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Hello Coshocton County! March is holding true to form with regards to our weather. From beautiful temperatures on Saturday, excessive rain on Sunday, to a beautiful “snow-globe” like snow this morning. It looks as this weather rollercoaster will remain for much of the month.

Congratulations to the Coshocton County Farm Bureau for their excellent Breakfast on the Farm on Saturday. What a great FFA Food Fight challenge by our local FFA Chapters in partnership with Jeff Drennen Ford. In total, 7 trucks were filled with over 5 tons of food which were donated to the Shepherd’s Christian Assembly.

I was very pleased to be part of helping the 2022 class of Leadership Coshocton County explore agriculture yesterday. Thanks to Fender’s Fish Hatchery, Daugherty Farms, and Heritage Vineyard Winery for hosting stops during the day. We also appreciated Deb Bigelow from the SWCD and Jenna Gregorich from the Ohio Poultry Association sharing their expertise. Next week, the youth class will also get to experience all that our great industry has to offer.

I hope each of you have a great and safe week!

Sincerely,

*David L. Marrison*

**Coshocton County OSU Extension ANR Educator**

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COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

## Selecting Your Next Herd Sire

By: [Brooks Warner](#), OSU Extension Educator, Scioto County

Source: <https://u.osu.edu/beef/2022/03/09/selecting-your-next-herd-sire/>

We are in bull sale season and many of you are looking for a new herd sire. Before making sire selections, I encourage you to ask yourself, "What are my operation's goals?" and select your next herd sires with your operation goals in mind. Operations should buy the bulls you need and not the bulls you want.

Wanting to go for the stylish bull, the thickest bull and/or the biggest weaning and yearling weights is easy. However, beauty is (sometimes) only skin deep, and single-trait selection is never a good idea. For most operations, the main goal is profitability, and a few different aspects come together to help you achieve a profitable beef herd. Some of the most important aspects of the profitable beef herd equation are:

- Live calves
- Fertile, easy keeping, productive cows
- Optimal performance at the farm and ranch, in the feed yard, on the rail and on the consumer's plate

Sire selection should be a combination of visual evaluation and expected progeny difference (EPD) data. A deep understanding of EPDs can help you determine which bull is best for your operation.

### Live Calves

Typically, calves born with assistance, such as hard pulls, have a higher death and sickness rate than calves that are born unassisted. Three primary EPDs predict the ability of a sire's calves to be born with unassisted delivery: calving ease direct (CED), birth weight (BW) and calving ease maternal (CEM). Calving ease direct (CED EPD) predicts the percentage of a sire's calves that will be born unassisted, BW predicts the difference in weight of a sire's calves and CEM predicts the percentage of a sire's daughters who will calve unassisted.

### Calving Ease Direct (CED) Example

Bull	CED EPDs
1	+10
2	+18
Difference	+8

Bull 1 should sire calves that are 8% less likely to be born unassisted than Bull 2.

Bull 2 should sire calves that are 8% more likely to be born unassisted than Bull 1.

Comparatively, higher numbers mean more calving ease.

### Birth Weight (BW) EPD

Bull	BW EPDs
1	+1
2	-4.5
Difference	-5.5

Generally, smaller birth weights equal fewer assisted births.

Bull 1's calves should weigh 5.5 pounds more at birth than Bull 2's calves.

Bull 2's calves should weigh 5.5 pounds less at birth than Bull 1's calves,

### Calving Ease Maternal (CEM)

Bull	CEM EPDs
1	+10
2	+18
Difference	-8

Comparatively, higher numbers mean daughters have more calving ease.

Bull 1 should sire daughters who are 8% less likely to have their first calf unassisted than Bull 2.

Bull 2 should sire daughters who are 8% more likely to have their first calf unassisted than Bull 1.

### **Fertile and Productive Cows**

One of the most important traits related to profitability is a cow's ability to get bred in a set breeding season. For a cow to start cycling (be in estrous), it has to be in adequate condition. According to published research conducted by Short et al., the following is the priority use of energy by a cow:

1. Basal metabolism
2. Grazing, other physical activities
3. Growth
4. Supporting basic energy reserves
5. Maintaining pregnancy
6. Milk production
7. Adding to energy reserves
8. Estrous cycling and initiating pregnancy
9. Storing excess energy

You'll notice that cycling and establishing pregnancy is low in the order of priority of energy use. Thus, a cow will milk to her genetic ability before cycling and getting pregnant. Milk is an expensive trait because of the additional energy needed not only to lactate, but also have enough body condition and energy reserves to cycle and breed.

Milk EPDs do not predict the daughter's milk production. Milk EPDs predict a sire's daughter's milk and mothering ability as expressed in his daughters compared with daughters of other sires. In other words, it is that part of a calf's weaning weight that is a product of a cow's ability to milk and mother her calf.

Bull	Milk EPDs
1	+35
2	+20
Difference	+15

The calves born to Bull 1's daughters should weigh 15 pounds more at weaning than those of Bull 2. This estimated weight is from the mother's milk production.

EDITOR's NOTE: Learn more about selecting your next herd sire by participating in the [Bull Buying School](#) in West Union on March 22.

### ***Cattle Input Prices Surge***

By: Josh Maples, Assistant Professor & Extension Economist, Department of Agricultural Economics, Mississippi State University

Source: <https://u.osu.edu/beef/2022/03/09/cattle-input-prices-surge/>

The Russian invasion of Ukraine has led to far-reaching impacts on commodity markets across the globe. In particular, oil and grain prices have surged which contributes to increases in the cost of production throughout the cattle and beef supply chain. Feeder cattle futures prices have dropped roughly \$10 per CWT since mid-February depending on contract (though prices were higher in today's trading).

Near term corn prices have jumped by around a dollar per bushel in the past few weeks. Shown in the chart above, the May 2022 CME corn futures contract closed last week near \$7.50 per bushel. Higher corn prices generally put pressure on feeder cattle prices since feeder cattle and corn are two primary inputs into producing fed cattle. Contracts expiring further in the future have also increased though not at the same magnitude. For example, the December 2022 CME corn futures contract closed last week at \$6.30 which is up about \$0.40 above mid-February.

May 2022 Corn Futures Contract Price

Daily CME Closing Price in dollars per bushel



Chart: Josh Maples • Source: CME • Created with [Datawrapper](#)

Much concern and uncertainty surrounds corn stored and produced in Ukraine. In the February ERS "Feed Outlook" publication, a very interesting special article is included on Ukraine's geography, corn production and exports. You can find the full report [HERE](#) and the special article starts on page 20. The article notes that corn acreage in Ukraine has tripled over the last 15 years and yields have roughly doubled. Much of the corn produced is typically destined for export. The article discusses that Ukraine accounts for about 3.5 percent of global corn production but was forecast to account for about 17 percent of global corn exports.

Cattle prices are caught in the broader uncertainty and market volatility. Many input prices were already high compared to recent years. The severity and length of time that higher input costs will persist are key questions without good answers. Feed costs (among other inputs) will be higher in the near term. Planting season is just around the corner in the U.S. and the amount of corn planted and crop progress will also be important for supply and price forecasts.

## ***Frost Seeding Time is Here***

By: Sjoerd Willem Duiker, Professor of Soil Management and Applied Soil Physics, Penn State University, Zachary Larson, Field and Forage Crops Educator, Penn State University, David Hartman, Extension Educator – Livestock, Penn State University & Dave Wilson, Former Extension Educator – Agronomy, Penn State University

(Previously published online with [PennState Extension: March 2, 2022](#))

Frost seeding is an economical method to establish legume cover crops into small grain stands or to fill in run-down pastures. Frost seeding is an economical way to establish cover crops in the winter in standing wheat or barley or to supplement a thin forage stand. Though not as fool-proof as drilling, it is a reasonably successful practice.

Now is the time to perform this practice as the soil is going through freeze-thaw cycles. This causes a 'honey-combing' of the soil surface which helps to improve seed-to-soil contact. Frost seeding works well on loamy and clay soils that hold water but is not suited for use on sandy or shaley soils that dry out quickly. The best time to perform frost seeding is early in the morning when the soil is frozen, and a thaw is expected during the day. This reduces the chance for soil compaction while providing the desired soil heaving that improves seed-to-soil contact.



The best species for frost seeding generally are small seeded, germinate quickly, and grow well in cool



conditions. Red, white, and sweet clover are the most successful species, while birdsfoot trefoil can also be used for pasture renovation despite slower germination and early growth. And though yellow sweet clover can cause animal health problems due to coumarin content (a blood thinner), it is not likely to cause livestock health issues if it is only a small percentage of a pasture. When seeding legumes, be sure to inoculate them with the appropriate rhizobium so the symbiosis will take place to fix N. In pastures, some non-fluffy grass species such as annual or perennial ryegrass may also be frost seeded. Do not mix grass and legume seed for broadcast application as the legume seeds will throw farther than the grass seeds due to their greater density, which leads to non-uniform seed distribution.

Make every attempt to guarantee uniform coverage by knowing the width of spread and spacing between passes. Recommended species and seeding rates for the two scenarios discussed here are given in Table 1. Seeding rates into small grains are higher because no repeat application is possible, while with pasture renovation frost seeding complements an already established stand and can be repeated next year if not successful. Heavier seeding rates for pasture renovation would be used in thinner stands. It is common to mix clovers for pasture renovation. Red and ladino white clover make a good combination, where you use twice the seeding rate of red clover as white clover (e.g. 2 lbs./Ac. red clover + 1 lbs./Ac. white clover up to 6 lbs./Ac. red clover + 3 lbs./Ac. white clover).

Table 1. Species and seeding rates (pure stands, lbs./Ac.) for frost seeding into winter small grain or for pasture renovation.

Species	In small grain	Pasture renovation
Red clover	10-15	4-8
Yellow blossom sweet clover	15-20	5-10
White, ladino clover	NR	2-3
Birdsfoot trefoil	NR	4-6
Perennial or annual ryegrass	NR	4-6

NR = not recommended.

Frost seeding will likely be most successful in pastures with bare spots or those that are overgrazed. Besides relying on the freeze-thaw action at seeding, you can also use grazing animals to tramp in the seed shortly after broadcasting in late winter. This practice may be especially helpful for improving seed-to-soil contact if a thick thatch layer that would compromise frost seeding success is present. However, don't turn out animals in wet conditions and cause soil compaction. If you miss the best 'window' for frost-seeding, clover seed will remain viable in the soil and much of it will likely grow when the conditions are right. If you notice your stand is not adequate in summer, you can selectively no-till legumes and/or grasses in late summer to fill in thin spots to resolve any lingering issues.

## **Udder Health in Ewes**

By: Isabel Richards, Veterinary Science – South Africa and owner/operator of Gibraltar Farm

(Previously published with the [Eastern Alliance for Production Katahdins \(EAPK\): February 28, 2022](#))

Source: <https://u.osu.edu/sheep/2022/03/08/udder-health-in-ewes-mastitis-udder-scores-and-management/>

Ewes only have two teats and hopefully raise at least twin lambs, so maintaining healthy udders and culling ewes with udder problems is important to minimize lamb losses and bottle lambs while ensuring optimal growth of lambs on your farm. Mastitis leads to lower weaning weights in lambs of affected dams, takes time and money for treatment, as well as slowing down genetic progress due to forced culling of ewes. Rates of mastitis are variable across different farms. It is important to keep track of the percentage of ewes that get mastitis each year or are culled for lumpy udders or poor milk production. You can then intervene as soon as you start seeing an increase in cases, and can track the success of interventions if you do have an issue with mastitis on your farm. Management as well as genetic selection (udder conformation) can also be used to improve udder health in your flock.

## **Mastitis**

Mastitis is an infection/inflammation of the udder and can be either clinical (you see abnormal milk, swollen udder, sick ewe) or subclinical (milk and ewe look normal but you can culture bacteria from milk, there are white blood cells in the milk and lambs just do not grow as well). If you are seeing a lot of mastitis on your farm or if you are starting to see increased rates, it is important to culture milk from affected ewes so you can get a better idea of how to best manage the problem.

### **Clinical Mastitis**

**Mild** – You strip milk out of the udder and it looks abnormal (chunky, gray), but there is no swelling or redness of the udder and the ewe looks perfectly normal. You are probably checking this ewe because you caught her lamb stealing. This will likely progress to more severe disease if you do not intervene. It is important to empty all the milk out of these udders multiple times a day as you are removing bacteria along with the milk. The longer bacteria sit in the udder the more they multiply and increase inflammation. Inflammation is damaging to the milk-producing cells and the more inflammation associated with mastitis the higher the impact on milk production for the rest of the ewe's lactation. Intramammary infusions of antibiotics work well but need to be instilled into an empty udder to work properly. There are no intramammary antibiotics approved for sheep so this is extra label use. Make sure to consult with your veterinarian for proper use.

**Moderate** – The ewe's udder looks abnormal, red, and swollen. The milk is abnormal but the ewe does not have a fever. You either noticed the abnormal udder, noticed her lamb stealing, or noticed the ewe limping on a rear leg. It is still very important to empty the udder. Antibiotics and anti-inflammatory medications are needed. This can be treated with intramammary or injectable antibiotics. Once again, be sure to consult your veterinarian as there are no antibiotics approved for sheep specifically for mastitis. You are likely to see a decrease in milk production for the rest of the lactation if disease progresses to this point before you start treatment.

**Severe** – The milk and udder look very abnormal. The ewe has a fever and she is sick. You noticed a sick ewe, she is probably limping or unwilling to get up. These ewes need aggressive treatment or they will die. The worst case of this is gangrenous mastitis (blue bag) where toxins produced by the bacteria cause blood clots in the vessels supplying the udder and parts of the udder die. Parts of the udder feel cold and the skin is pale, blue, or purple and can extend onto her belly. If the ewe survives the initial few days, she will get better but the affected part of her udder will eventually slough off, usually taking weeks or months to heal. During this time, she will be susceptible to fly strike and have an open wound where the dead tissue separated from the rest of her udder. She will likely not have milk for the rest of this lactation and only the unaffected part of her udder will be available to produce milk in future lactations. On my farm I will treat ewes aggressively for a day or two to see the extent of her udder that is affected and unless it is a really small area, I will humanely euthanize her.

### **Subclinical Mastitis**

This has been studied extensively in dairy animals but few studies have been done in ewes that suckle lambs. Somatic Cell Counts (SCC), California Mastitis Tests (CMT), and milk cultures are used to quantify this. SCC measures the numbers of white blood cells in milk and has to be done in a laboratory. In general sheep have higher SCC than cows, but levels higher than 400,000 are generally accepted as indicative of mastitis. A CMT can be done on-farm. A small amount of milk is mixed with a reagent and a gel forms if there are a lot of white blood cells in the milk. CMT is scored from 1+ to 4+. In sheep, a score of 3+ or higher indicates mastitis. Milk cultures are done in a lab where the milk is incubated on bacterial growth media. Healthy milk should be sterile and will not grow any bacteria. It appears from multiple studies that a lot of ewes that suckle lambs have positive milk cultures, even if they do not have high SCC or positive CMT tests. Ewes older than 5 years had 13% higher SCC than younger ewes in one study.

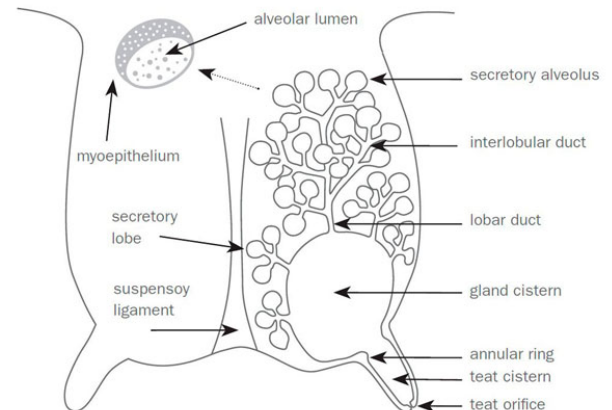
Subclinical mastitis is important because these are the ewes that you never notice a problem with, but if you palpate udders before breeding, they have lumps or hard udders. They might just lamb with non-functioning udder halves or all of a sudden have a year where their lambs do not grow as expected. Studies have found that ewes with lower SCC reared heavier lambs. A study at MSU found that ewes with 500,000 SCC reared lambs that were 10.6 pounds lighter than ewes with 100,000 SCC. Selecting for good udder conformation and having good mastitis prevention management should help to reduce subclinical as well as clinical mastitis.

### Udder Anatomy

The udder is composed of milk producing tissues as can be seen in the figure above. Surrounding and interspersed within this tissue are fat, blood vessels, lymphatic tissue, nerves, and connective tissues. A normal udder feels soft and looks symmetrical.

Having a bout of mastitis can severely affect a ewe's milk production. If a lobar duct is blocked by a blood clot, pus, or swelling due to inflammation, the whole section of udder drained by that duct will dry off as the milk that is produced there cannot exit the udder. The buildup of pressure will cause those alveoli to stop producing milk. If you do not milk out the ewe that you are treating for mastitis the same thing will happen in the whole udder.

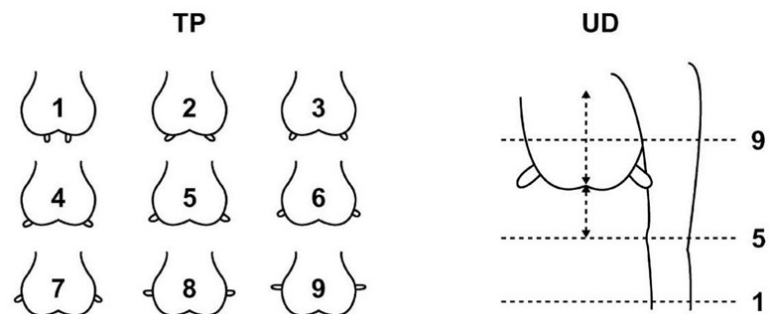
Ewe lambs are born with well-developed cisterns and teats as well as some of the larger ducts. But most of a ewe lamb's alveoli and interlobular duct development occurs during the first few months of life, the majority happening when a ewe lamb is 2-4 months old. The fat and connective tissues of the udder develop at the same time. Overfeeding during this time can lead to preferential growth of fat and connective tissue in the udder over milk producing tissues. Two studies have found that a lower growth rate in ewe lambs between 4-20 weeks of age was associated with better milk production during their first lactation.



### Udder Conformation

A lot of research on udder conformation has been done in dairy sheep to find the best conformation for milking.

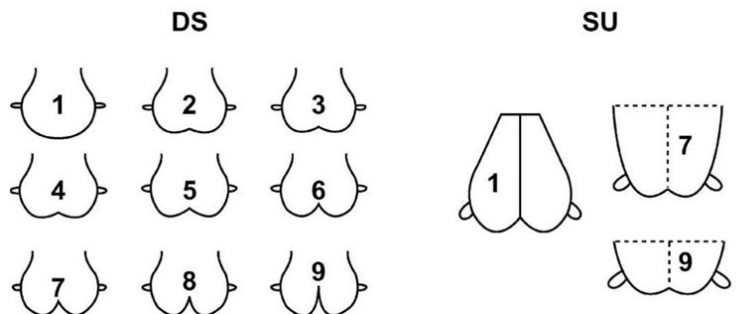
Ewes that suckle lambs have different considerations since they are "milked" by the lambs much more frequently than dairy animals so they do not need to store large volumes of milk. Milking machines require different teat placement than what is ideal for suckling lambs. There are certain udder conformations that predispose to mastitis in dairy animals that are equally applicable to ewes suckling lambs. Udder conformation is heritable so selection can be used to minimize mastitis risk.



### Udder Depth (UD)

Udder depth (UD) is the distance between the udder cleft (where the suspensory ligament pulls up the udder in between the two halves) and the body wall. A score of 5 is where the udder cleft is in line with the ewe's hocks, a score of 1 is a very low hanging udder that is close to the ground. Ewes with udder scores lower than 5 (udders that hang down lower than a ewe's hocks) are more prone to mastitis. A study in the UK found that for every cm ( $\frac{2}{5}$  of an

inch) increase in UD a ewe's Somatic Cell Count (SCC) increased by just under 10%. Selecting against deep udders can have a protective effect against mastitis. In dairy sheep there is a negative correlation between milk yield and UD because a ewe has to have a large udder to store large volumes of milk since she is only milked once or twice a day. This correlation should not be a problem for ewes suckling lambs as they only have to store milk for an hour or two at most as their lambs drink small amounts frequently throughout the day.



## **Teat Placement (TP)**

Teat Placement (TP) is the distance between the lowest part of the udder and where the teat attaches to the udder and is scored on a scale of 1-9. Teats attached to the lowest part of the udder that hang straight down are scored as a 1, while teats attached above the widest part of the udder that point straight out to the side are scored as a 9. The ideal teat placement for ewes suckling lambs is a 5 (as can be seen in the “Anatomy of the Udder” picture above). A study in the UK found that ewes with TP scores of 5 weaned the heaviest lambs when compared to ewes with lower or higher TP scores. They also found more bite wounds (from lambs) on teats of ewes with TP scores higher and lower than 5. The lower the teat placement is on the udder, the easier it is to fully empty the whole cistern when machine milking. Ewes with TP-1 udder scores are great for milking machines but it is harder for lambs to find these teats and they have to bend them out (kinking the teat cistern and decreasing milk flow) in order to drink. TP-9 udders are hard to empty for machine milking as well as for lambs. These teats are also hard to find as they sit right against the ewe’s inner thigh. Chafing and teat irritation are also a problem with teats in this area as they constantly rub against the ewe’s inner thigh, unless she has a pendulous udder.

## **Degree of Separation (DS)**

The suspensory ligament is very important. It functions to keep the udder close to the body wall and prevent mechanical trauma to the gland and teats. A strong suspensory ligament keeps the udder from swinging side to side and bumping against the ewe’s legs when she walks. The depth of the cleft between the two udder halves is an indication of the strength of the suspensory ligament. The Degree of Separation (DS) between the two udder halves is used to measure this. More separation is better, so 1 is the worst score and 9 is the best. The deeper a ewe’s udder depth (UD), the more important a higher DS score is.

## **Degree of Suspension (SU)**

Degree of Suspension of the udder (SU) is the ratio between the width of the attachment of the udder to the body wall and the Udder Depth (UD). Wider attachments are better as they make for a more stable udder with less risk of trauma. A score of 7 is a square udder with the same depth and width, a score of 1 is undesirable and more prone to mastitis.

## **Teat Size**

Teat size is also important. Ewes with shorter and narrower teats are less prone to mastitis. Lambs have trouble suckling from very thick and long teats. A UK study found a 7.2% increase in Somatic Cell Count for each square cm (0.155 square inch) increase in teat size.

In summary, selecting for ewes with UD of 5 or higher, TP score of 5 or closer to 5, higher SU scores and higher DS with shorter and smaller teats should lead to less mastitis and better lamb growth.

## **Management for Improved Udder Health**

### **Environment**

The bacteria that commonly cause mastitis are found on the skin (Staphylococcus and streptococcus), GI tract (E. coli), and respiratory tract (Mannheimia and Pasteurella). Having dry, clean bedding or pasture for ewes to lounge on decreases the exposure of udders and teats to bacteria. Poor bedding quality with a buildup of ammonia predisposes lambs to pneumonia. The bacteria causing pneumonia can infect their dam’s udders when suckling.

Rates of mastitis are lower in ewes on pasture when compared to ewes in confinement. Barns that are bedded more frequently leads to reduced rates of mastitis. Wet bedding offers a good environment for bacteria to grow so keeping bedding dry is very important.

### **Prevent Lambs from Stealing Milk**

In non-dairy flocks, stealing lambs are one of the biggest spreaders of infectious mastitis in the ewes. An affected ewe’s lambs suckle from her, but she kicks them off and because they are still hungry, they then try to suckle from other ewes. Even if they are not very successful at it, they can deposit the mastitis causing bacteria on a large proportion of the other ewes’ teats. When you see lambs stealing, check their dam’s udder



and separate her and her lambs from the flock to minimize transmission. Bottle feed the lambs if needed. If the milk is not very abnormal, the ewe allows the lambs to suckle and they are willing to drink, keeping the lambs on the ewe can help a lot during treatment as removing milk helps to flush out the bacteria and inflammatory cells. Milking out the ewe multiple times a day is necessary if her lambs are not doing the job.

Ewes with teat injuries will prevent their lambs from drinking. Look for chafed skin, skin infection, or soremouth lesions on teats. Treat appropriately and isolate her and her lambs until you are sure that she is letting the lambs drink. Bottle supplement the lambs if needed.

### **Ewe Nutrition**

Inadequate protein and energy during gestation as well as inadequate energy during lactation has been associated with higher rates of mastitis in ewes. Ideally ewes should lamb in at least a body condition score (BCS) of 3 for optimal milk production. Lambs are more likely to cause trauma to a ewe's udder if they are hungry, and thinner ewes tend to have more traumatic teat injuries from lambs biting them. One study found that lambs reared by a ewe in a BCS of 3 were 2.86 pounds heavier than lambs reared by a ewe with a BCS of 2.5 or lower.

Clinical mastitis, where you see a sick ewe with a visibly abnormal udder and milk, is not the only issue to watch out for. Subclinical mastitis, where you may not notice any abnormality in the ewe but her lambs do not grow quite as well as in previous years or you notice asymmetry of her udder or feel lumps at dry off or pre-breeding udder examination, is equally important.

### **Vaccines**

VIMCO mastitis vaccine is available for goats in the U.S. It is a vaccine against Staph aureus and Coagulase Negative Staph (CNS). It was developed for dairy animals but can have its place on farms with problems with these specific bacteria (in addition to management changes). It is off label use to administer this vaccine to sheep so you will have to work with your veterinarian. Anecdotally, farmers have found that vaccinating their lambs and pregnant ewes against pneumonia has led to fewer cases of mastitis.

### **Culling Ewes with Mastitis**

Ewes that have mastitis in one lactation are more likely to have mastitis in subsequent lactations. Bacteria like Staph aureus can form small abscesses that protect the bacteria from antibiotics and can be very resistant to treatment. If milk cultures identify Staph aureus, culling is recommended to prevent spread throughout your flock. In cows they recommend culling heifer calves out of cows with Staph aureus (if they drank colostrum/milk from the cow) as they have found that they can be infected through consuming the milk and then calve already infected with Staph aureus. Flocks that do not cull for lumpy udders tend to have an increase in rates of mastitis.

### **Dry Off Management**

If you leave lambs with their dams, the ewes will eventually stop producing milk naturally. The more milk a ewe is producing at the time of dry off, the greater the chance that she will develop mastitis. Studies have found a decrease in mastitis when lambs are weaned at 120 days vs 60 days. If you are weaning early and feed ewes concentrate, it is recommended to stop the concentrate about 7 days before weaning. A waxy plug forms in the teat opening shortly after weaning which prevents organisms from entering the udder and causing mastitis. It is best to not disturb this plug between dry off and the next lambing.

A study in the UK looked at the effects of applying a dry cow treatment to ewes at dry off to see if it could help cut down on mastitis in the next lactation. They treated half the flock and kept the rest as a control. One farm had low rates of clinical mastitis and they looked at Somatic Cell Count and milk cultures during the next lactation. They did not find a significant difference in the incidence of subclinical mastitis in treated ewes. The other farm did have high rates of clinical mastitis and they did see a significant reduction in mastitis in treated ewes, although the treatment did not prevent all cases of mastitis. They looked at the cost of treating the ewes and the savings due to ewes not getting mastitis and found that the reduction in mastitis was not worth the cost of the dry off treatment.

## OPP

Ovine Progressive Pneumonia is a viral infection that can cause hardbag – udders that look full but are hard to the touch and do not produce milk. Other causes of mastitis can cause similar signs and testing ewes with these symptoms for OPP (a blood test) can help you identify this problem if it is present on your farm. If you do find ewes that are positive, a whole flock testing program can give you an idea of the prevalence in your flock. OPP can be successfully eradicated by a test and cull program.

## **Alite 27 – Residual Herbicide for GT27 Soybeans**

By Mark Loux

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2022-05/alite-27-%E2%80%93-residual-herbicide-gt27-soybeans>

Alite 27 is isoxaflutole (Balance Flexx) repackaged and labeled for preemergence use in LL-GT27 soybeans, minus the safener, cyprosulfamide, which protects corn from injury. The LL-GT27 soybean has resistance to glyphosate, glufosinate, and isoxaflutole, and is the only type of soybean that can be used with Alite 27. Isoxaflutole has been used as a residual herbicide in corn for quite a while, but mostly in Corvus now, where it's combined with thien carbazon and cyprosulfamide. While there are many residual premixes for soybeans that control/suppress grasses and broadleaf weeds, Alite 27 probably has a broader spectrum than any other single active ingredient product. Alite 27 can provide about 70% initial control of many annual grasses, and we rate it an 8 or 9 on most broadleaf weeds. It can provide about 60% initial control of burcucumber and giant ragweed (at least the early-season emergers). Many populations of common and giant ragweed in Ohio have at least some degree of resistance to site 2 herbicides (ALS inhibitors – chlorimuron, cloransulam, etc). This results in a complete lack of residual herbicide options for control of giant ragweed, and only flumioxazin for common ragweed. So – one of the fits for Alite 27 is to improve residual control of these ALS-resistant weeds, as long as the right soybean is being planted. We have conducted limited research to determine whether there's a benefit to mixing Alite 27 with other residual herbicides, and determined it's probably not necessary in many fields that are receiving an adequate follow up POST herbicide treatment. Adding another herbicide could help with resistance management and improve control of grasses and waterhemp.



Aside from being useful only in GT27 soybeans, the other catch is that Alite 27 is currently labeled for use only in certain Ohio counties. We don't know the reason for this. These counties are: Allen, Auglaize, Belmont, Carroll, Columbiana, Crawford, Darke, **Guernsey**, Hancock, Harrison, Lake (are there soybeans here?), Mercer, Monroe, Morgan, Morrow, **Muskingum**, **Noble**, Preble, Richland, Shelby, Van Wert, Washington, and Wyandot.

**Notice:** that Coshocton, Holmes, Licking and Tuscarawas counties are not on the label. For more info, check the weed control guide and the [Alite 27 label](#).

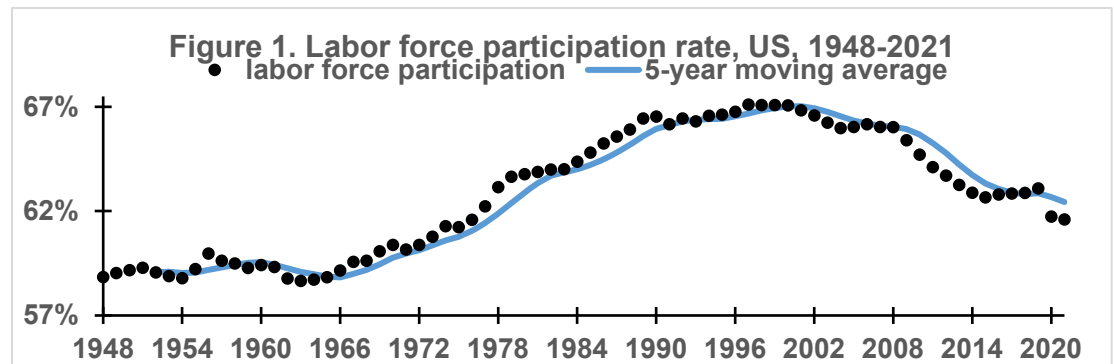
## **U.S. Labor Market and Labor Wage Inflation**

Carl Zulauf, Ohio State University, Gary Schnitkey, Nick Paulson, and Krista Swanson, University of Illinois at Urbana – Champaign, January 2022

Lack of labor is often mentioned when discussing US supply chain problems. To attract employees, firms may need to raise wages, which can then lead to inflation. Inflation has implications for US Federal debt and interest rates discussed in the December 20 and 23, 2021 *farmdoc daily* posts. The US labor market is examined since 1948, the first year that the labor force participation rate is available from the Bureau of Labor Statistics. The labor force participation rate since 1948 tracks the working life of Baby Boomers. In particular, it has declined as Baby Boomers retire. A simple analysis finds lower labor force participation is strongly statistically associated with higher real hourly earnings in manufacturing. An important question emerges, “Will wages have to increase to attract younger generations into the work force, which will make wage inflation a defining, on-going attribute of the US economy in coming years?” The data in this article are from the Federal Reserve Bank of St. Louis.

**Labor Force Participation:** The US population is expected to grow slowly (Vespa, Medina, and Armstrong, 2020), making labor force participation more important to the future size of the US labor force. Since 1948, US labor force participation rate (see Data Note 1) tracks reasonably well the working life of Baby Boomers. Baby Boomers are usually defined as those born between 1946 and 1964 (Wikipedia, 2021). The labor participation

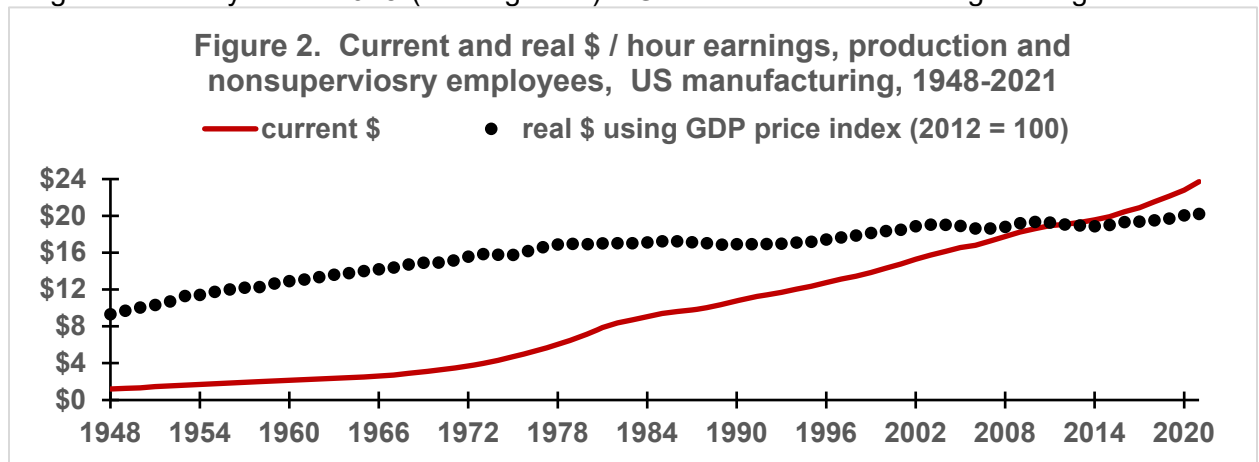
rate did not consistently exceed 60% until 1969 (see Figure 1) when the oldest Baby Boomers were 23. Participation peaked at 67% in 1994-2002, then began to decline. The decline accelerated in 2008, which coincided not only with a US real estate crisis but also with the



oldest Baby Boomers turning 62, the earliest age to collect Social Security. These associations remain if a 5-year moving average is used to focus on longer-term changes. The associations prompt this question: “Are Baby Boomers more willing to work than Americans who preceded or followed them?”

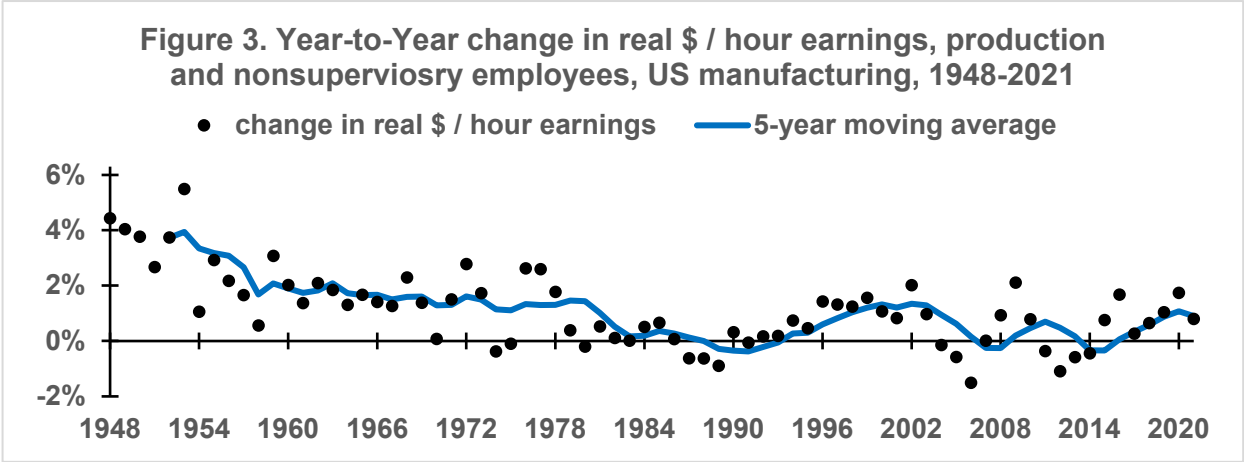
**Manufacturing Hourly Earnings:** Average hourly earnings of production and nonsupervisory employees in US manufacturing have grown steadily since 1948 (see Figure 2). Growth was fastest during the high inflation 1970s.

Deflating hourly earnings by the GDP (Gross Domestic Product) implicit price deflator considerably dampens the long run uptrend. Since 1948, nominal hourly earnings have increased

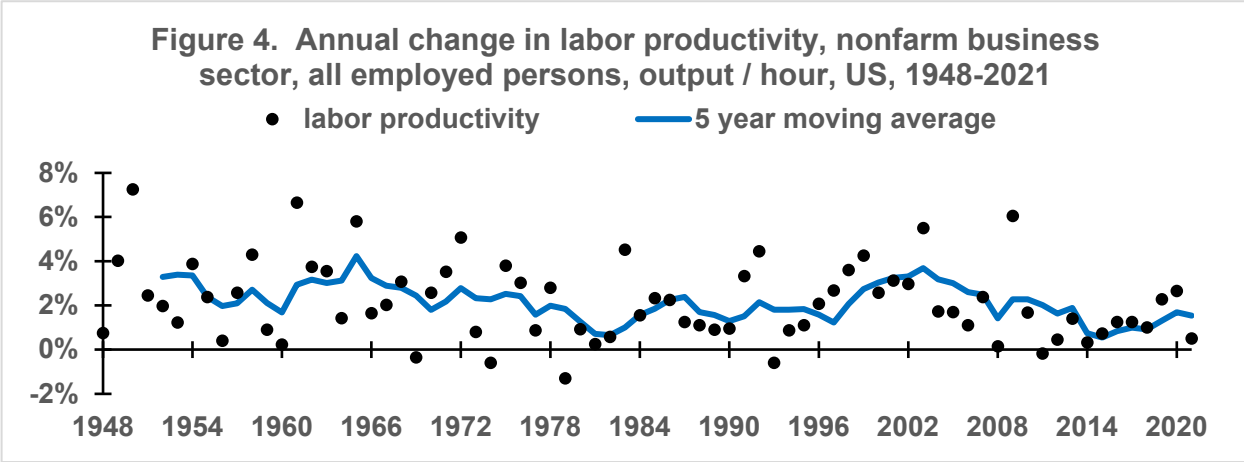


by roughly a factor of 20 while real hourly earnings have roughly doubled.

Figure 3 contains the annual year-to-year change in real hourly manufacturing earnings. Growth was highest in the 1950s. The first year that real hourly earnings declined was 1974. Declines have occurred in 13, or about 30%, of years since. The last year with a decline was 2014.



**Labor Productivity:** A positive relationship has consistently been found between changes in labor earnings and changes in labor productivity. Figure 4 contains the annual percent change in labor productivity of all employed persons in the US nonfarm business sector as measured by output per hour (see Data Note 2). Considerable year-to-year variability exists around the 1948-2021 average annual increase in labor productivity of +2.2%. The range in annual change is -1.3% to +7.3%.



**Explaining Change in Real Annual Earnings:** A regression analysis was conducted of the 5-year moving average of annual change in real manufacturing hourly earnings. Explanatory variables were the 5-year moving averages of labor force participation rate and labor productivity, as well as a time trend. Each explanatory variable had a strong statistically significant relationship with the 5-year moving average of annual change in real manufacturing hourly earnings. Labor force participation had a negative sign, implying hourly earnings increase as labor force participation declines. As expected, hourly earnings increased as labor productivity increased. Once labor force participation and labor productivity were taken into account, real hourly earnings have declined over time. Several factors can explain a negative time trend, including internationalization of the US supply chain which has shifted production to countries with cheaper labor. The three variables explained a strongly statistically significant 68% of the year-to-year variation in the 5-year moving average of annual change in real manufacturing hourly earnings.

**Table 1. Regression analysis of the 5-year moving average of annual change in real hourly manufacturing earnings, US, 1948-2021.**

	<u>coefficient</u>	<u>statistical confidence</u>
intercept	0.0901	99.9%

labor force participation	-0.1312	99.9%
labor productivity	0.3839	99.9%
linear time trend	-0.0002	98.7%
explanatory power	68%	99.9%

### Summary Observations:

This article presents evidence that (a) US labor force participation has been declining in the 21<sup>st</sup> Century and (b) lower labor force participation has historically been associated with higher hourly earnings.

Some, perhaps a notable part, of the 21<sup>st</sup> Century decline in US labor force participation may be due to retiring Baby Boomers having a greater propensity to work than succeeding generations. If so, employers will need to raise wages to attract more workers.

Moreover, the Federal infrastructure bill creates new jobs, likely adding to labor wage inflation. The proposed “Build Back Better” bill also contains programs that creates new jobs, for example early childhood educators.

The preceding points imply a key question, “Is labor wage inflation an emerging US issue?”

Many factors that impact inflation are transitory in nature, such as reductions in crop output due to weather and higher energy prices due to a weather-related surge in demand or reduction in supply.

The distinction between transitory and on-going inflation is why economists often remove farm, food, and energy prices to calculate what is called the core inflation rate. However, it is important to note that farm, food, and energy prices can contribute to on-going inflation, especially if demand is growing faster than supply.

Labor wage inflation is less likely to be transitory and more likely to be sustained, especially if the cause is a structural change in labor supply or demand. Declining labor force participation is a structural change in labor supply.

Labor wage inflation often translates into higher general inflation. Workers have more income to spend which translates into more demand. Assuming all else remains the same, higher demand means higher prices for goods and services.

If expectations for continuing inflation takes hold, often called inflation psychology; inflationary pressures mount further as consumers buy now to avoid paying higher prices in the future.

Moreover, over the last two years, the inflation adjusted 10-year US Treasury Bond interest rate has been negative (December 22, 2021 *farmdoc daily*). The combination of inflation and negative real interest rates discourages investment in interest rate instruments such as bank CDs since earned interest will not cover inflation price increases. It is reasonable to assume that some, maybe a lot, of money in this safe investment will move to riskier investments, such as stocks and real estate.

Once inflation takes hold, it is difficult to cure. For example, when the US finally decided to cure its inflation problem in the late 1970s, it took a sustained period of high real interest rates to cure it. High Federal outlays for interest on US debt materially constrained US policy and spending, and real estate investments, such as farmland, and stocks struggled with low returns and declining values.

Another potential solution to inflation is new technology that improves labor productivity, such as robots.. Faster growth in output increases supply, thus dampening general price inflation. However, the history of US labor productivity as presented in Figure 2 prompts caution regarding this option.



Another solution is increased immigration to increase US labor supply, but political discord prompts caution regarding the feasibility of this option at this time.

In closing, it is too early to know if sustained higher inflation, in particular labor wage led inflation, is an emerging, on-going US problem. If it is an emerging, on-going problem; it may take several years before the US decides to act or is forced to act by markets. Nevertheless, it is not too early to track labor wage inflation as an early warning signal.

#### Data Notes:

1. Conceptually labor force participation is the percent share of the working age population who are employed or unemployed but actively looking for work. It is calculated as a percent of the civilian non-institutional population age 16 and older, which is the population universe used for Current Population Survey (CPS) statistics published by the Bureau of Labor Statistics. Excluded from this population are (1) active duty members of the US Armed Forces and (2) people in institutions such as residential care facilities and correctional institutions. It includes citizens of foreign countries who reside in the US and do not live on the premises of an embassy. Unemployed does not mean collecting unemployment insurance. Actively looking for work means (1) at least one active effort was made to find a job during the 4-week period ending with the CPS survey reference week or (2) temporarily laid off and expecting to be recalled. Looking at help wanted ads but taking no further action is not considered an active job search. Source for this data note is US Department of Commerce, Bureau of Labor Statistics, 2021.
2. A measure of annual percent change in manufacturing labor productivity is not available until 1988. Given its much shorter period of availability, it is not used in this analysis.

#### Data Sources:

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<https://fred.stlouisfed.org>

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## Ukraine Dairy Industry

By: Jason Hartschuh, Extension Educator

Printed for March 10 Farm & Dairy Newspaper

Over the last few weeks, we have learned a lot about agriculture in Ukraine and how this country is critical to feeding the world with their excellent soil. They have 25% of the world's black soils, that are very forgiving and regenerative. They have been continuing to improve their production practices exponentially increasing crop yields. The southern portion of Ukraine sits at 45°N about the same place as the state line between Montana and Wyoming or the northern part of lower Michigan. The Northern point of Ukraine is slightly above 52°N which is boarder between Quebec and Newfoundland Canada or approximately James Bay in Canada. Ukraine producers a lot of grain for livestock and human consumption which along with the rising increase in oil prices will have a significant effect on US dairy profitability this year.

Very little has been discussed about what the Dairy industry in Ukraine looks like or if they are a net importer or exporter of dairy products. According to USDA Foreign Agricultural Service Fluid milk production has been declining for the last 30 years causing the country to now be a net importer of dairy products. Approximately 75 percent of cows are owned by private households, which often only own a couple cows and walk them out to the countryside to graze each day. The other 25 percent of cows are owned by larger herds who producer 35% of the countries milk. The household herds are shrinking the most of these two groups while they tend to have

lower cost of production, they also produce less milk per cow and have lower milk quality. Household herds tend to lack modern milking and cooling equipment, balanced feed rations, and veterinary care. In some towns there has recently been efforts to pool milk for cooling to improve quality. The household milk is often sold in open air markets as sour cream, soft cottage cheese, and occasionally butter. Household milk production is the primary source of fluid milk in the country and if not marketed locally is used as dry milk or whey that gets exported. Household milk production is very seasonal. Ever since 2019 Ukraine has been a net importer of dairy products. Often imported dairy products sell for less than domestic production, they have slightly different taste than the local cheese but are growing in popularity.

Many of the processing plants in Ukraine are older and inefficient compared to neighboring countries causing increases in natural gas prices squeeze profitability. The primary dairy products that are exported include, butter, skim milk powder, whole milk powder, and lower value cheeses. Ukraine cheese exports primarily go to Kazakhstan, Moldova, Georgia, Azerbaijan, and Egypt. These exports are primarily low value cheeses and native cheeses. There was approximately 62 metric tons of cheese exported to the United States for sales through ethnic Ukrainian stores.

Ukraine is expected to remain a net importer of dairy products. Imports are centered around premium and mass-market segments. Domestic demand has been growing for sophisticated dairy products including high quality cheeses. With 109.9 million US dollars of cheese imported in 2020. Other major imports included butter, infant formula, and yogurt. Mass markets cheeses include Edam, Gouda, Emmental, and cheddar with these imports primarily coming from Poland and other Baltic countries with the highest dollar cheeses being imported from France, Netherlands, and Italy. The EU makes up almost 97 percent of cheese imports to Ukraine. Cheese makers and larger producer in Ukraine have been working hard to improve domestic cheese quality but they are expected to continue to see significant growth in imported cheeses.

While the Ukraine Dairy industry does not directly purchase dairy products from the US they are interested in our genetics. Dairy producer associations have expressed strong desires to improve production through better genetics and nutrition. Improvements in genetics are coming from imported semen from both the US and European countries. USDA Foreign Agricultural Services has been working to facilitate market access to U.S. heifers that are vaccinated against brucellosis. While the US Dairy industry has not been directly interacting with Ukraine, the Russian invasion will have reaching effects on our profit outlook. Hopefully be the time you read this peace has come back to the region and markets are beginning to stabilize.

### ***Ohio Farm Custom Rate Survey 2022 Responses – Last Call***

By: Barry Ward, Leader, Production Business Management, OSU Extension, Agriculture & Natural Resources

Source: <https://u.osu.edu/ohioagmanager/2022/03/07/ohio-farm-custom-rate-survey-2022-responses-last-call/>

The Ohio Farm Custom Rates Survey 2022 data collection has launched. The online survey for 2022 is available at: <https://go.osu.edu/ohiofarmcustomratesurvey2022> If you perform custom farm work or pay for these services, we kindly ask you to complete the Ohio Farm Custom Rate Survey for 2022.

A large number of Ohio farmers hire machinery operations and other farm related work to be completed by others. This is often due to lack of proper equipment, lack of time or lack of expertise for a particular operation. Many farm business owners do not own equipment for every possible job that they may encounter in the course of operating a farm and may, instead of purchasing the equipment needed, seek out someone with the proper tools necessary to complete the job. This farm work completed by others is often referred to as “custom farm work” or more simply “custom work”. A “custom rate” is the amount agreed upon by both parties to be paid by the custom work customer to the custom work provider.

Custom farming providers and customers often negotiate an agreeable custom farming machinery rate by utilizing Extension surveys results as a starting point. Ohio State University Extension collects surveys and publishes survey results from the Ohio Farm Custom Survey every other year. Past survey summaries can be found at: <https://farmoffice.osu.edu/farm-mgt-tools/custom-rates-and-machinery-costs> This year we are updating our published custom farm rates for Ohio.

We kindly request your assistance in securing up-to-date information about farm custom work rates, machinery and building rental rates and hired labor costs in Ohio.

This year we have an online survey set up that anyone can access. We would ask that you respond even if you know only a few rates. We want information on actual rates, either what you paid to hire custom work or what you charged if you perform custom work. Custom Rates should include all ownership costs of implement & tractor (if needed), operator labor, fuel and lube. If fuel is not included in your custom rate charge there is a place on the survey to indicate this.

You may access the survey at:

<https://go.osu.edu/ohiofarmcustomratesurvey2022>

If you prefer a document that you can print out and fill out by hand to return, email Barry Ward at [ward.8@osu.edu](mailto:ward.8@osu.edu)



You can also access the online survey through this QR code:

The deadline to complete the survey is March 31, 2022.

### ***National AG Day Lunch Slated for March 22***

We are pleased the Coshocton County Ag Day Luncheon will make its return on Tuesday, March 22, 2022. This event was cancelled in 2020 and held as a drive through event last year due to the coronavirus pandemic. Please join us in-person this year as we recognize the contributions of today's farmers and show our appreciation for the men and women of agriculture.

This year's theme is "Growing a Climate for Tomorrow" and is sponsored by Farm Credit Mid-America, the Coshocton Soil & Water Conservation District, and Ohio State University Extension. The Celebration will be held at the Lake Park Pavilion located at 23253 State Route 83 in Coshocton, Ohio. The doors will open at 11:30 a.m. with lunch at 11:45 a.m. followed by a short program that will adjourn at 1:00 p.m. The meal is being catered by Shumaker Farms and the cost is \$8 per person. Reservations are required by March 15 and can be made by calling 740- 622-8087, ext. 4 or via email at [samanthapriest@coshoctoncounty.net](mailto:samanthapriest@coshoctoncounty.net).

We hope you join us to celebrate Coshocton County Agriculture.



### ***ODA Testing Date in Coshocton County Slated for March 17***

The Ohio Department of Agriculture (ODA) will be administering Private and Commercial Pesticide license examinations on March 17, 2022 at the Coshocton County Services Building (Room 145) located at 724 South 7<sup>th</sup> Street in Coshocton, Ohio. The testing will begin at 10:00 a.m. Pre-registrations are required and can be made on-line at the ODA website at:

<https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/pesticides/exam-registration> Producers can also call the ODA at 614-728-6987. Study materials can be obtained at: <https://pested.osu.edu/>

### ***OSU Extension to Host 2022 East Ohio Women in Agriculture Conference***

Source: <https://u.osu.edu/ohioagmanager/2022/02/05/osu-extension-to-host-2022-east-ohio-women-in-agriculture-conference/>

Ohio State University (OSU) Extension will host the 7th Annual East Ohio Women in Agriculture Conference.

The conference is planned for Friday, March 25 from 9:00 a.m. – 3:30 p.m. at Ohio FFA Camp Muskingum, 3266 Dyewood Road SW, Carrollton, OH 44615. All women and young women (high school age) who are interested, involved in, or want to become involved with food, agricultural, or natural resources production or small business are encouraged to attend.

The conference program features a networking fair and sixteen breakout sessions presented by OSU Extension educators, producers, and partner agencies. See the Sessions this year are focused around four themes: Natural Resources, Plants & Animals, Home & Family, and Special Interest (includes break-out with Ohio FFA State Officers). The conference keynote will be led by Bridget Britton, OSU Extension Behavioral Health Field Specialist. She and her team will lead participants through “Stoic or Stressed? Talking through difficult topics in a safe space.”

Registered participants, community organizations, or businesses interested in sponsorship can contact 740-461-6136. Interested individuals can register for the conference online at [go.osu.edu/eowia2022](https://go.osu.edu/eowia2022). Cost of the conference is \$55 for adult participants and \$30 for students. Conference fee includes conference participation, breakfast, lunch, and conference handouts. Deadline for registration is Friday, March 11. For additional information, please contact Emily Marrison, OSU Extension Coshocton County at 740-622-2265. Stay connected with the Ohio Women in Agriculture Learning Network on Facebook @OHwomeninag or subscribe to the Ohio Women in Agriculture blogsite at [u.osu.edu/ohwomeninag](https://u.osu.edu/ohwomeninag)

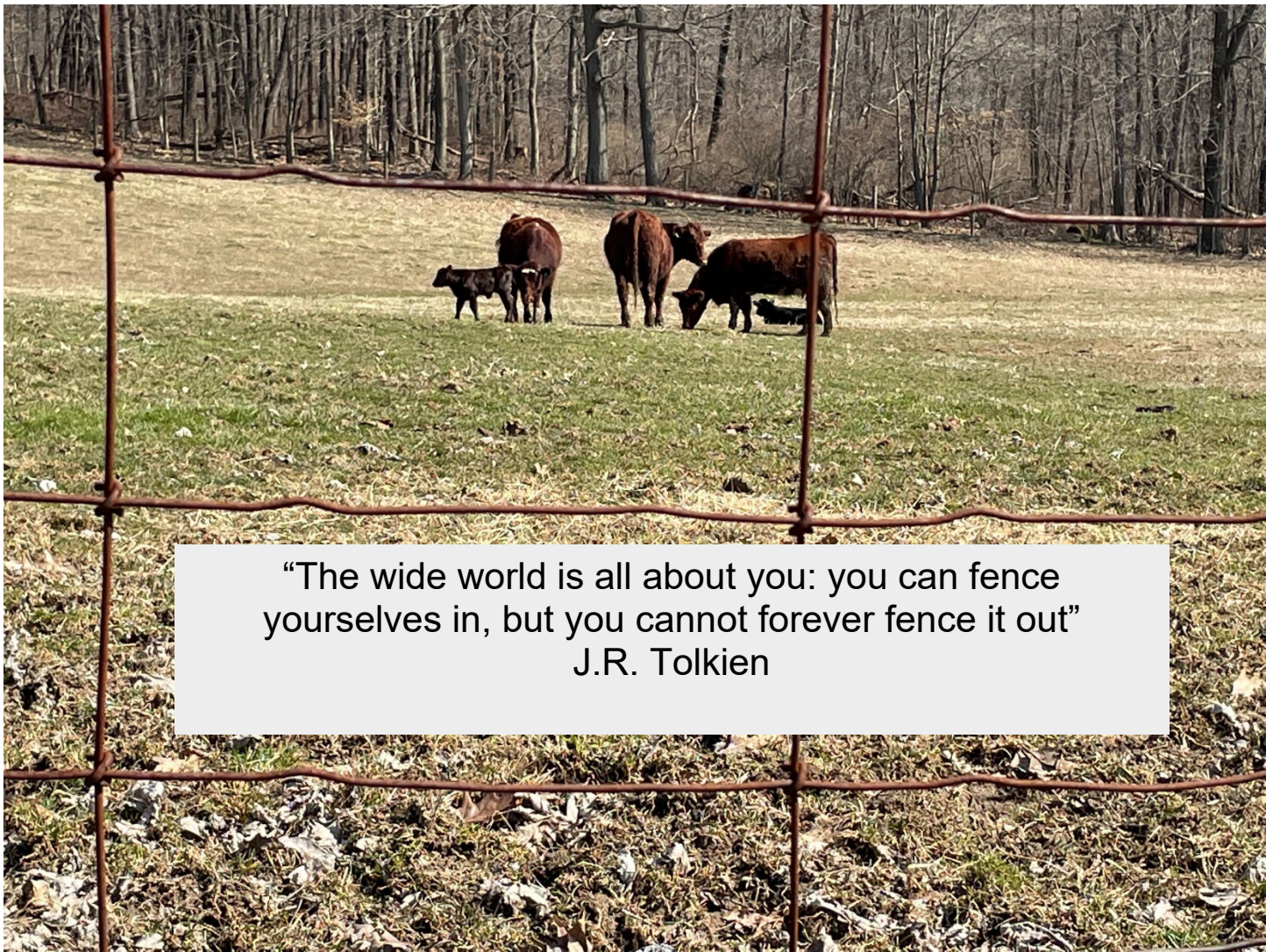
### ***Winter 2022 Beef Quality Assurance Re-Certification Trainings***

The Coshocton County Extension office will be offering two additional **Beef Quality Assurance (BQA)** re-certification meetings during the winter of 2022 to help producers renew their BQA certification. These sessions will be held tonight March 9 and April 13 from 7:00 to 8:30 p.m. in Room 145 at the Coshocton County Services Building located at 724 South 7<sup>th</sup> Street in Coshocton County. Pre-registration is required for each session as space is limited. There is no fee to attend. Call 740-622-2265 to pre-register. These sessions also qualify for anyone who is seeking a first time certification.



If you cannot attend one of our local sessions, Tuscarawas County will also be holding Beef Quality Assurance classes on February 28 (7 p.m.) and March 30 (7:00 p.m.) at the Sugarcreek Stockyards. Call 330-339-2337 to pre-register. Online certification and recertification is also available and can be completed anytime at <https://www.bqa.org/beef-quality-assurance-certification/online-certifications>.





“The wide world is all about you: you can fence  
yourselves in, but you cannot forever fence it out”  
J.R. Tolkien