

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES**December 23, 2020 Issue**

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Hello Coshocton County! On behalf of OSU Extension, I would like to wish you a very Merry Christmas. Christmas 2020 is sure to look different for many of our families but the reason for the season still remains.

Peggy Hall has written a great article on the year-end funding package passed by Congress this week. Whether it gets signed by the President remains to be seen. Stay tuned for future updates.

Many of our state Extension Teams are planning programs for this winter. Today's newsletter highlights some of the offerings our State Agronomy Team is pulling together as well as a great pasture for profit school.

Have a great Christmas (looks like we might have some snow). Stay safe and be well!

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator

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The New COVID Relief Bill: What's in it for USDA?

By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law

Source: <https://farmoffice.osu.edu/blog/tue-12222020-357pm/new-covid-relief-bill-what%E2%80%99s-it-usda>

Just in time for Christmas, Congress delivered quite a package this morning by passing new COVID-19 relief legislation. President Trump is expected to sign the bill soon. Buried in the 5,593 pages of the legislation is an allocation of nearly \$11.2 billion dollars to the USDA. A large portion of the USDA funds will provide additional payments for agricultural producers under the Coronavirus Food Assistance Program (CFAP). Benefits for food processors, energy producers and timber harvesters are also in the bill, as well as funding for several other USDA programs and studies. We've categorized, compiled and summarized where the USDA funds are to go below.

Crops

- Supplemental CFAP payments of \$20 per eligible acre for the 2020 crop year, for eligible "price trigger crops," which includes barley, corn, sorghum, soybeans, sunflowers, upland cotton and wheat, and eligible "flat rate crops," which includes alfalfa, amaranth grain, buckwheat, canola, cotton, crambe, einkorn, emmer, flax, guar, hemp, indigo, industrial rice, kenaf, khorasan, millet, mustard, oats, peanuts, quinoa, rapeseed, rice, rice, sweet, rice, wild, rye, safflower, sesame, speltz, sugar beets, sugarcane, teff, and triticale but excludes hay, except alfalfa, and crops intended for grazing, green manure, or left standing.
- \$100 million in additional funding for the Specialty Crop Block Grant Program.



Livestock, poultry and dairy

- Supplemental CFAP payments to livestock or poultry producers (excluding packers and live poultry dealers) for losses from depopulation that occurred due to insufficient processing access, based on 80% of the fair market value of depopulated livestock and poultry and including depopulation costs not already compensated under EQIP or state programs.
- Supplemental CFAP payments to cattle producers for cattle in inventory from April 16 to May 14, 2020 according to different payment formulas for slaughter cattle, feeder cattle and all other cattle.
- Supplemental Dairy Margin Coverage payments for eligible operations with a production history of less than 5 million pounds whenever the average actual dairy production margin for a month is less than the selected coverage level threshold, according to a specified formula.
- \$1 billion for payments to contract growers of livestock and poultry to cover not more than 80% of revenue losses from January 1 to December 22, 2020.
- \$20 million for the USDA to improve animal disease prevention and response capacity.
- Establishment of a statutory trust via the Packers and Stockyards Act that requires a dealer with average annual purchases above \$100,000 to hold cash purchases of livestock by the dealer in trust until full payment has been received by the cash seller of the livestock.

General payment provisions

- In determining the amount of eligible sales for CFAP, USDA must include a producer's crop insurance indemnities, non-insured crop disaster assistance payment and WHIP payments, and may allow a producer to substitute 2018 sales for 2019 sales.
- USDA shall make additional payments under CFAP 1 and CFAP 2 to ensure that payments closely align with the calculated gross payment or revenue losses, but not to exceed the calculated gross payment or 80% of the loss. For income determination, USDA shall consider income from agricultural sales, including gains, agricultural services, the sale of agricultural real estate, and prior year net operating loss carryforward.

- USDA may take into account when making direct support payments price differentiation factors based on specialized varieties, local markets and farm practices such as certified organic production.

Marketing and processing

- \$100 million for grants under the Local Agriculture Market Program for COVID-19 impacts on local agriculture markets. USDA may reduce and allow in-kind contributions for grant matching requirements. USDA may provide support to processors for losses of crops due to insufficient processing access.
- \$60 million for a grant program for meat and poultry slaughter and processing facilities seeking federal inspection status or eligibility for the Cooperative Interstate Shipment program to modernize facilities or equipment, comply with packaging, labeling, and safety requirements and develop food safety processes.
- USDA must deliver a report on possible improvements to the Cooperative Interstate Shipment program that allows interstate shipments of meat and poultry products and on the availability and effectiveness of federal loan and grant programs for meat and poultry processing facilities and support for increasing processing capacity.
- USDA may make recourse loans available to dairy product processors, packagers or merchandisers impacted by COVID-19.
- Until September 30, 2021, USDA may extend the term of marketing assistance loans to 12 months.

Food purchases

- \$1.5 billion to purchase and distribute food and agricultural products to individuals in need, and for grants and loans to small and midsized food processors or distributors, seafood processing facilities, farmers' markets, producers or other organizations for the purpose of responding to COVID, including for worker protections. USDA must conduct a preliminary review to improve COVID-19 food purchasing, including the fairness of purchases and distribution.
- \$400 million for a Dairy Donation Program to reimburse dairy processors for purchasing and processing milk and partnering with non-profit organizations to develop donation and distribution plans for the processed dairy products.

Timber and energy

- \$200 billion for relief to timber harvesting and hauling businesses that experienced a loss of 10 percent or more in gross revenue from January 1 to December 1, 2020, as compared to the same period in 2019.
- USDA may make payments for producers of advanced biofuel, biomass-based diesel, cellulosic biofuel, conventional biofuel or renewable fuel produced in the U.S. for unexpected market losses resulting from COVID-19.

Training and outreach

- \$75 million for the Farming Opportunities Training and Outreach Program for grants for beginning, socially disadvantaged and veteran farmers and ranchers impacted by COVID-19. USDA may reduce and allow in-kind contributions for grant matching requirements and waive maximum grant amounts.

Farm stress

- \$28 million for grants to State departments of agriculture to expand or support stress assistance programs for agriculture-related occupations, not to exceed \$500,000 per state.

Nutrition

- \$75 million for the Gus Schumacher Nutrition Incentive Program, and USDA may reduce matching grant requirements.

We'll keep digging through the legislation to report on other agricultural provisions. Or readers may take a look at H.R. 133, available [here](#). The USDA allocations we summarized are in Subtitle B, beginning on page 2,352.

Coshocton County Ag- Year in Review

By: David L Marrison, Extension Educator, Agriculture & Natural Resources

Written for The Beacon Newspaper. December 24, 2020

Merry Christmas Coshocton County! I hope you are having a wonderful Christmas week. In just a few short days we will put a bow on the year of 2020. I don't know about all of you, but I feel like a marathon runner who is struggling to make it to the finish line on the horizon.

Traditionally in my final column of the year, I try to pause and reflect on the major news stories of the year and examine how our agriculture industry fared. So, here we go!

The year began with such promise. The economy was rolling along and then all of our lives were altered by the coronavirus pandemic. Then for good measure, throw-in social protests, the presidential election and continued weather extremes and we have a year which can be encapsulated in one word- unprecedented.

While the word unprecedented takes the word of the year honors, I think there are many additional words and phrases that will forever be tied to 2020. Some of these could include: quarantine, flatten the curve, resilience, face masks, gaiters, Wuhan, Black Lives Matter, virtual, Karen, shaming, essential workers, social distancing, pivot, we are all in this together, stay at home, tele-work, new normal, cancel culture, murder hornets, and last but surely not least ZOOM!

Obviously, when we will look back on 2020, the coronavirus pandemic will be front and center. The long-term impact of missing school, work and social interactions remains to be seen. What we do know is that normal may never look normal again. We will continue to learn, grow and adapt.

Agriculturally in Coshocton County, we have a lot to be proud of and our local farmers are a tough bunch that is able to react to any condition thrown their way including COVID-19. I feel very blessed to be working with all those who make agriculture great here in Coshocton County.

Quietly a good year- Agriculturally it was a quiet yet good year here in Coshocton County with regards to growing crops and raising livestock. After a cool and damp start to the growing season, our weather conditions were quite favorable during the year. Yields were very good and we should be above trend line yields for corn, soybeans and wheat. I know some farmers were pleasantly surprised on their corn yields especially on hill ground.

We make a lot of hay here in Coshocton County and this year should have made most hay producers smile. Cool temperatures and early May frosts reduced our first cutting yield but our great weather allowed hay to be made on a timely basis throughout the summer. This allowed some really nice second and third cutting to be made. Our hay quality testing program is showing the nutrient quality of this year's hay is exceptional. This is a huge improvement over the past three years which means our cows will be eating healthier as the snowy and cold weather sets in.



A rollercoaster marketing year- While our production was good, our farmers were subject to some pretty significant marketing issues as a result of the pandemic. Instead of our usual market cycles, we saw prices move up and down in ways we could never imagine. Some commodities such as dairy are still recovering from a 40% price drop this past spring. The coronavirus pandemic has also showed the weakness of our processing sector.

Just as individuals were helped by the stimulus checks, our agricultural producers received some financial relief through the Coronavirus Food Assistance Program (CFAP) administered by the Farm Service Agency office. Over 270 producers received much needed assistance through two versions of this program. These payments were a shot in the arm for many in our area.

I would like to share how fortunate we are to have such a great Farm Service Agency office here in Coshocton County. In addition to dealing with a new Farm Bill program they were able to flawlessly learn and administer the CFAP sign-ups even in the midst of all the restrictions which coronavirus presented. Kudos to Mike, Darla, Kari and Kaitlyn for a job well done this year. I know our farmers appreciate your hard work!

Final thoughts- I know there is a lot we will take away from 2020. It is my hope that we are able to focus on the positive adaptations we have made in both our personal and business lives as we move into a “different” normal. I hope you focus on the blessings not the cancellations.

As we close the year of 2020, I would like to offer the following quote from Edith Lovejoy Pierce who stated, “We will open the book. Its pages are blank. We are going to put words on them ourselves. The book is called Opportunity and its first chapter is New Year’s Day.” Coshocton County, have a good and safe new year!

Dealing with the Threat of Intentional Harm to Farm Property

By: Peggy Hall, Associate Professor

Source: <https://farmoffice.osu.edu/blog/thu-12172020-158pm/dealing-threat-intentional-harm-farm-property>

Whether from trespassers, thieves, vandals, disgruntled employees, drug makers, activists, or extremists, farm security threats are a risk farmers face. Unfortunately, current social and political conditions have added new dimensions to that risk. Intruders can harm property in many ways: releasing or injuring livestock, stealing anhydrous or chemicals, destroying crops, contaminating water, introducing disease, setting fires, or committing other acts of theft, vandalism or destruction.

Recent suspicious activities on Ohio farms have reminded us of the need for constant awareness of farm security and intentional harms to farm property. Our newest publication, [Intentional Harm to Farm Property: Legal Options and Strategies for Farm Owners](#) aims to meet this need by addressing:

What to do when a farm security issue occurs. Three immediate actions can be helpful to ensuring a clear-headed reaction to an incident:

- Call local law enforcement.
- Secure the property and preserve the evidence.
- Contact insurance provider.

Options for legal action. How can a farmer address a security incident through the legal system? Local law enforcement might pursue a criminal action, a farm owner might choose to file a civil action, or both criminal and civil actions could take place. Conferring with law enforcement and an attorney will help determine an appropriate course of action. The bulletin explains common criminal actions that might apply to a farm security episode, such as:

- Agricultural product or equipment terrorism
- Animal or ecological terrorism based on corrupt activity
- Arson
- Aggravated arson
- Breaking and entering
- Criminal damaging or endangering
- Criminal mischief
- Criminal trespass
- Injuring animals
- Poisoning animals

- Reckless destruction of crops or timber
- Theft
- Vandalism
- Attempt, complicity and conspiracy regarding any of the above crimes

We also review laws that provide for civil actions against someone who intentionally harms farm property, such as:

- Civil action for damages for criminal act
- Civil theft and willful damage
- Civil trespass to personal property, such as animals and equipment
- Civil trespass to real property
- Civil vandalism
- Civil action for animal or ecological terrorism
- Destruction of crops or timber

Preventing the risk of farm security occurrences. Farmers can adopt practices that reduce the possibility of intruders and incidents of intentional harm to farm property. We list a dozen strategies in the bulletin that may be helpful, such as marking, posting and security property boundaries, maintaining a record of suspicious activities, vetting employees, and conferring with a security professional.

Read more about *Intentional Harm to Farm Property: Legal Options and Strategies for Farm Owners* which is available in the agricultural law library at: [https://farmoffice.osu.edu/sites/aglaw/files/site-library/Harm to farm property Dec2020.pdf](https://farmoffice.osu.edu/sites/aglaw/files/site-library/Harm%20to%20farm%20property%20Dec2020.pdf)

Registration is now open for our first A DAY in the WOODS program for 2021 “The Fall & Rise of Bald Eagles in Ohio”. This program will take place via Zoom Webinar at 10 AM on January 8, 2021. Featured presenters are Brad Perkins (Ohio Forestry Association) and Laura Kearns (ODNR-Division of Wildlife). For more information and to register visit:

<https://u.osu.edu/apsley.1/2020/12/17/the-fall-rise-of-bald-eagles-in-ohio-offered-on-january-8-at-10-am/>

Fall & Rise of Bald Eagles in Ohio Program Slated for January 8

by [David Apsley](#)

OSU Extension will sponsor a webinar titled “The Fall and Rise of Bald Eagles in Ohio” on January 8 at 10 a.m. This program will be presented by Brad Perkins, Executive Directory of the Ohio Forestry Association, and Laura Kearns, Wildlife Biologist with ODNR-Division of Wildlife.

Brad is passionate about bald eagles and photography. He has monitored eagle nests in Ohio for 25 years. Laura is actively involved in bald eagle surveys and nest census work in Ohio.

Learn about the recovery of this magnificent bird and its current status in Ohio. Brad and Laura will share stunning photography, current statistics and trends, tips for observing and identifying eagles, rescue stories, as well as, their personal experiences studying and photographing bald eagles in Ohio. The program will conclude with a question answer session. To register for this Zoom Webinar visit: <http://go.osu.edu/ditw2021>



Photo courtesy of Brad Perkins

Register Now for OSU Extension's Online Agronomy Programs

By: [Mary Griffith](#), [Amanda Douridas](#), [Laura Lindsey](#), [Allen Geyer](#)

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2020-41/register-now-osu-extension%E2%80%99s-online-winter-programs>

This winter OSU Extension's Agronomy Team will offer a variety of educational programs for farmers and crop consultants to attend online. The team will offer both traditional programs including a Corn College, Soybean School, and Precision University, as well as focusing on some new hot topic areas. New programs will focus on three areas: Investing in Soil Health, Crop Diversity to Improve Your Bottom Line, and Farming in Weather Extremes. CCA CEUs will be offered at each session. There is no cost to attend, but registration is required for each session to receive log-in information. The schedule with registration information for each program is listed below.

Be one of the first 300 people from Ohio to sign-up and attend a 2021 Virtual Winter Meeting hosted by the AgCrops Team and you will receive a set of handouts! Included in the shipment to your door is a copy of the Corn, Soybean, Wheat, and Forages Field Guide, a 2020 eFields Report (2019 pictured), digital soil thermometer, and a 2021 Agronomic Crops Team Calendar (with important marketing, crop insurance and USDA report dates identified). These items were generously funded by the Ohio Soybean Council and the USDA NIFA Integrated Pest Management program.

The Dirt on Soil Health: Investing Below the Surface. In this weekly series, farmers, industry, and academic experts will weigh in on practical steps to improve soil health and measure impact on crop yield and farm profitability. Thursdays, January 14 – March 18, 8 a.m. to 8:30 a.m.

Register: <http://go.osu.edu/soilhealth2020>

- January 14 - Does Soil Health Pay? Farmer Panel, Nathan Brown, Matt Falb, and Les Seiler
- January 21 - What Can Soil Health Tests Tell You? Steve Culman
- January 28 - Can Improving Soil Health Improve Yield? Jordon Wade
- February 4 - Cover Crop Management, Hans Kok
- February 18 - Compaction Solutions, Scott Shearer
- February 25 - Soil Health in Ohio, Elizabeth Hawkins and Steve Culman
- March 4 - What's the Return on Investing in Soil Health?, Rick Clark
- March 18 - Programs and Funding to Support Soil Health



Crop Diversity to Improve Your Bottom Line. This series will look at practices and considerations to successfully incorporate alternative grain crops into your rotation to diversify your operation. Thursdays, January 14 – March 4, 9:00 a.m. to 10:30 a.m. Register: <http://go.osu.edu/cropdiversity>

- January 14 – Specialty Small Grains, Winter Malting Barley (Greg McGlinch), White Wheat (Dennis Pennington), Wet Wrapped Oats (Al Gahler), Triticale (Jason Hartschuh)
- February 4 – Seed Production, Corn and Soybean Seed Production (Fred Pond), Cover Crop Seed Production
- March 4 – Non-GMO Crop Production, Best Practices for High Yielding Non-GMO Soybean Production (Laura Lindsey), Weed Control (Mark Loux), Insect Management: The Forgotten Corn Pests (Chris DiFonzo)

Farming in Weather Extremes. This series will present practices and technology farmers can utilize to adapt to challenging growing seasons with increasing extreme weather events. Thursdays, January 21 – March 18, 9:00 a.m. to 10:30 a.m. Register: <http://go.osu.edu/adapt>

- January 21 - Disease Management Options for Today's Weather, Pierce Paul and Aaron Wilson
- February 18 - Managing Water in Today's Wet and Dry Growing Seasons, Aaron Wilson, Eileen Kladvik, Larry Brown, Lyndon Kelley
- March 18 - 2021 Growing Season Weather Outlook and Changing Climate Patterns, Aaron Wilson

Corn College and Soybean School. Best management practices and important updates for the 2021 growing season. Speakers include Peter Thomison, Steve Culman, Pierce Paul, Laura Lindsey, Mark Loux, Anne Dorrance, Andy Michel, and Kelley Tilmon. February 11, 9:00am-12:00pm (Corn College) and 1:00-4:00pm (Soybean School). Register: <http://go.osu.edu/agronomyschools>

If you have questions about Agronomy Team Programs, please contact Amanda Douridas (Douridas.9@osu.edu), Mary Griffith (Griffith.483@osu.edu), or Laura Lindsey (Lindsey.233@osu.edu). Extension will offer online programs focused on other topics areas as well as agronomic crop production including farm management, livestock production, pesticide applicator recertification and more – for a full list of Extension programs visit: <https://agmr.osu.edu/programming>

Pastures for Profit School Goes Virtual this Winter

This coming year between January and March, 2021, the Pastures for Profit curriculum will be offered as a virtual course. One live webinar will be offered per month along with “work at your own pace” videos and exercises that accompany each webinar. The Pastures for Profit program is a collaboration between Ohio State University Extension, Central State University, USDA-Natural Resources Conservation Service, Ohio Federation of Soil and Water Conservation Districts, Ohio Department of Agriculture, and the Ohio Forage and Grasslands Council.

Each webinar will be offered live on Zoom beginning at 7 P.M. and feature three presentations Over a 90-minute span. Attendees will be able to interact with the speakers and ask questions in real time. Once registered, attendees will be granted access to the online course including the webinars and complementary resources. Participants that attend all three webinars will have the opportunity to earn a certificate of completion. Registered participants will also receive their choice of a curriculum binder or USB drive of the traditional course delivered via mail.

The webinar schedule and topics are as follows:

Webinar One– Core Grazing Education: 90 minutes, Wed., January 13 at 7 p.m.
Evaluating Resources and Goal Setting
Getting Started Grazing
Soil Fertility

Webinar Two– The Science of Grazing: 90 minutes , Wed., February 3 at 7 p.m.
Understanding Plant Growth
Fencing and Water Systems
Meeting Animal Requirements on Pasture



The virtual Pastures for Profit course will consist of three 90-minute webinars offering a variety of pasture and grazing topics. Once registered, attendees will be granted access to the online course including the webinars and complementary resources. Participants that attend all three webinars will have the opportunity to earn a certificate of completion. Registered participants will also receive their choice of a curriculum binder or USB drive of the traditional course by mail.

Wednesday, January 13th 7:00 p.m. Webinar 1:

Core Grazing Education: Evaluating Resources and Goal Setting, Getting Started Grazing, Soil Fertility

Wednesday, February 3rd 7:00 p.m. Webinar 2:

The Science of Grazing: Understanding Plant Growth, Fencing and Water Systems, Meeting Animal Requirements on Pasture

Wednesday, March 3rd 7:00 p.m. Webinar 3:

Meeting Grazing Goals: Pasture Weed Control, Economics of Grazing, Creating and Implementing Grazing Plans

Cost of the course is \$50, which includes the Pastures for Profit manual. Current and new members of the Ohio Forage and Grasslands Council are eligible for a \$10 discount on registration. **Register by visiting:** <https://afgc.org/ofgcwebinar>.



CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information visit: <http://go.osu.edu/cfaesdiversity>

Webinar Three– Meeting Grazing Goals: 90 minutes, Wed., March 3 at 7 p.m.

Pasture Weed Control

Economics of Grazing

Creating and Implementing Grazing Plans

A series of additional videos that complement each webinar will be accessible to registered participants that include topics such as:

- Soil Health & Fertility
- Species Specific Tips
- Stocking Densities
- Forage Sampling and Analysis
- Winter Feeding Strategies
- Conservation Practices
- Genetic Traits of Forages
- Pasture Layouts
- Farm Economics
- Pasture Walks/Virtual Tours

These videos will focus on more specific pasture management topics at both the beginner and experienced manager levels. Cost of the course is \$50, which includes the Pastures for Profit manual. Current and new members of the Ohio Forage and Grasslands Council are eligible for a \$10 discount on registration. Register for the course by visiting <https://afgc.org/ofgcwebinar>.

The Cost of Mud to the Beef Cow

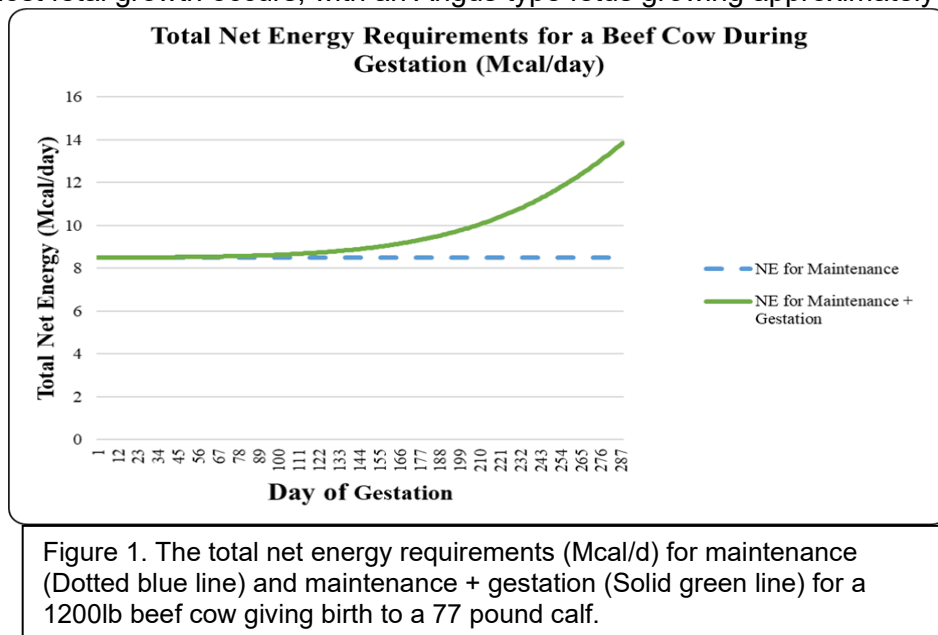
By: Kirsten Nickles, Dr. Alejandro Relling and Dr. Anthony Parker, the Ohio State University Animal Science Department

Source: <https://u.osu.edu/beef/2020/12/23/the-cost-of-mud-to-the-beef-cow/#more-10045>

Since the mid 1990's, Ohio has experienced an increase in the number of precipitation events greater than 2 inches (Frankson and Kunkel, 2017), with winter rainfall increasing and snowfall decreasing (Hayhoe et al., 2010). Winter and spring precipitation are expected to increase 20 – 30% further by the end of the century (Hayhoe et al, 2010) and summer precipitation is expected to remain the same or decrease slightly (Wuebbles and Hayhoe, 2004). As a result of these climatic changes, beef producers are dealing with more mud in pastures and lots, and this has a bigger effect on the beef cow herd than you may think.

In spring calving beef cow herds, females are typically in the last third of gestation from January to March. The last trimester of gestation is when most fetal growth occurs, with an Angus type fetus growing approximately

0.9 lbs/day towards the end of the third trimester. The rapid growth of the fetus at this time requires the cow to meet the fetal nutrient requirements by increasing her nutrient intake and/or mobilizing her body tissues. Figure 1 demonstrates the increase in nutrient requirements for maintenance and throughout gestation. At thermoneutral conditions, a 1200 lb non-pregnant and non-lactating cow, requires 8.5 Mcal Net Energy/day to maintain her body weight. At the end of gestation, the same cow requires 14 Mcal Net Energy/day to maintain her body weight and meet the requirements for the growth of a 77 pound calf.



When beef cows are exposed to wind, rain, and mud the nutrient requirements to maintain body weight and grow a fetus increase in part because the insulative properties of the hair coat are compromised, and the cow must increase her rate of metabolic heat production to maintain her internal body temperature (Webster et al., 1970; Webster, 1974; Young, 1983). It has also been proposed that cattle expend more energy when walking through mud compared to the energy they require to walk on dry ground, but there is limited supporting data for this assumption in cold environments. Cows exposed to muddy conditions change their behavior by spending a greater amount of time standing and less time lying in mud compared to cows given access to bark chip bedding and this alone requires greater energy expenditure by the cow.

In the winter of 2019, Kirsten Nickles, a PhD candidate, conducted research at The Ohio State University to determine the energy cost of a muddy environment to beef cows throughout late gestation. Cows with similar body weight were paired and allocated to either a mud pen with an average depth of 9.3 ± 2.3 inches, or a bark chip bedded pen of a similar depth. Treatments were applied to the cows from day 213 to day 269 of gestation. Although each pair of cows were fed the same amount of feed, the cows in the mud pens weighed 83 pounds less than cows in the bark chip pens and lost one body condition score by the end of the study on day 269 of gestation. Calf birth weight was not affected by the mud treatment; however, cows subjected to mud pens decreased their conceptus free body weight indicating that the cows mobilized body tissues for fetal growth. Cows in the bark chip bedding group maintained their conceptus free body weight throughout the treatment period. Nickles and her colleagues estimated the cows in the mud treatment would have needed an extra 1.8 Mcal Net Energy/day to maintain their conceptus free body weight.

The typical quality of hay fed to gestating cows in Ohio limits the cow's dry matter intake because of the concentration of neutral detergent fiber (NDF) present in the hay. Beef cows can generally eat approximately 1.2% of their body weight in NDF; but when dealing with poor quality forages, cows cannot consume enough forage to meet the requirements for maintenance and gestation. If environmental conditions such as mud increase energy requirements further than the net energy required for maintenance and gestation, then the cow must mobilize her body tissues to meet her energy demands. In mobilizing her body tissues to meet her energy requirements, the cow will lose body weight, and this can create other long term problems. Cows with reduced body weight and body condition scores will have decreased colostrum quality, longer postpartum intervals, increased days to conception, and decreased pregnancy rates (Corah et al., 1975; Soca et al., 2013; Selk et al., 1988; Perry et al., 1991). In addition, Soca et al. (2013) found that cows with a body condition score of 4.5 or greater at calving and cows that were gaining body condition after calving had greater pregnancy rates than cows that had body condition scores of 4 or less or that had lost body condition after calving. These results indicate that nutrient restriction prepartum should be avoided unless you are willing to heavily supplement cows after calving.

The effects of mud on nutrient requirements are not known for first calf heifers. We are currently conducting research in the winter of 2020 and spring of 2021 to determine the effects that mud has on first calf heifer nutrient requirements and reproduction after calving. As previously mentioned, cows housed for the last trimester of gestation in muddy conditions had an estimated increase in energy requirements of 1.8 Mcal Net Energy/day, which is equivalent to approximately 20% of the daily energy requirements for maintenance of a 1200 lb cow. While this restriction did not affect calf birth weight from mature cows, it is likely that if cows are not supplemented heavily after calving there will be an increased postpartum intervals and decreased pregnancy rates that can negatively impact the financial stability of the cow-calf operation.

***“Don't put a period where God put a comma.
Keep writing your story. The best is yet to come.”***