BEEF PRODUCTION WEBINARS...sponsored by OSU Extension will be held in January, February, March, and April. Please see below for topics, dates, and registration information.

FERTILIZER PRICE AND AVAILABILITY...are continuing concerns. I encourage you to have conversations with your suppliers, get your soil samples up-to-date, and review guidelines in the OSU Extension *Tri-State Fertilizer Recommendations for Corn, Soybean, Wheat, and Alfalfa*. This publication can be purchased or downloaded at no cost by visiting: [https://extensionpubs.osu.edu/search.php?search_query=974&section=product](https://extensionpubs.osu.edu/search.php?search_query=974&section=product).

BEEF CATTLE PRICE OPTIMISM...continues into 2022, as described in this OSU Extension Beef newsletter: [https://u.osu.edu/beef/2022/01/05/cattle-markets-in-2022/#more-11973](https://u.osu.edu/beef/2022/01/05/cattle-markets-in-2022/#more-11973).

Using a simple average of the weekly 5-area averages, fed cattle prices averaged about $138 per cwt in December 2021 (the full monthly weighted average report hasn’t been released yet and could be a little different). This is sharply higher than the monthly weighted average for December 2020 which was about $108 per cwt. For reference, there has been only one month (May 2017) that topped $138 since mid-2015.

Cattle futures contract prices for 2022 traded on CME reflect the optimism for higher prices. Live cattle futures quotes are around $144 per cwt for April and $138 for the June and August
contracts. Feeder cattle futures prices are also much stronger with spring contracts in the mid $170 range and summer contracts topping $180 per cwt.

The start of a new year is a good time to consider risk management opportunities that might be useful at some point during the year. Even with the optimistic outlook for 2022, there are (of course) risks and headwinds that could impact markets. Current price expectations may offer pricing opportunities for producers looking to manage price risk. Whether that be through using futures, options, or USDA’s Livestock Risk Protection (LRP), there are tools available to offload some price risk. Just like with all risk management decisions, the time to think about it is before you might need it.

May 2022 Feeder Cattle Futures Contract Price

<table>
<thead>
<tr>
<th>CME daily closing prices in dollars per CWT</th>
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<tbody>
<tr>
<td>$180.00</td>
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Chart: Josh Maples • Source: CME • Created with Datawrapper


A Microsoft Excel spreadsheet has been developed to support nutrient management education programs provided by Ohio State University Extension and for users who want to generate their own recommendation or compare recommendations provided to them to the Tri-State Fertilizer Recommendations for Corn, Soybeans, Wheat, and Alfalfa, 2020. The spreadsheet is designed to be compatible with Excel version, Excel 1997-2003 or later.
The tool generates recommendations for the following crops:

1. Corn
2. Corn-Silage
3. Soybeans
4. Wheat (Grain Only)
5. Wheat (Grain & Straw)
6. Alfalfa
7. Grass Hay
8. Grass/Legume Hay

Overview of spreadsheet features:

- There are 21 data lines.
- Data can be copied from another spreadsheet or within the spreadsheet.
- User controls whether recommendations are build/maintenance or maintenance only for phosphorus (P) & potassium (K) recommendations.
- User can select when a field the critical level used for corn/soybean rotations or wheat, alfalfa, or grass legume hay for P recommendations.
- Can select a shorter or longer buildup period than standard 4 year for P & K.
- P & K recommendations are displayed with buildup and maintenance requirements separately.
- Total fertility need can be determined for a 1-, 2- or 3-year application on P & K Recommendation page.
- User can determine total cost of P & K fertilizer needed to meet the nutrient recommendation.
- Lime recommendations are developed using target final soil pH and tillage depth.
- User can compare cost of two lime sources.
- User can determine total cost of Lime needed in the recommendation developed.

The spreadsheet is available at: https://go.osu.edu/ohiofertilitytool
A printed User Guide is available at: https://go.osu.edu/ohiofertilitytoolguide
A video demonstration at: https://go.osu.edu/ohiofertilitytoolvideo

TEN NEW YEARS’ RESOLUTIONS...for beef producers are provided by Dr. Michelle Arnold, University of Kentucky Extension Veterinarian, in this OSU Extension Beef newsletter: https://u.osu.edu/beef/2022/01/12/the-top-ten-new-years-resolutions-for-cow-calf-producers/#more-12007.

“Insanity is doing the same thing over and over and expecting different results.”

We have all heard this phrase, often attributed to Albert Einstein, and it certainly applies when it comes to the health and care of cattle. If you want to improve health and prevent as many problems as possible, think of adopting one or more of the following resolutions.

In 2022, I resolve to . . .
1. **Improve the water the cattle drink**: Water is the cheapest and most readily available nutrient, but it is often the most overlooked. Consumption varies with age, breed, temperature and humidity, stage of pregnancy or lactation, and level of production but can reach as high as 25-30 gallons per day during hot weather. Generally, cattle health problems are seldom directly due to what is in the water but rather the decrease in water consumption because of the poor taste and odor. Decreased consumption is just as harmful as not having enough water available. When cattle do not drink enough, feed intake and milk production drop, heat stress worsens, and overall immunity suffers. If cattle are allowed to stand in water sources such as ponds, fecal and urine contamination will decrease water quality and certain diseases (for example, leptospirosis) will spread through contaminated water.

2. **Check the mineral feeder regularly** and keep trace mineral in front of the cattle at all times: This resolution can be challenging, especially in those times when the cattle seem to eat it as fast as it is put out. The keys to using a free-choice trace mineral product are to ensure cattle have access to mineral 100% of the time, use a palatable, quality product and make sure they are consuming it at the expected level. Remember a 50-pound bag of mineral to be fed at 4 ounces per head per day will only last 4 days in a 50 cow herd. If the cows have calves that also eat mineral, a bag may only last 3 days. If cattle are consuming too much mineral, try moving the feeder farther from the water source or mixing in loose salt to slow the consumption rate. Mineral feeders should not be allowed to be empty for long or cattle will overeat salt or mineral when it is offered again. Provide adequate access for cows and calves, for example 1 mineral feeder per 15 cow/calf pairs. Do not offer additional loose salt, salt blocks, or sources of salt at the same time. Trace minerals, especially copper and selenium, are often far below acceptable levels in cattle without supplementation. The absence of these vital nutrients is a major factor in development of disease. Additionally, grass tetany/hypomagnesemia cases will occur in late winter and early spring if lactating beef cattle are not offered a free-choice, high magnesium trace mineral during that period of time.

3. **Test my hay** before winter and figure out if I need to buy supplemental feed: If hay quality is poor, for example if cut very ripe (late stage of maturity), rained on while curing, and/or baled with enough moisture to support mold growth, supplementing cattle with adequate energy and protein sources will likely be required to meet their basic nutritional needs until grass if available again. Many cows and calves presented for necropsy (an animal “autopsy”) in late winter reveal a total absence of fat and death is due to starvation. This indicates that the hay feeding program did not provide the necessary nutrition for winter weather survival. It is often difficult for producers to realize that cattle can actually starve to death while consuming all the hay they can eat – especially if crude protein levels are in the 3-4% range, and TDN (energy) is <40% – as is common in some late-cut, overmature, rained-on hay. Many producers purchase “protein tubs” varying from 16-30% protein to make up for any potential protein deficiencies but fail to address the severe lack of energy in the diet.

4. **Keep my cows from losing weight**, especially while pregnant: Learn to body condition score cows so you will know where on the cow to look for signs of early weight loss.
Inadequate nutrition severely affects the developing fetus in a pregnant cow. “Fetal programming” of the immune system of the developing calf during pregnancy will not progress correctly without sufficient nutrients and trace minerals. A weak cow may experience dystocia (a slow, difficult birth) resulting in lack of oxygen to the calf during delivery, leading to a dead or weak calf. Calves born to deficient dams have less “brown fat” so they are less able to generate body heat and are slower to stand and nurse compared to calves whose dams received adequate nutrition during the last 100 days of pregnancy. Poor colostrum quality and quantity from protein and energy-deficient dams will not support calf survival and performance. Thin cows will be the last ones to rebreed.

5. **Work with a veterinarian to examine my herd vaccination program**: Cattle herds are unique entities with different risks for disease on every farm so working with a veterinarian is your best bet to finding the right vaccines for the herd. The question of whether to use modified live or killed vaccine in adult cows is not an easy one to answer. Modified live vaccines (MLVs) offer better and more effective pregnancy protection but can impact conception rates if given too close to breeding season. In addition, MLV vaccines can cause abortions if given to pregnant cattle without strict adherence to label directions. Killed vaccines, on the other hand, are safer but are not nearly as effective at preventing infection. Another option is to administer two doses of MLV vaccine to open heifers (at weaning and a second dose 6 weeks prior to breeding) with annual revaccination using a killed vaccine. This combination stimulates excellent protection without the risk of MLVs although this protective response will diminish after several years.

6. **Improve biosecurity**: Purchasing bulls, cows, or calves, and bringing them home to the farm is likely the single most dangerous time for introduction of new diseases into a herd. Even show animals returning to the farm from events should be isolated to prevent introduction of disease when they re-enter the herd. Any newly purchased animals should be isolated either off the farm or in a well-segregated area for at least 2 weeks (3-4 weeks is better) and observed for any signs of illness. During the period of isolation, a veterinarian should be consulted to appropriately test and vaccinate new arrivals. The best practice is to purchase animals from herds of known health status that will provide a vaccination and health history. Introduction of an animal with a disease such as Johne’s or a BVD persistently infected (PI) animal could have devastating, long-term effects on the health of the cow herd.

7. **Be better prepared to handle problems during labor and delivery**: Checking on cows and heifers close to calving allows early detection of difficulty and intervention if needed during calving. If a cow or heifer is in active labor for 1-1.5 hours and making no progress, calving intervention is indicated. Assist or call for assistance with calving as early as possible, especially with heifers. Make sure calves start nursing after calving, keeping in mind that calves should stand within 30 minutes of delivery and nurse within 30 minutes of standing. If in doubt that the calf will be able to stand and nurse within an hour, make sure the calf is warm and then feed a good quality colostrum replacer, at least 1-2 quarts, within an hour of birth and again before 6 hours old.
8. **Improve my forages**: It is often said that beef producers need to think of themselves as grass farmers because they sell pounds of calf produced by a cow that eats grass and makes milk. The UK Forages website: [http://forages.ca.uky.edu/](http://forages.ca.uky.edu/) is full of easy-to-find, useful information to make pastures more productive. Check out their instructional videos at [https://www.youtube.com/c/KYForages](https://www.youtube.com/c/KYForages)

9. **Keep better records**: It is hard to make well-informed decisions without information. At the very least, every animal should have a readable ID tag and calving dates should be recorded. Other parameters such as calf birth and weaning weights, sex, and dam information help differentiate the poor performing cows from the great ones. Vaccination records should include date administered, vaccine name, lot and serial numbers and expiration dates at a minimum.

10. **Listen to a trusted source for information and stop believing everything you read on Dr. Google**: This is true in much more than beef cattle production. There is a lot of misinformation available, and discernment is becoming a lost art. Veterinarians, Extension agents, and University Extension specialists, among others, can help answer or point you in the right direction when it comes to questions about the health and care of cattle.

**FARM OFFICE LIVE**...is presented by OSU Extension and provides updates on timely farm management, agricultural law and legislation, and agricultural tax issues. The same program will air on January 19 (7pm) or January 21 (10am).

To register, please visit: [go.osu.edu/farmofficelive](go.osu.edu/farmofficelive).
AGRICULTURAL OUTLOOK MEETING...sponsored by OSU Extension with support from the Ohio Corn and Wheat Growers Association, scheduled.

MUSKINGUM COUNTY - FEBRUARY 14, 2022, 9:00 A.M.

Muskingum County Convention Center, 205 N. 5th St., Zanesville

Agenda:
- Barry Ward, Examining *Crop Input Costs & Margins, Land Values, Rents & Tax Implications*
- Peggy Hall, *Ag Law Update*
- Matt Roberts, *Grain Marketing Outlook*
- Carl Zulauf, *Farm Bill 2023*

Registration is required. Call Muskingum County Extension at 740-454-0144 to register.

2022 ARC & PLC DECISION...is discussed in this University of Illinois Farmdoc newsletter: https://farmdocdaily.illinois.edu/wp-content/uploads/2022/01/fdd011122.pdf.

Farmers will again have until March 15 to make commodity title program selections. **Given the current high prices, commodity title payments are not expected from any program option for the 2022 marketing year.** If a change in conditions resulted in payments, those would be received in October 2023, after the close of the 2022 marketing year. Farmers wishing to purchase the Supplemental Coverage Option (SCO) crop insurance policy must select Price Loss Coverage (PLC) as the commodity title choice. **Based on current price projections, Agriculture Risk Coverage at the county level (ARC-CO) will maximize the chance of payment for soybeans, although that chance will be small. The probability of payments is roughly the same for corn and soybeans.**

**Decision Overview**

Farmers have three program options when making their election decisions.
- **Price Loss Coverage (PLC)** is a crop-specific fixed price support program that triggers payments if the marketing year average (MYA) price falls below the commodity’s effective reference price. Payments are made on 85% of historical base acres.
- **Agricultural Risk Coverage at the county level (ARC-CO)** is a crop-specific county revenue program. ARC-CO triggers payments if actual revenue (MYA price times county yield) falls below 86% of the benchmark revenue (product of benchmark price and trend-adjusted historical yield for the county). Payments are made on 85% of historical base acres.
- **Agricultural Risk Coverage at the individual level (ARC-IC)** is a farm-level revenue support program. Like ARC-CO, payments are triggered if actual revenue falls below 86% of the benchmark. If an FSA farm unit is enrolled in ARC-IC, information for all commodities planted in 2022 are combined together in a weighted average to determine benchmark and actual revenues. If a farmer enrolls multiple FSA farms in the
same state, all farm units are combined in determining the averages for actual and benchmark revenues. Payments are made on 65% of historical base acres.

Decisions are made for each FSA farm unit. PLC and ARC-CO are commodity-specific and can be mixed and matched on the same FSA farm or across different FSA farms (i.e. PLC for one commodity, ARC-CO for another on the same FSA farm, or using different programs for the same crop on different FSA farms).

The following sub-section will discuss the PLC and ARC-CO decision for corn, soybeans, and wheat in 2022. This focus is taken as most individuals choose between PLC and ARC-CO. Not many farms are enrolled in ARC-IC. Even if enrolling in ARC-IC, having some understanding of the PLC and ARC-CO alternatives will be valuable in making decisions.

**Corn**

The effective reference price for corn in 2022 is $3.70 per bushel. If the 2022 Market Year Average (MYA) price falls below $3.70, PLC will make a payment. The 2022 market year for corn will begin in September 2022 and end in August 2023.

Currently, expectations are for much higher MYA prices than the reference price. Evaluations of prices of the Chicago Mercantile Exchange (CME) contract, as well as fall delivery bids, suggest an expected 2022 MYA price around $5.00 per bushel, well above the effective reference price. Based on current market expectations, there is about a 10% chance that the 2022 market year average price for corn would fall low enough to trigger a PLC payment.

ARC-CO makes payments when county revenue is below a county guarantee. County revenue equals county yields times the MYA price, the same price used to determine PLC payments. For corn, the county guarantee equals:

\[ \text{.86 coverage level x MYA benchmark price x county benchmark yield.} \]

The county guarantee and county revenue equations are used to define break-even MYA prices below which ARC-CO will make 2022 payments, given county yield as a percent of benchmark yield (county yield percent). At a 100% county yield percent, county yield equals benchmark yield. At this stage, a 100% county yield percent is a reasonable projection for county yields in 2022.

At a 100% county yield percent, the 2022 MYA price would need to be below the $3.18 break-even price to trigger an ARC-CO payment for corn. This is lower than the $3.70 effective reference price that would trigger PLC payments because of the 86% coverage level used to set the ARC-CO guarantee.

The break-even prices are illustrated for non-irrigated corn in Champaign County, Illinois. Champaign County’s benchmark yield is 222.2 bushels per acre. If Champaign County’s 2022 yield is 222.2 bushels per acre — causing the county yield percent to be 100% — ARC-CO will make payments at MYA prices below $3.18. At a 100% county yield percent, PLC will trigger payments equal to or greater than ARC-CO, at least for reasonably high PLC yields.
A county yield percent of 80% would occur with a 177.76 yield in Champaign County in 2022. In this scenario, MYA prices would need to be below $3.98 per bushel (see Table 1). Here ARC-CO would make payments for prices between $3.98 to $3.70, while PLC would not. At some price below $3.70, PLC would make higher payments than ARC-CO. The exact level would depend on the size of an FSA farm yield.

In our analysis, PLC has a higher chance of making payments than ARC-CO, although both have a minimal chance of making payments. Overall, neither PLC nor ARC-CO payments should be expected for corn. Farmers who wish to purchase the Supplemental Coverage Option (SCO) for corn will need to elect PLC to remain eligible for the SCO coverage.

**Soybeans**

For 2022, the effective reference price for soybeans is $8.40, and the 2022 ARC-CO benchmark price is $9.12 per bushel (see Table 1). Given current market prices, the 2022 expected MYA price is $12.50. There is a 4% chance that the 2022 MYA price could fall below the $8.40 reference price.

Table 2 shows break-even prices below which ARC-CO will make payments. The benchmark yield for non-irrigated soybeans in Champaign County is 69.0 bushels per acre. At a county yield percent of 100% — implying the county yield is 69.0 — the 2022 MYA price needs to be below $7.84 per bushel before ARC-CO makes payments.
An 80% county yield implies a county yield of 55.2 bushels per acre in Champaign County. At that yield, 2022 MYA prices need to be below $9.80 before ARC-CO makes payments. The $9.80 price is well above the $8.40 reference price, indicating that ARC-CO could trigger payments at prices levels that would not trigger PLC payments if yield sufficient yield losses are experienced at the county level.

ARC-CO has a higher probability of making payments than PLC. Note that PLC has not made payments in the past as the MYA price for soybeans has never been below $8.40 since 2014, when the current commodity programs began. Farmers may wish to consider ARC-CO for soybeans because of its higher probability. Still, the probability of payment is not high. Again, interest in SCO coverage for soybeans would require the use of PLC.

Summary
Farmers have until March 15 to revise commodity title decisions. If choices are not changed, farmers will automatically be enrolled in the same option as last year. At this point, commodity title payments should not be expected for either PLC or ARC-CO. Given the low probability of payments with current price projections, farmers may wish to base program selection on risk perception, considering if there is greater price risk or yield risk for the 2022 crop and marketing year. PLC is intended to address price risk while ARC-CO provides revenue protection, which incorporates yield risk.

If you are interested in evaluating alternatives to make an informed decision, please contact me.