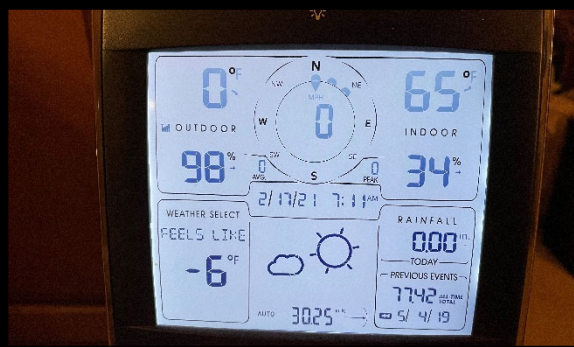


COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES



February 17 Issue (Edition #82)

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 ODA to Offer Pesticide Testing in Coshocton County

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Hello Coshocton County! It was a crispy ZERO degrees with a feel like temperature of -6 degrees this morning as we went to the barn. A lot of kidding, lambing, and calving is happening on our local farms this week and our cold weather adds a layer of difficulty to our work. It looks like the upcoming week will bring us a little more snow and cold temperatures. However, hope is in the air as today is Ash Wednesday meaning that Easter is right around the corner.

Great to see a few of our local farm families enrolled in our Planning for the Future of Your Farm virtual workshop which started on Monday evening (three week series). The winter is a great time to complete some strategic planning and it is very clear the COVID-19 pandemic has made many think about who will manage and lead their farm in the future. I would be glad to assist anyone who has questions about farm transition and estate planning.

Remember, our virtual OSU Extension programs are rolling on. Check out details at: <https://agmr.osu.edu/programming>

Stay safe, warm, and be well!

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator



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Considerations of a Flexible Lease Arrangement

Chris Zoller, Barry Ward and Mike Estadt, OSU Extension

Source: <https://u.osu.edu/ohioagmanager/2021/02/16/considerations-of-a-flexible-lease-arrangement/>

Thousands of Ohio crop acres are rented from landowners by farmers. While the most common is likely a cash agreement, the flexible lease may be worthy of consideration for some farmers. This article will provide a broad overview of the flexible lease option, including advantages, disadvantages, and structure.

The information provided here is only a summary from the Fixed and Flexible Cash Rental Arrangements for Your Farm published by the North Central Extension Farm Management Committee. Anyone interested in learning more about flexible leasing arrangements is encouraged to read more about this topic at this site:

<https://aglease101.org/wp-content/uploads/2020/10/NCFMEC-01.pdf>.



What is a Flexible Lease?

Because of uncertainties with prices, yields, and input costs, some farmers and landowners are apprehensive about entering into a fixed long-term cash rental arrangement. From the perspective of the farmer, the concerns include poor yields, commodity price declines, or sharp increases to input prices might impact cash flow if there is a long-term fixed arrangement. In times like we are experiencing now, landowners want to capitalize on high commodity prices or high yields. Therefore, the operator and landowner may turn to the use of a flexible cash rent of one kind or another. The idea of a flexible cash rent usually pertains only to the rent charged for cropland.

Advantage of Flexible Leases

- Flexible cash rent enables the landowner to share in the additional income that results from unexpected increases in the prices of crops considered in the rent-adjustment clause. If the cash rent also is flexed for changes in yields, the landowner will benefit from above-normal yields regardless of the cause.
- For the operator, risk is reduced. Cash-rent expense is lower if crop prices or yields are less than normal.
- Calculating flexible cash rent requires more communication from both parties.

Disadvantages of Flexible Leases

- For the landowner, flexible cash rent increases risk.
- Windfall profits that may be realized by the operator from unexpected price increases are reduced.
- If cash rent is flexed according to yield, the landowner becomes more concerned with the level of crop yields as well as the accuracy of reported yields. Yields must be verifiable and segregated for each land unit in the lease.
- If cash rent is flexed according to yield, the operator may give up part of the benefits from higher yields resulting from managerial input, thus possibly reducing incentives to maximize profits.
- Calculating flexible cash rent requires more management from both parties. There must be agreement on how to verify the factors that are used to set the rent each year.

Methods of Flexible Leasing Arrangements

Crop Price Only

Rents that flex only on price increase risk substantially for operators. A short crop that leads to higher prices and higher rent may leave the operator with less ability to pay.

Yield Only

With some commodities crop yields are highly uncertain. In other cases, the crop that is grown may only be fed to livestock, so no relevant market price exists. In such cases producers may prefer to negotiate a flexible lease agreement that bases the annual rent solely on the actual yield achieved.

Flex for Price and Yield

This method requires the operator and landowner to agree on a base cash rent tied to a base yield (average or expected yield) and a base expected price for each crop being considered. If only one crop is grown, this is the only crop considered. If several crops are grown and all are considered equally important, all crops may be considered in determining the current year's cash rent.

Flex for Change in Cost of Inputs

The cost of variable inputs can change significantly from year to year and cause large swings in profitability. Incorporating a factor that reflects a ratio of the base year's cost of inputs divided by the current year's cost of inputs will help stabilize the bottom line for operators.

Put the Agreement in Writing

If it is decided to use some form of flexible cash rent (or any form of rental agreement), the details of how the rent will be determined should be clearly specified in a written lease agreement.

Additional information about written farmland leases is available from Ohio State University Extension at: <https://farmoffice.osu.edu/sites/aglaw/files/site-library/Farm%20Lease%20Checklist%20law%20bulletin.pdf>

Sources

- Fixed and Flexible Cash Rental Arrangements for Your Farm, North Central Farm Management Extension Committee, <https://aglease101.org/wp-content/uploads/2020/10/NCFMEC-01.pdf>
- What's in Your Farmland Lease? Ohio State University Extension Law Bulletin, <https://farmoffice.osu.edu/sites/aglaw/files/site-library/Farm%20Lease%20Checklist%20law%20bulletin.pdf>

Crop Insurance and Farm Bill Decision

By: Chris Bruynis, Extension Educator, OSU Extension

Source: <https://u.osu.edu/ohioagmanager/2021/02/15/crop-insurance-and-farm-bill-decision/>

The 2021 decision for making the crop insurance and farm bill decisions is all about risk management. With the recent increased crop prices and the volatility in the markets, crop insurance is expected to increase by about 50%-60% this year compared to last year. So, with crop insurance more expensive and the choice between Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) unclear, the strategy to protect risk exposure becomes more interesting. In this article different strategies are outlined looking at ARC/PLC with Revenue Protection (RP), Supplemental Crop Option (SCO) and Enhanced Coverage Option (ECO).

To illustrate the different decisions several corn scenarios from an example farm in Clermont County Ohio will be used for this article. Here is some background information pertinent to the examples.

- Revenue Protection pays against the actual farm revenue using either the December futures for the month of February or the higher of the spring price or the harvest price depending on the product selected. If you believe the spring price is the higher of the two, then some insurance premiums could be saved by not electing the harvest price. Levels of RP range from 50% to 85% in 5% increments. RP can be paired with any of the Farm Bill programs. To read more on RP go to <https://www.extension.iastate.edu/agdm/crops/html/a1-54.html>
- Supplemental Crop Insurance coverage starts at the level of RP and covers up to 86% of the revenue. SCO can provide additional protection above their individual policy at a cheaper premium rate. SCO does not protect against the actual farm revenue but instead uses a county yield times the spring/harvest price. So, if your farm's production history is significantly different than the county yield, this might not be the correct product for your farm. SCO can only be used with the PLC program.
- Enhanced Coverage Option covers county revenue like SCO but starts at 86% and can go to either 90% or 95%. ECO can be paired with any of the Farm Bill programs. To read more on SCO/ECO go to <https://www.extension.iastate.edu/agdm/crops/html/a1-44.html>

- Agricultural Risk Coverage-County makes a payment when the market year average (MYA) price times the county yield falls below the county guarantee, which is calculated at 86% of the 5-year Olympic Average of prices and yields. Unlike RP, which uses growing season prices, MYA are the prices received for crops between the start of harvest this year until the start of harvest next year. Also, unlike RP, ARC-CO payments are paid against 85% of the base acres, not planted acres.
- Price Loss Coverage pays when the MYA price falls below the reference price. For corn this price is \$3.70 per bushel. PLC payments are based on base yields, which typically are 25% to 35% lower than actual yields for most farms, times 85% of the base acres, which may not reflect actual acres planted.

Before deciding about crop insurance or farm bill elections, think about your farm's production history. Is it relatively consistent from year to year or is it highly variable? Does it yield similar to the county or is it significantly different? Are you growing crops that mirror the base acres on this farm, so the Farm Bill payments track with your risk exposure? It is also important to think about what risk you are comfortable assuming. If you can survive with less insurance in the event of a low revenue year, although not pleasant, do you want to "self-insure" to a greater level.

- This sample farm has an APH corn yield of 203 bu/A. The county's five year average is 180 bu/A and trend with each other accordingly. Preliminary estimates have the spring crop insurance price at \$4.48 and at the 85% coverage level the coverage per acre would be \$773 and cost \$51 per acre. Fall prices will not be discussed for example simplicity.
- What happens to coverage if 50% RP is selected and then SCO is added for this farm? The RP coverage per acre, which is based on actual farm production, becomes \$454 and the SCO based on county revenue, would increase the coverage to \$696. The cost for this option becomes \$24 per acre.
- A third scenario is to purchase RP for 75% and then ECO for 95% leaving a coverage gap between 75% to 86% but still having 84% coverage level. Under this example RP coverage would be \$682 per acre based on actual farm revenue and then ECO would add an additional \$82 per acre based on county revenue. The cost of this combination is \$17 for RP plus \$29 for ECO for a total of \$46 per acre.

Let's examine how these three scenarios would perform under different revenue examples. The amount displayed is the net from the transaction (estimated payments less estimated costs).

	Scenario A 85% RP	Scenario B 50% RP 86% SCO	Scenario C 75% RP 95% ECO
Farm Yield 200 bu/a County Yield 180 bu/a Harvest Price \$4.00	-\$51.00	-\$24.00	\$3.00
Farm Yield 150 bu/a County Yield 180 bu/a Harvest Price \$4.00	\$122.00	-\$24.00	\$85.00
Farm Yield 180 bu/a County Yield 135 bu/a Harvest Price \$4.00	\$2.00	\$132.00	\$27.00
Farm Yield 220 bu/a County Yield 200 bu/a Harvest Price \$3.50	-\$51.00	-\$24.00	\$27.00
Farm Yield 100 bu/a County Yield 90 bu/a Harvest Price \$5.50	\$348.00	\$339.00	\$330.00

A few conclusions can be drawn from examination of these three scenarios with different yield and price assumptions. First, ECO will make payments on smaller losses since it starts after a 5% county revenue loss. It is limited and will max out at \$4.00 corn with a payment of \$73.00 per acre.

Secondly there are potential differences between RP and SCO/ECO if a farm yields significantly differently than the county yields since these programs protect against county-based losses. Under certain situations, like a widespread drought event, all the combinations provide similar risk protection.

Continuing the example to include possible outcomes under the ARC/PLC election for this same example farm provides insight to another risk management decision that needs to be made. Using the same yield and prices, the following chart contains potential farm bill payments. Note that if electing SCO insurance, ARC-CO is not available on those farms.

	Scenario A	Scenario B	Scenario C
Farm Yield 200 bu/a County Yield 180 bu/a Harvest Price \$4.00	PLC - \$0.00 ARC-CO - \$0.00	PLC - \$0.00 ARC-CO - N/A	PLC - \$0.00 ARC-CO - \$0.00
Farm Yield 150 bu/a County Yield 180 bu/a Harvest Price \$4.00	PLC - \$0.00 ARC-CO - \$0.00	PLC - \$0.00 ARC-CO - N/A	PLC - \$0.00 ARC-CO - \$0.00
Farm Yield 180 bu/a County Yield 135 bu/a Harvest Price \$4.00	PLC - \$0.00 ARC-CO - \$0.00	PLC - \$0.00 ARC-CO - N/A	PLC - \$0.00 ARC-CO - \$0.00
Farm Yield 220 bu/a County Yield 200 bu/a Harvest Price \$3.50	PLC - \$26.00 ARC-CO - \$0.00	PLC - \$26.00 ARC-CO - N/A	PLC - \$26.00 ARC-CO - \$0.00
Farm Yield 100 bu/a County Yield 90 bu/a Harvest Price \$5.50	PLC - \$0.00 ARC-CO - \$73.00	PLC - \$0.00 ARC-CO - N/A	PLC - \$0.00 ARC-CO - \$73.00

Unless there are unexpected low prices or low revenue, these programs provide very little cash flow relative to crop insurance. Also, these payments are not on planted acres or farm/county yields but are on base acres and base yields. Additionally, the price is based on the MYA price and not the higher of the spring or harvest price. The real questions are “How much risk can you afford to assume?” and “Do I use SCO with PLC to reduce crop insurance costs exposing the farm to additional risk if it yields significantly less than the county average?”

Forage Quality- What a Difference a Year Makes, or Does it?

By Ted Wiseman, OSU Extension Educator in Perry County

Source: <https://u.osu.edu/beef/2021/02/17/what-a-difference-a-year-makes-or-does-it/>

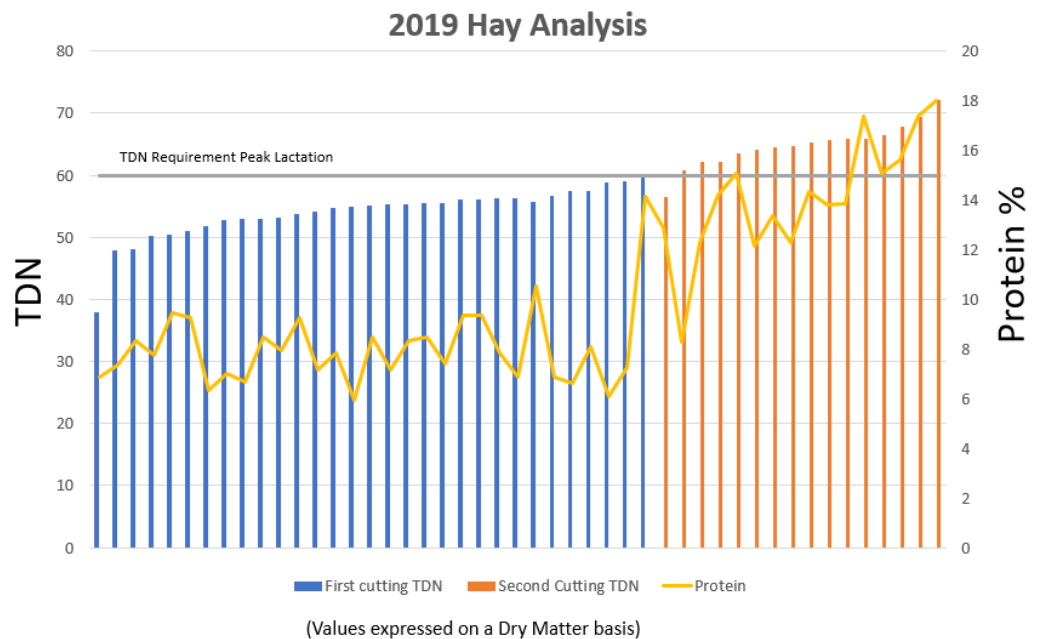
We can certainly say this past year has had its challenges. However, quality of forages made in 2020 was much better for most compared to the previous two years. Weather conditions were more favorable especially for first cutting. The late frost in May set our forages back and for many first cutting forage yields were extremely low. Second, third and four cuttings were better, but overall hay supplies are tight again for some.

Again in 2020 Extension Educators in 10 counties have collected forage samples from across the state. Chart 1 is data collected in 2019. I know we would like to forget the condition of forages in 2019, but I have included it for comparison to forage quality in chart 2 for 2020. To clarify most of these samples are not from the same producer or the same fields. This



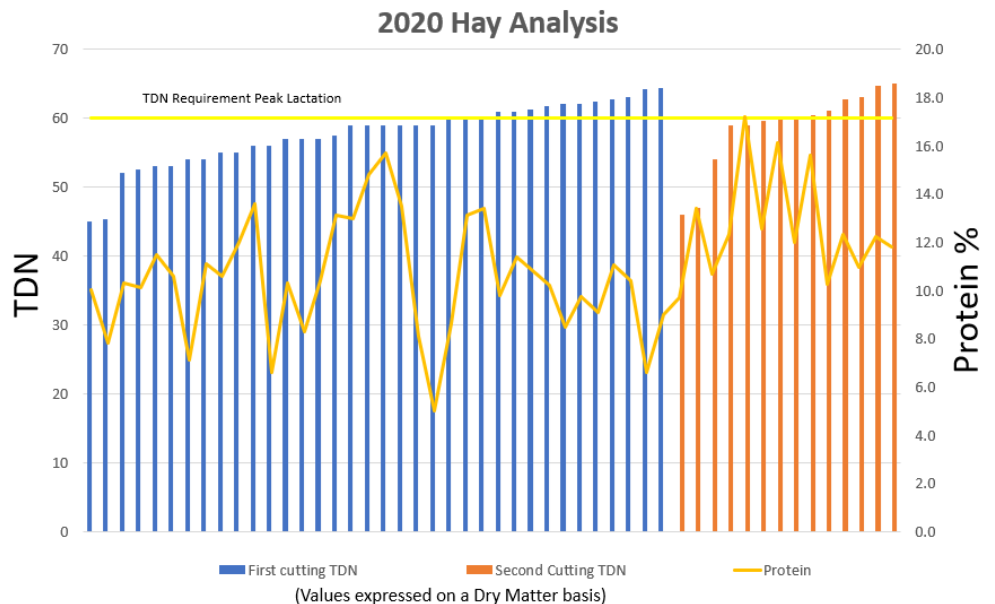
demonstration is to make a simple comparison of the overall quality of random forage samples.

Percent TDN (total digestible nutrients) is a measure of the amount of energy in the feed. Basically, this equates to the number of calories. Percent protein shown as the yellow horizontal line is a measure of the protein that is available to the animal for maintaining muscle and body systems. It is also very important for development of the calf she is carrying. In both charts the vertical blue bars represent 1st cutting hay samples while the vertical orange bars represent 2nd cutting.



For a 1200-pound cow, a TDN level of 60% is needed for a cow in peak lactation, 54% at calving, and 49% for the last trimester. The corresponding protein levels for each of these times would be 8, 10 and 11 percent, respectively. Looking at the charts you will notice that in 2019 we certainly had some issues with meeting cattle TDN requirements with first cutting hay. Although many would have been adequate for the last trimester and at calving. In 2020 samples tended to be much better and would have met their nutritional needs for most.

However, for both years some samples still fall short of having high enough levels of energy or protein for the 3 stages of pregnancy in this example. It is also notable that higher TDN levels do not translate into higher protein levels regardless of what time of year the forage was harvested.



No matter how good or bad of a forage harvest season we have. It is extremely beneficial for producers to collect forage samples. Regardless of what specie of livestock you have, knowing what the quality of forage you are feeding is well worth the costs of the sample.

Analyzing Forage Quality to Meet the Nutritional Needs of the Beef Cow

The third session of the 2021 Ohio Beef Cattle Management School was hosted via ZOOM by the Ohio State University Extension Beef Team on February 1st. During that third session the focus shifted to preventing storage losses in harvested forages, analyzing harvested forage quality, and meeting the nutritional needs of the cattle being fed. To begin the first segment from that evening, OSU Extension Beef Field Specialist Garth Ruff introduced Extension Educator Ted Wiseman and his presentation found below in its entirety on forage quality analysis and meeting the nutritional needs of the cow.

Precision Technology for Grazing

By: Jason Hartschuh, OSU Extension Crawford County
Originally Published in February 4 edition of Farm & Dairy newspaper

Long before humans stepped in and tried to manage livestock's grazing patterns, they naturally precision grazed with their two- or four-inch cutter bar roaming the range. Today we continue to look for better ways to manage our grazing operations to better match the amount and quality of forage growing on our farm to our livestock's needs. Some of the new technology being developed around the world include aerial based pasture yield and quality monitoring, GPS synced pasture measurement tools, and animal-based monitoring. Monitoring pasture growth and livestock grazing patterns increases farm profitability through many channels such as weed control, forage yield improvements, better nutrient distribution, and decreased erosion.

One monitoring system that has been rapidly advancing in the last few years is the use of unmanned aerial systems, UAS, to monitor pasture. Utilizing cameras mounted on the UAS allows us to monitor pasture yield, forage nutritional quality, and plant fertilizer needs. These systems can also help us determine areas with weed control challenges and areas that may need reseeded. While it is not as simple as just flying the pasture to monitor quality the first step is to have the right types of cameras and camera view angles on your UAS. Through using photo processing software, a multispectral camera combined with a RGB camera will allow for pasture monitoring. These images then must be calibrated through local ground truthing of yield estimates. The best yield results come from measure plant height, quality, and forage density. To do this your images will need to be both a straight down surface view and more of a side view. This system is being developed in areas with mostly pure grass pasture and has many challenges with our mixed species pastures. The high resolution of UAS imaging though will allow for machine learning to eventually help solve this problem through identification of plant species in your pastures. This will allow for various forage yield calibration curves to be used throughout the pasture based on plant species present in different areas. Using information on plant species and biomass is showing an ability to accurately estimate both forage crude protein and digestibility. Using UAS mapping to monitor pasture growth and determine areas for fertilizer application have shown on average a 30% savings in nitrogen needs. The site-specific application on nitrogen based on UAS sensor monitoring has increased nitrogen use efficiency by 368%.



Another system coming from New Zealand to monitor pastures is the C-Dax pasture meter which is available in both an autonomous version and a pull type version. The pull type version behind an ATV can cover 168 ac/hr. This system uses GPS and onboard sensors to map pasture yield like a combine yield monitor. The autonomous version will traverse your pastures based on the path you draw on a computer user interface without and daily intervention.

One other system that can be used to monitor pasture yield with more precision than previously available tools is a Micro-sonic rising plate meter. In many ways these are like the older ratcheting rising plate meters but are

synced to your cell phone and use GPS to record where each measurement is taken. The Micro-sonic rise plate meter is slightly more accurate than the ratcheting plate meter and allows for easier calibration for your own pasture mixes. The GPS also allows you to return to the same locations to monitor seasonal variation in various areas of your pasture.

By monitoring pasture yield you can do a better job of matching your livestock's needs to your pastures ability to produce forage. The power of data on pasture yield and quality can improve your operations profitability. Through better monitoring of pasture growth, you are better able to utilize your forage production often decreasing the amount of baled forage you need. Your livestock's performance can also often be improved through better grass monitoring to know when supplemental nutrition is needed. Pasture monitoring is also a useful tool for determining how new management practices effect your pasture. Some of the management practices you may want to monitor to determine effects on your farm include nitrogen application, liming, phosphorous, potassium application, reseeding, and various species selection for your pastures.

Resource Kit Available for Those Exploring a Meat Processing Business

Source: <https://u.osu.edu/beef/2021/02/17/resource-kit-available-for-those-exploring-a-meat-processing-business/>

This "Tool Kit" is designed to be intuitive as entrepreneurs move through the business planning process. A team of Ohio State business and meat science specialists have compiled a **Meat Processing Business Tool Kit** for people who are exploring the meat processing business. Designed as a decision making aid for people exploring investing in or expanding a meat processing facility, this online tool kit can help entrepreneurs evaluate the business and navigate business planning. The Meat Processing Business Tool Kit may be found at: <https://southcenters.osu.edu/meat-processing-business-toolkit> on the OSU South Centers webpage.

Cold Stress and Beef Cows

by: [Steve Boyles](#), OSU Extension Beef Specialist

Source: <https://u.osu.edu/beef/2021/02/17/cold-stress-and-beef-cows/>

Factors that create stress during the winter months are cold, wind, snow, rain and mud. The primary effect on animals is due to temperature. All these factors alter the maintenance energy requirement of livestock. Maintenance requirement can be defined, as the nutrients required for keeping an animal in a state of balance so that body substance is neither gained or lost. An interesting thing to note is that while energy requirements increase, protein requirements remain the same.

Some published sources contain nutrient requirements for beef cattle that include guidelines for adjusting rations during winter weather. Even without published sources, competent livestock producers realize the need for more feed during cold weather. Make sure that water is available. If water is not supplied, cattle will reduce feed intake.



Daily dry matter intake of beef cows with respect to lower temperatures

Temp, F	< 5	5-22	22-41	59-77
Intake, % Change	1.16	1.07	1.05	1.03

The metabolic response to the stimulus of cold involves practically all the systems of the body. The striated muscles shiver, the heart beats faster, breathing becomes deeper, urine flow is increased and the sympathetic and pituitary controlled systems are activated so to elevate biological oxidations (energy expenditure or heat production) in all tissues. The result is an increase in the cow's requirements for energy.

Spring calving cows, and particularly heifers, in poor body condition are at risk for calving problems. The result may be lighter, weaker calves at birth, which can lead to a higher death loss, and more susceptibility to things such as scours. Animals in poor condition before calving, provide inferior colostrum and lower milk production. This can lead to lighter weaning weights or fewer pounds of calf to sell. Females that are in less than desirable body condition at calving are slower to return to estrus. Body condition at calving affects the current calf crop (milk production) and next year's calving date (rebreeding date). For more on this, see [Body Condition Scoring and Effect on Reproduction](#)

In most years hay and stockpiled forage can adequately provide the needed nutrients, but it can vary widely and should be tested to make sure it is adequate. Learn more about forage testing at: [Forage Sampling Hay Bales](#)

There is a range of temperature where cattle are neither too hot nor too cold and their performance is optimal. This temperature range is called the thermoneutral zone. It is the temperature range where the fewest nutrients are needed to maintain bodily functions. For cattle the lower temperatures of the thermoneutral zone are shown in Table 1. All of the critical temperatures listed are effective ambient temperatures, which basically means the wind chill temperature is used if the cattle are not sheltered. The critical temperatures also take into consideration the insulating ability of the cattle, as shown by the change between a wet and dry coat. Typical hair depths are .1 inches for summer and .3 to .5 inches for winter.

Estimated Lower Critical Temperatures for Beef Cattle *

Haircoat Description	Lower Critical Temperature
Summer Coat or Wet	60 degrees F
Dry Fall Coat	45 degrees F
Dry Winter Coat	32 degrees F
Dry Heavy Winter Coat	19 degrees F

* From Brossen, R. & Ames D. "Winter Stress in Beef Cattle" Cattle Producer's Library. CL760.

As you can see from the table above, if we have a choice, snow is preferred to a cold rain. We lose what is called "air insulation" in cattle that get wet versus those that are out in the snow. The air pockets between hair fibers are a source of insulation. We lose this insulation when hair gets matted down in a cold rain. The result is that the Dry Winter Coat goes from having a critical temperature of 32 degrees F to about 59-60 degrees F. From several studies it is estimated that for every one degree below the critical temperature a cow's energy requirement (TDN) increases 1 percent. It is also estimated that for every ten degrees below the critical temperature the digestibility of the ration decreases by 1 percent. This means that when the temperature drops below the critical temperature the cattle need to be fed better. It may be that more or better hay needs to be fed

Example of Effect of Temperature on Energy Needs

Effective Temperature	Extra TDN needed	Extra Hay Needed (lbs/cow/day)	Extra Grain Needed (lbs/cow/day)
50 F	0	0	0
+30 F	0	0	0
10 F	20%	3-4 lbs	2-2.5 lbs
-10 F	40%	7-8 lbs	4-6 lbs

It has been suggested that an energy supplement level that would minimally affect forage intake would be .7% of animal body weight. However, level of grain supplementation can vary with forage quality. Also, see this, <https://u.osu.edu/beef/2019/01/30/winter-feeding-beef-cows/> Besides cold weather effecting cattle performance producers have another thing to consider during winter, mud. Depending upon mud depth, it is estimated that it can increase the maintenance requirement from 7-30%.

OSU scientists Nickles, Relling and Parker observed 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. To read further on these results you can click on this link: [The Cost of Mud to Beef Cows](#)

Summary Multi-State Soybean Research

By Dr. Laura Lindsey

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-04/summary-multi-state-state-research-soybean-row-width-planting>

With funding from the United Soybean Board, soybean agronomists across the US came together to summarize soybean row width, planting date, and seeding rate research trials. (Ohio-specific research trials were funded by Ohio Soybean Council.) Here's what we found:

Row width: Soybean row width varies across the US. In Ohio, most farmers plant soybean in 7.5, 15, or 30-inch row widths. Across the US, narrow rows (7 to 15 inch) out-yielded wide rows (≥ 30 inches) 69% of the time. Narrow rows tend to out-yield wide rows due to earlier canopy closure which facilitates light interception and drives photosynthesis. For the full report on row spacing: https://soybeanresearchinfo.com/wp-content/uploads/2021/02/FINAL-2700-002-20-Row-Spacing_Science-for-Success-Dec-22_v1.pdf



Planting date: The date of planting has more effect on soybean grain yield than any other production practice. In many instances, this means planting soybean as early as field conditions allow, but generally at or after the Risk Management Agency (RMA) replant crop insurance dates begin. In Ohio, we estimate a yield reduction of 8% when planting soybean on May 31 compared to May 1. Although, this reduction can vary (or become minimal) depending on rainfall during the R3 to R5 growth stage. For the full report on planting date: https://soybeanresearchinfo.com/wp-content/uploads/2021/02/FINAL-2700-002-20-Planting-Date_Science-for-Success_Dec-22_v3.pdf

Population Density: Soybean plants respond to their environment through branching and can produce maximum yields at relatively low plant densities (plants per acre). For normal planting dates in the Midwest, generally 100,000 to 125,00 plants per acre is required to achieve maximum yield. (A higher population density is needed as soybeans are planted into June and July.) For the full report on population density: https://soybeanresearchinfo.com/wp-content/uploads/2021/02/FINAL-2700-002-20-Seeding-Rate_Science-for-Success_Dec-23_v1-1.pdf

Interested in more? Soybean agronomists, Dr. Shawn Conley (University of Wisconsin- Madison), Dr. Seth Naeve, (University of Minnesota), and Dr. Rachel Vann (North Carolina State University) will be discussing these topics during a Planting Considerations webinar on Friday, February 19 at 12:45-1:45 PM. Click here to register: <https://www.eventbrite.com/e/science-for-success-soybean-planting-considerations-tickets-140292814585?utm-medium=discovery&utm-campaign=social&utm-content=attendeeshare&aff=escb&utm-source=cp&utm-term=listing>

Updated Tri-State Fertilizer Recommendation Webinar

by: Ed Lentz and Eric Richer, OSU Extension

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-04/updated-tri-state-fertilizer-recommendation-webinar>

A virtual walk through the Updated Tri-State Fertilizer Recommendations for Corn, Soybean, Wheat, and Alfalfa will be offered on February 23 at 8:30-10:00 a.m. and again at 7:00-8:30 p.m. Private and commercial fertilizer recertification One-hour credit will be offered to those who participate during the 'live' programs. Each participant will receive in the mail a copy of the Tri-State Fertilizer Recommendations; hardcopy may not arrive prior to class. Cost for the program is \$15. Register and pay for the program at the following link: https://osu.az1.qualtrics.com/jfe/form/SV_abl3hg2w8MFWmou



The zoom link for the program will be sent to your email one day before the webinar. Instructors and contacts for the program include Eric Richer – 419/337-9210, richer.5@osu.edu and Ed Lentz – 419/422-3851, lentz.38@osu.edu

Health and Safety Recommendations for On-Farm Grain Bin Facilities

By Wayne Dellinger and Dee Jepsen, OSU Extension

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-04/health-and-safety-recommendations-farm-grain-bin-facilities>

In the ten-year period from 2009 to 2018 Ohio had 9 fatalities in grain handling and grain storage facilities. Five of these fatalities were from suffocation and 2 were from falls from the structure, while the others involved auger entanglements. Purdue University reported 38 grain entrapments across the U.S. in 2019. Twenty-three of these entrapments resulted in a fatality.

February 21st begins Nationwide Insurance Grain Bin Safety Week. Being the season when dry grains are being hauled to market and bins are being emptied, it is appropriate to provide winter safety reminders for the primary concerns at your on-farm storage facilities.



For respiratory protection, an N95 mask as a minimum is recommended. These items do what they are designed to do – keep 95% of the respirable grain dust from entering your nose and mouth. The COVID-19 pandemic has made it tough for some farms to find a supply of N-95's, but as essential workers, farmers need to access and wear this protection while at working at their bins. The N-95 will also help prevent inhalation of any vomitoxins present within the corn. Another respirator that may be easier to find is the P-100. These respirators have a longer life-span than the N-95's and are more readily available. To protect against vomitoxins and other molds, use a High Efficiency Particulate Air (HEPA) cartridge with your P-100.



Entrapments or suffocation may occur in different ways. In flowing grain, the farmer may be drawn down into the funnel and become entrapped. Grain may also crust or bridge on the top, leaving a void underneath. When this "bridged grain" collapses under the weight of the workers, they fall through and are covered in a matter of seconds. Grain may also accumulate on the side of the bin. This is particularly noticed in bins with moldy grain. As workers try to dislodge the hanging material, they can be crushed like an avalanche. Avoiding entrapment starts with having a plan. It is recommended that all work be performed outside the bin – this eliminates the risk of entrapment. If a worker must enter a storage bin, never enter alone. Always have a

second person remaining outside the point of entry. Prior to entry, turn off any electrical equipment and lock it out so that it cannot re-start while workers are inside. Consider installing a ladder on the inside of the bin to facilitate an emergency exit.

Consult with your local first responder units. It is a good idea to keep your local first responders involved with your operation. Invite them out for a tour and discuss resources available and potential scenarios that may evolve. Also talk to your fire and EMS units about their capabilities to respond to a grain bin emergency. Ask if they have rescue tubes available (even through mutual aid) if needed for an entrapment situation; and have they received training to know how to work together during an intense on-farm emergency. Training is available for Ohio first responders in several areas. You can contact the State Fire Academy or the OSU Agricultural Safety Program for options you may have in your geographic location. Due to the hazardous nature of stored grain, always keep children away from storage bins, wagons, and trucks.

If you would like additional information or the opportunity to participate in Grain Bin Safety Week, please go to <http://mysightonline.com/grain-bin-safety>. Here you will find videos of real-life entrapment incidents and rescue training along with numerous webinars and articles to assist training employees or refreshing veteran workers on the farm.

ODA to Offer Pesticide Testing in Coshocton County

OSU Extension in Coshocton County is pleased to announce the Ohio Department of Agriculture will be hosting pesticide and fertilizer applicator testing sessions in Coshocton County on March 17 and April 14 from 8:00 to 5:00 p.m. each day. These exam sessions will allow individuals to take a private or commercial pesticide applicators examination.

The testing will be held in Room 145 in the Coshocton County Services Building with COVID-19 safety protocols enforced. Pre-registration is required and can be made by accessing the Ohio Department of Agriculture's Pesticide Regulatory program at:
<https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/pesticides>

More details can also be by calling 614-728-6987 (option 1) or via email at: pesticides@agri.ohio.gov

*“Planning is bringing the future
into the present so that you can do
something about it now.”*

By: Alan Lakein



CFAES

ARC/PLC for the 2021 Program Year

January 13, 1:00-3:00pm
February 25, 9:00-11:00am

Location: Zoom Webinar **Cost:** Free
Register: go.osu.edu/arcplc2021

Join OSU Extension for a webinar on the ARC/PLC decision for the 2021 program year including updates on current market outlook and decision-tool calculators available to evaluate options. There is no cost to attend these meetings, but registration is required.

Register: go.osu.edu/arcplc2021

For more information contact: Mary Griffith, Griffith.483@osu.edu or 740-852-0975

Photo Credit: Elizabeth Hawkins



THE OHIO STATE UNIVERSITY

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A collage of diamond-shaped photographs showing various people engaged in agricultural and community activities. The central image features a woman holding a basket of apples and a young child. Other images show people working in fields, harvesting, and interacting with animals.

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<http://go.osu.edu/cfaesdiversity>.

Webinars and Field Days

Date & Time	Title & Description	Event Type
Thursday, January 14, 2021 12:00-1:00PM	Farm Income Tax Update - Barry Ward, OSU Extension This update will arm farm taxpayers with tax information on current critical issues including insight into new COVID related legislation.	Webinar
Thursday, January 28, 2021 12:00-1:00PM	Cooking with Cast Iron – Christine Kendle, OSU Extension Are you not sure what pan to use? How to season it? How you should care for your cast iron cookware? This class is for you!	Webinar
Thursday, February 11, 2021 12:00-1:00PM	QPR (Question, Persuade, Refer) Suicide Prevention – Panel QPR includes how to “ask a question to save a life,” recognizing warning signs, and referring for help.	Webinar
Thursday, February 25, 2021 12:00-1:00PM	Insurance - Get Covered! – Kim Davis, Kim Davis Insurance Agency, LLC Just because you pay an insurance premium doesn't mean you're covered for everything! Don't miss this fun, interactive session discussing all types of insurance.	Webinar
Tuesday, March 2, 2021 5:30-8:30PM	Hands-On Tractor Operation Skill-Builder – Dee Jepsen, Ohio State University Examining the utility of the compact tractor – safety, parts, color coding, hand signals and operation will be discussed in this interactive audience driven session. (May be outdoors weather permitting)	Field Day
Thursday, March 11, 2021 12:00-1:00PM	LOL – Lots of Loans! – Panel Hear from our panel to find the right fit for your needs. Including lines of credit, ag real estate, equipment & building loans/leases, home loans, home equity loans, youth loans, etc.	Webinar
Thursday, March 25, 2021 12:00-1:00PM	The Mystery of Fruit Tree Pruning – Paul Snyder, OARDC Secrest Arboretum This session covers the basics of how and when to prune fruit trees, highlighting the most common backyard fruit tree, the apple tree.	Webinar
Tuesday, April 6, 2021 5:30-8:30PM	Soils and Sustainable Agriculture —Erika Lyon and Heather Neikirk, OSU Extension and Clint Finney, NRCS Jefferson/Harrison What is sustainable for you? Dig into improving the health of your soils and the basics of soil testing services and kits. Explore sustainability and stewardship practices and opportunities for utilization in small farm animal and plant-based enterprises.	Field Day
Thursday, April 8, 2021 12:00-1:00PM	Bury Seeds, Not Stress —Sarah Noggle and Bridget Britton, OSU Extension When you live where you work, there are stressors that can go unacknowledged. Agriculture life brings unique challenges to us personally and professionally. Join us as we identify what makes us unique and talk about coping strategies.	Webinar
Thursday, April 22, 2021 12:00-1:00PM	Reaching Your Educational Goals – Dennis DeCamp, OSU Extension Regardless of age, educational opportunities are always available. Explore options for obtaining and funding education to meet your goals while maintaining a balanced life.	Webinar
Tuesday, May 4, 2021 5:30-8:30PM	Raising Livestock on 5 Acres or Less – Sandy Smith, OSU Extension So you have some land and you want some extra income or a supply of food for your family. This session will investigate all of your options and possibilities.	Field Day
Thursday, May 13, 2021 12:00-1:00PM	Veterinarians: Building a Relationship & Knowing When to Call - TBA A working relationship with your veterinarian can teach you when it's appropriate to try something at home vs. having them out on a call to improve your farm's husbandry & production.	Webinar
Thursday, May 27, 2021 12:00-1:00PM	He Said, She Said: – Emily Marrison, OSU Extension Women in agriculture often work with men in agriculture. Explore ways to improve interpersonal communication for more productive work settings and peaceful home environments.	Webinar

Cancellation Policy: In-person sessions may be cancelled due to university, state or local guidelines on group events. The event will not be rescheduled. No registration fees will be refunded.