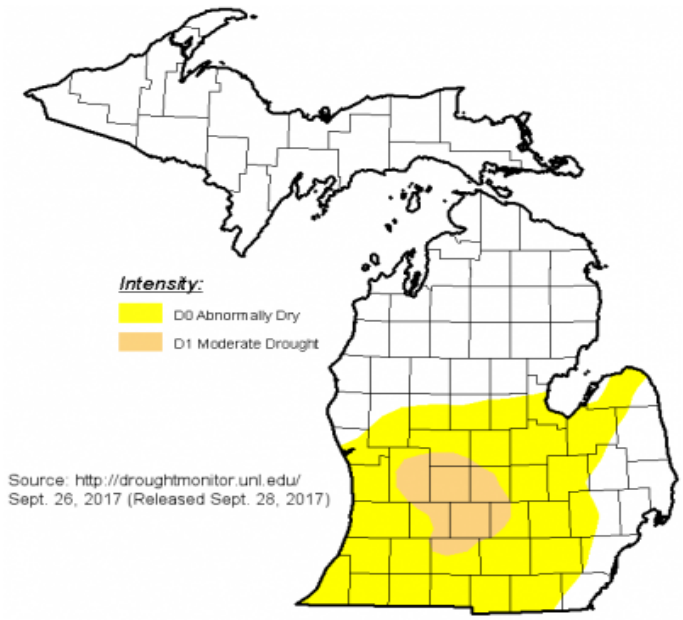
FEEDER CATTLE SALES

FALL 2017

DATE	TIME	SALE NAME	PHONE	LOCATION
October 5	2:00 pm	Clare County Livestock Feeder Calf Sale	(810) 441-6191	Clare
October 5	5:00 pm	Lake Odessa Livestock Feeder Calf Sale	(616) 374-8213	Lake Odessa
October 6	12:00 pm	Northern Michigan Livestock	(989) 732-5732	Gaylord
October 6	1:00 pm	United Producers Feeder Cattle Sale	(989) 681-2191	St. Louis
October 8	6:00 pm	Ravenna Auction Feeder Calf Sale	(231) 853-5738	Ravenna
October 14	12:00 pm	Marlette Livestock Dairy and Feeder Calf Sale	(989) 635-2183	Marlette
October 20	12:00 pm	Northern Michigan Livestock	(989) 732-5732	Gaylord
October 20	1:00 pm	United Producers Feeder Cattle Sale	(989) 872-2138	Cass City
October 24	Noon	West Branch Feeder Calf Sale	(989) 370-6200	West Branch
November 2	1:00 pm	Clare County Livestock Feeder Calf Sale	(810) 441-6191	Clare
November 2	5:00 pm	Lake Odessa Livestock Feeder Sale	(616) 374-8213	Lake Odessa
November 3	12:00 pm	Northern Michigan Livestock	(989) 732-5732	Gaylord
November 3	1:00 pm	United Producers Feeder Cattle Sale	(989) 681-2191	St. Louis
November 6	6:00 pm	Ravenna Auction Feeder Calf Sale	(231) 853-5738	Ravenna
November 11	12:00 pm	Marlette Livestock Dairy and Feeder Calf Sale	(989) 635-2183	Marlette
November 24	5:00 pm	Lake Odessa Livestock Feeder Sale	(616) 374-8213	Lake Odessa
December 1	1:00 pm	United Producers Feeder Cattle Sale	(989) 681-2191	St. Louis
December 4	6:00 pm	Ravenna Auction Feeder Calf Sale	(231) 853-5738	Ravenna
December 7	1:00 pm	Clare County Livestock Feeder Calf Sale	(810) 441-6191	Clare
December 8	12:00 pm	Northern Michigan Livestock	(989) 732-5732	Gaylord
December 14	5:00 pm	Lake Odessa Livestock Feeder Sale	(616) 374-8213	Lake Odessa
December 16	12:00 pm	Marlette Livestock Dairy and Feeder Calf Sale	(989) 635-2183	Marlette

Overcoming forage shortages in drought-stressed areas of Michigan

Kevin Gould, MSU Extension Beef Educator



Michigan drought monitor on September 28, 2017.

The 2017 growing season in Michigan may go down as one of the oddest on record. Tremendous variations in crop maturity, yields and harvest challenges exist across the state. The Upper Peninsula has received surplus moisture for most of the summer. In contrast, central and south-western Lower Peninsula areas are in moderate drought receiving rain amounts of less than three inches from May through September.

For those beef and dairy producers with forage inventory challenges, it's time to get creative with rations. Corn silage harvest is complete in central-Michigan but other grain residues are still available. As soybean and corn grain harvest gears-up, producers should be looking at forage options from those two crops. In general, we can expect 1-1.5 tons of soybean residue per acre and more than 2 tons of corn stover residue per acre with normal grain yields.

Planning is critical for harvest success. As fall rains arrive, the window of opportunity to haves crop residues begins to close. For those farms that are not harvesting grain, you should be contacting local farms in your immediate area about purchasing their crop residues. Prices for harvested stover will generally range from $50-75/ton of dry matter. Properly supplemented rations for beef and some classes of dairy cattle and sheep can economically utilize these residues as alternative forages.

Other considerations including nitrate toxicity in drought stressed forage, should be considered. If you have questions about nitrate risk, samples should be sent to a laboratory to ensure levels will not affect livestock health. Laboratory analysis of forage is also recommended to match feed resources to livestock production needs. Michigan State University Extension has many resources listed below to help guide the planning process for harvesting and feeding livestock this fall and winter.

Here are some key links for corn harvest and residue value information:

Corn Stover Harvest Bulletin 2017

Pricing and Use of Immature Corn Silage for Beef Cattle - Bulletin – 1997

Corn Stover Pricing

Michigan laboratories for nitrate or nutrient analysis:

MSU Soil & Nutrient Laboratory
www.spnl.msu.edu
(517) 355-0218

MSU Veterinary Diagnostic Laboratory
www.animalhealth.msu.edu
(517) 353-1683

Great Lakes Scientific, Inc.
www.glslab.com
(269) 429-1000

Dairyland Labs

www.dairylandlabs.com

(269)753-0048

For additional cattle management resources, visit the Michigan State University Beef Team website.

Corn stalk bales can make acceptable supplemental beef cow forage.