

## TUSCARAWAS COUNTY AGRICULTURE & NATURAL RESOURCES

Dear Farm Manager,

June 9, 2021

I hope you find this information to be of value. Please contact me at 330-827-0249 with your questions.

**CORN LIVE**...will air Thursday, June 10, at 8am. The webinar will be the first session of a new series which will be offered throughout the growing season to address timely issues related to agronomic crop production and management as they emerge.

Guest speakers for this week's CORN Live session include Nathan Douridas, Farm Manager at the Farm Science Review (FSR), and John Fulton, Professor and OSU Extension Specialist in Food, Agricultural, and Environmental Engineering. Douridas will discuss the overall nitrogen plan at FSR and discuss the technology, equipment, and tools utilizing at FSR to manage nitrogen in the field. He will also give an update on crop progress at FSR. Fulton will discuss field trials on nitrogen rate and placement in corn and how his research can be used to refine nitrogen application decisions on farms in Ohio.

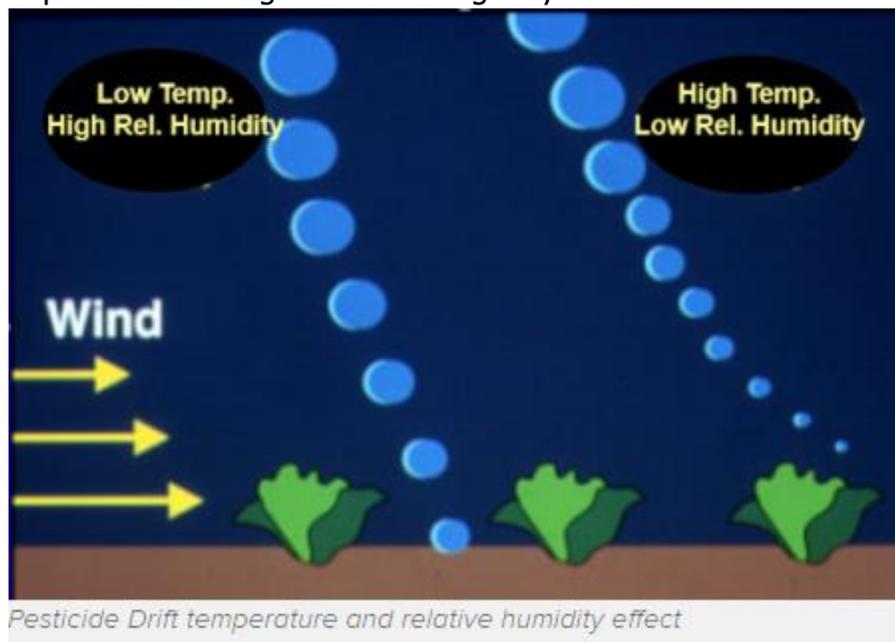
Register at [www.go.osu.edu/cornlive](http://www.go.osu.edu/cornlive). 1 hour of NM CCA CEUs will be offered.

**HIGHER TEMPERATURES**...increase spray drift risk. Since evaporation of liquid from a droplet decreases its mass, it also influences the drift distance of the droplet. Evaporation rates of droplets by time vary depending on the initial size of droplets at the time they are released from the nozzle, temperature, and relative humidity. Effect of temperature and relative humidity will be much greater for small droplets especially those smaller than 100 micron which is the approximate diameter of human hair.

Let me give you some examples to illustrate the influence of just the temperature and relative humidity on spray drift. I will tackle the effect of wind on drift in another article. These examples are coming directly from the Ohio State University Extension Publication FABE-525, "Effect of Major Variables on Drift Distances of Spray Droplets (<https://ohioline.osu.edu/factsheet/fabe-525>). For this illustration, I will assume a wind speed of approximately 5 mph, relative humidity of 50%, and the nozzle height from the top of the target is 18 inches. I will give you drift distances of different sizes of droplets under two temperatures: 68°F and 86°F. Droplets under 100 microns will almost always drift some distance away from the discharge location, however, they may at least have a chance to deposit on the target at 68°F. However, the same droplet at 86°F temperature will likely evaporate at some distance away from the discharge location. For example, a droplet with an initial size of 70



microns at 68°F will likely deposit on the target after a drift distance of 6 feet. However, at the time of deposition on the target, the final droplet size will be reduced from 70 to 44 microns (a reduction of 37% in size). The same 70-micron droplet at 86°F will completely evaporate after traveling only 13 feet. In contrast, a 150-micron droplet under similar conditions will be affected much less by the temperature. It will lose its size by only 2 or 3% of its size at 68°F and 86°F, respectively. It will deposit on the target after drifting only about 3 feet.



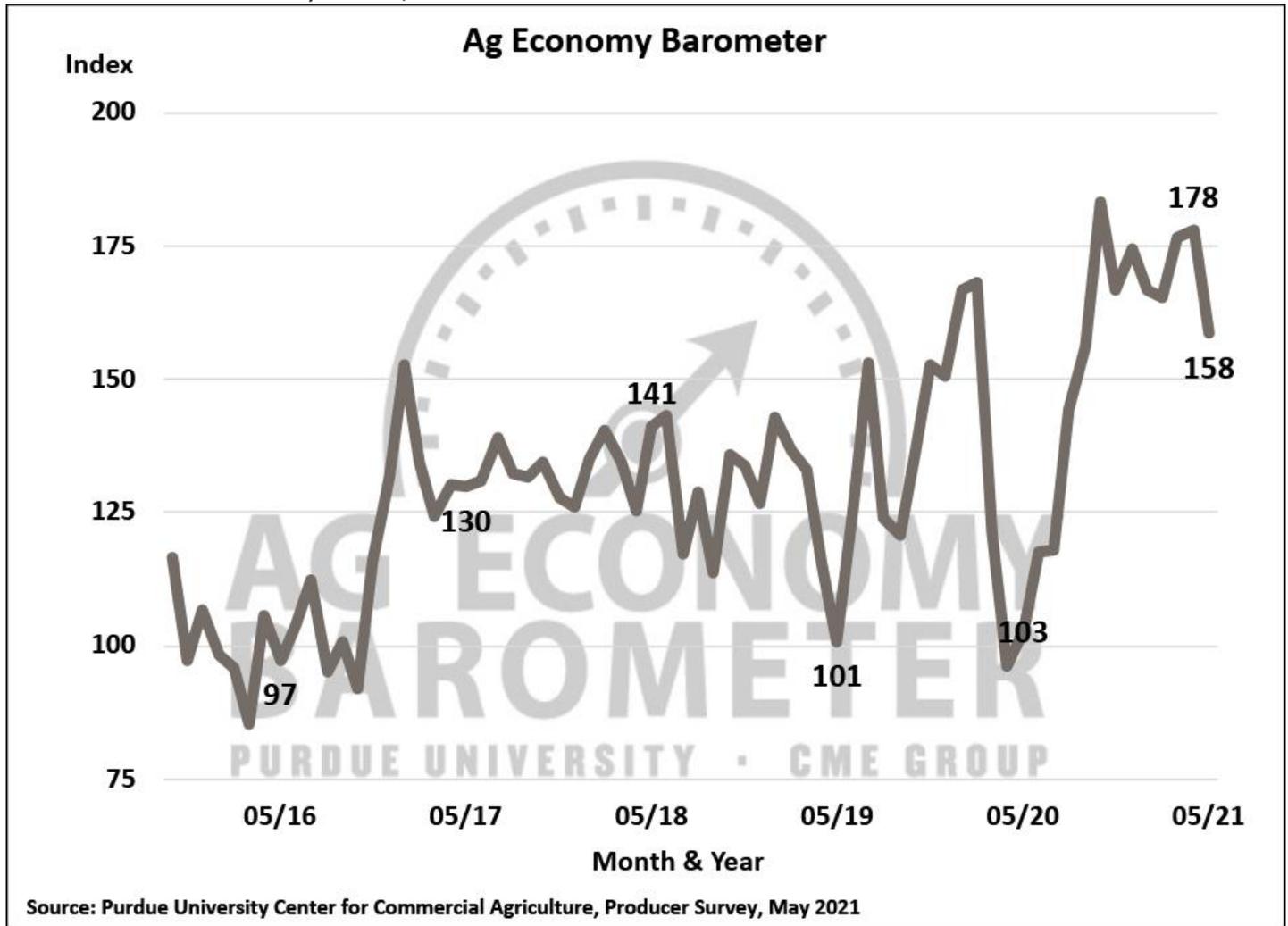
So, these numbers tell us one very important message: If you must spray at high temperature and low relative humidity conditions, here are some options you can choose to diminish the effect of high temperatures on spray drift. The first option is to choose nozzles that will reduce the number of droplets smaller than 100 microns. Check the nozzle manufacturers' websites to see which nozzles will provide droplets larger than 100 microns under the spray pressure conditions you will be doing your spraying. The second option is to reduce spray pressure and adjust the sprayer travel speed accordingly to make sure the gallons per acre application rate remains the same. Always remember, the higher the spray pressure, the higher the number of drift-prone droplets discharged from the same nozzle. The third option is to add so-called "drift retardant" adjuvants in the spray mixture to bump up the droplet size spectrum and reduce the number of drift-prone droplets. However, if you want to choose this last option, always check the pesticide label to make sure they allow adding drift retardant chemicals into the spray mixture. Some pesticides provide a list of specific drift reduction products or adjuvants that can be used. So, please check the pesticide label before adding drift retardant chemicals or other adjuvants to the spray mixture.

(Source: OSU Extension C.O.R.N. newsletter: <https://agcrops.osu.edu/newsletter/corn-newsletter/17-2021/high-temperatures-mean-higher-risk-spray-drift>)

**AG ECONOMY BAROMETER**...dropped sharply in the June 1 report. The *Ag Economy Barometer* declined 20 points in May to 158 which is the lowest barometer reading since September 2020 when the index stood at 156. The *Ag Economy Barometer* sentiment index is calculated each



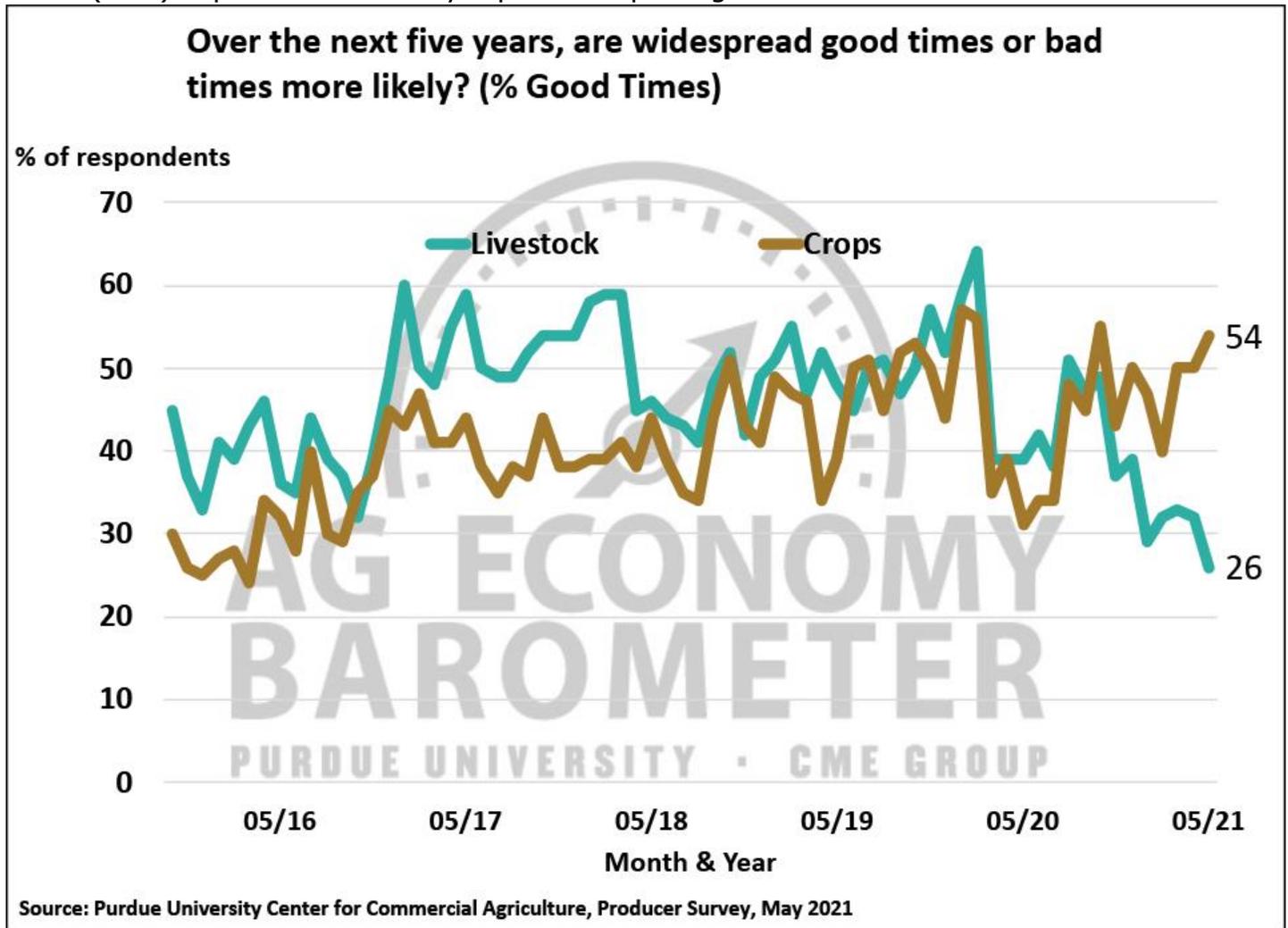
month from 400 U.S. agricultural producers' responses to a telephone survey. This month's survey was conducted from May 10-14, 2021.



Producers expressed less optimism about their farms' financial performance in May than a month earlier as the *Farm Financial Performance Index* declined to 126 from a record high 138 in April. Although May's index was 12 points lower than a month earlier, it was still the second highest reading since the financial performance question was first posed in spring 2018.

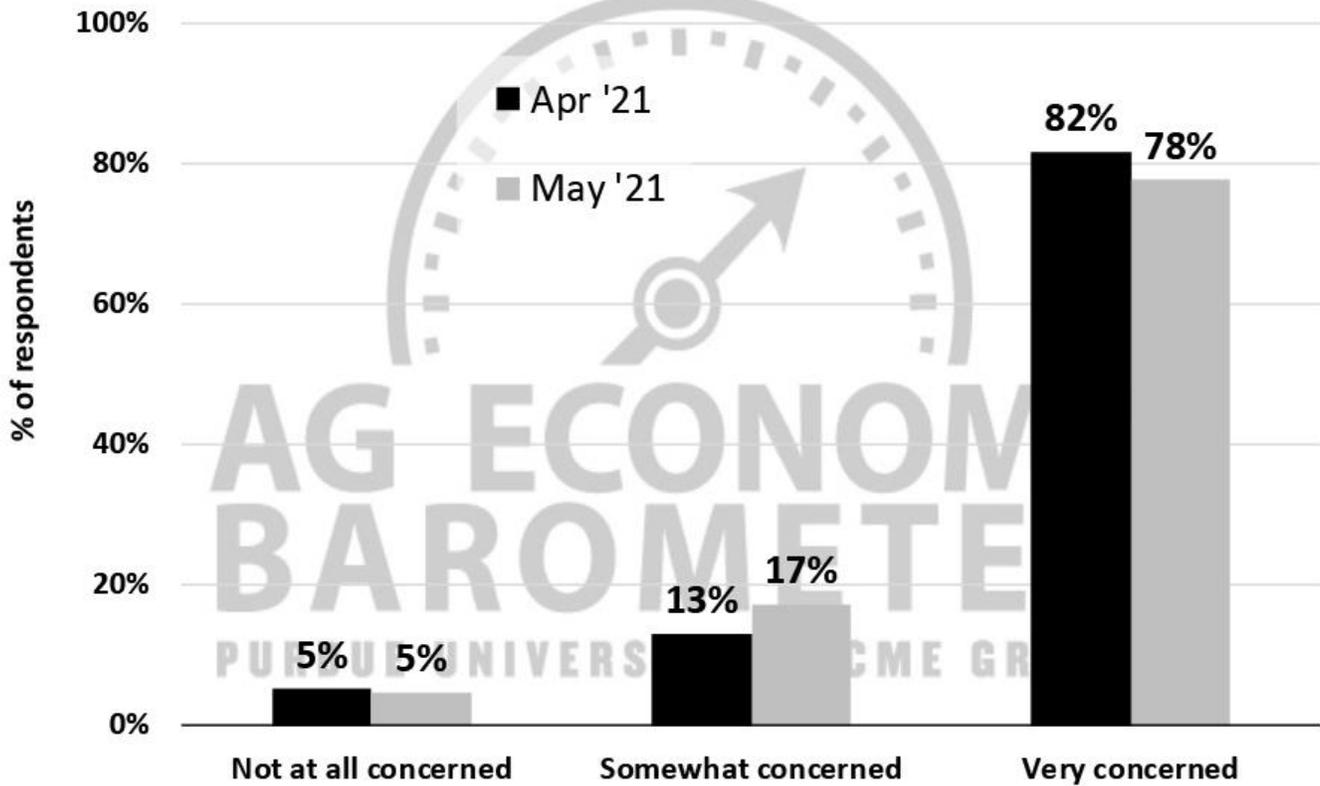
On the May survey producers who grow corn or soybeans were asked about their expectations for cash rental rates in 2022. Two-thirds (65%) of the corn/soybean growers in our survey said they expect next year's cash rental rates in their home area to rise above 2021's. In a follow-up question, producers who said they expect rental rates to rise were asked by how much they expect them to rise. Over 40 percent (43%) of respondents said they expect 2022 cash rental rates to rise by 10 percent or more with nearly as many producers (39%) indicating they expect cash rental rates to rise from 5 to as much as 10 percent.

Producers' expectations for good vs. bad times in U.S. agriculture have undergone a marked shift. For example, in May just 27 percent of respondents said they expect good times in U.S. agriculture during the next five years, the lowest reading in the survey's history and down 12 points from a month earlier. A driver of this shift appears to be a large divergence in expectations for the crop vs. the livestock sectors in the upcoming five years. This month over half (54%) of respondents said they expect widespread good times for the crops sector in the next five years whereas just one-fourth (26%) of producers said they expect widespread good times for the livestock sector.



Producers remain very concerned about possible changes to U.S. tax policy. In a series of questions first posed last month, survey respondents confirmed that changes in tax policy being considered will make passing their farm on to the next generation more difficult (78% very concerned). Additionally, 83 percent of producers expect capital gains tax rates to rise over the next five years, 71 percent are very concerned about a possible loss of the step-up in cost basis for inherited estates and 66% say they are very concerned about a possible reduction in the estate tax exemption for inherited estates.

How concerned are you that changes in estate tax policy currently being considered by Congress will make it more difficult to pass your farm on to the next generation of farmers in your family?



Source: Purdue Center for Commercial Agriculture, Producer Survey, April-May 2021

The complete report is available here:

<https://ag.purdue.edu/commercialag/ageconomybarometer/wp-content/uploads/2021/05/May-2021-Ag-Economy-Barometer.pdf>

**BEEF QUALITY ASSURANCE (BQA) RECERTIFICATION**...for those needing to renew in 2021 will be held the following dates and times. Sessions will take place at the Sugarcreek Stockyards. Please RSVP to the Extension office at 330-339-2337.

- July 21 at 1pm
- July 29 at 7pm
- August 10 at 1pm
- August 25 at 7pm

**ENERGY RESOURCES**... are available from OSU Extension at this site: <https://energizeohio.osu.edu/>. Topic areas include fossil energy and sustainable energy.

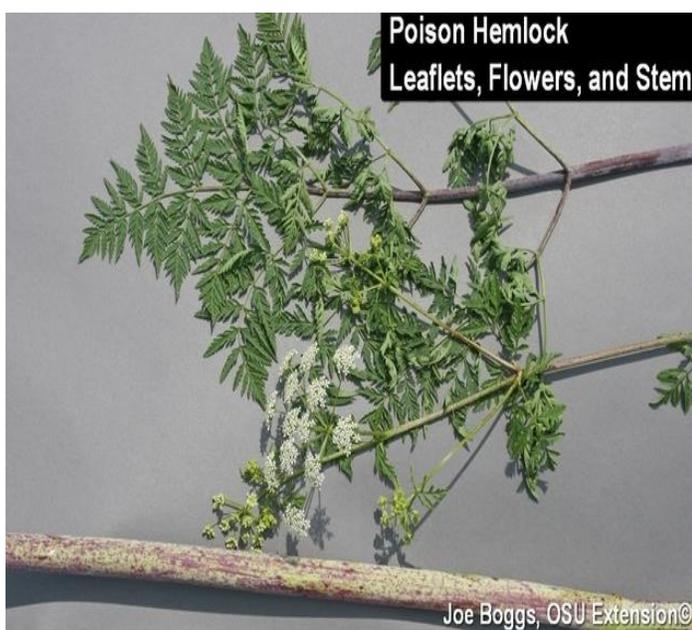


**PLANNING FOR THE TRANSITION OF YOUR FARM**...to the next generation is a time-consuming process. While many farmers dream of seeing their legacy passed on to the next generation, many postpone initiating a plan for the transition of their business for a variety of reasons. Many claim that there is not enough time to discuss these matters. Or if planning does occur, it simply involves the senior generation drafting a will describing how the farm assets should be divided among heirs.

The main question that the principal operator of a farm or agribusiness should ask is: "Do I want to pass my farm operation to my heirs as an ongoing business or do I want to pass it on as a group of assets?" If asset transfer is the goal, then an estate plan can be developed to determine who will get what, when they will get it and how they will receive it. If the goal is to keep the business intact for the next generation, then a transition plan needs to be developed.

This OSU Extension Fact Sheet (<https://ohioline.osu.edu/factsheet/anr-47>) is an excellent resource to help families think through the steps necessary for a successful transition plan.

**POISON HEMLOCK**...is very prevalent throughout the county. Poison hemlock contains highly toxic piperidine alkaloid compounds, including coniine and gamma-coniceine, which cause respiratory failure and death when ingested by mammals. The roots are more toxic than the leaves and stems; however, all parts of the plant including the seeds should be considered dangerous. It is a common misconception that poison hemlock sap will cause skin rashes and blisters. In fact, poison hemlock toxins must be ingested or enter through the eyes, cuts, or other openings to cause poisoning.



The OSU Extension Weed Control Guide provides several recommended products for control of Poison Hemlock. Please contact me for product suggestions.

**DECIDING WHETHER TO KEEP LATE & OPEN COWS**...is the focus of an article in this OSU Extension Beef newsletter: <https://u.osu.edu/beef/2021/06/09/open-and-late-calving-cows-the-conundrum/#more-11001>.

### **Open Cows**

In most cases involving open cows, they should be in the cull pen. Open cows are a profit drain, no matter if we can roll them over or not. At the simplest form; Profit = (revenue – expense). An open cow is not going to generate any revenue in the form of a weaned calf, while continuing to consume resources (feed) that could be better utilized or perhaps sold. Cull cow prices have been strong as of late and timely culling can generate significant revenue for the farm.

### **Late Calving Females**

What about the producer who has fall and spring herds? There are potential benefits to a fall calving season, that said economics must be considered and often do not favor holding over those females. However, a cookie cutter approach does not always work from one farm to another. There are several points that are often covered when evaluating females that are unfashionably late to the parturition party.

Why did she calve late? – Figuring out why we have late calving females is important but is not always as clear cut as we would like it to be. If we cannot determine the root cause of the problem then, we should consider the value of culling that female from the herd, to maintain a production schedule that maximizes the profit potential of a group of calves. Below are some of the “why” questions I have discussed with producers since last fall.

**Repeat Offender** – “Was she late to calve last year?” If she is chronically late to calve, culling is often the most economic option.

**The Bull** – The bull is probably not the one to blame here, unless there is a significant portion of the herd open/late calving or we know that the bull was injured or lame.

**Nutrition** – “Was fertility compromised by a lack of nutrition, particularly energy and minerals?” This question often leads to a nutrition discussion.

**Lost Pregnancy** – “Was she a victim of statistics and simply lost an early term pregnancy and came back into heat?” Quite possible, we know that a varying percentage of females that are checked bred in early gestation, lose an embryo or fetus.

Once we determine the “Why”, all the following should be considered and acceptable before we consider rolling any cow over into the fall calving herd: Body Condition, Udder, Feet/Legs, Temperament.

**Cow Age** – If we consider the cost of developing a heifer from calving to her first calf it can be a more difficult decision on what to do with a late calving younger female, especially in a smaller herd. Was she one of those two-year-old’s that struggled to get rebred on an annual basis, often at little



fault of their own? One may be more inclined to hang onto these females to recoup some of the cost in developing them, just be aware that there is a cost of holding that female over. In a time of high feed cost and strength in the cull market, 2021 might not be the year to retain cows regardless the reason they were late to calve.

**QUESTIONS ABOUT OHIO'S LINE FENCE LAW**...are very common. This OSU Extension Ag Law Bulletin provides answers to some of the more common questions:  
<https://farmoffice.osu.edu/sites/aglaw/files/site-library/Line%20Fence%20Law%20FAQs%20.pdf>

**MYTHS ABOUT TICKS**...are discussed by Tim McDermott, DVM and Extension Educator, in this OSU Extension Beef newsletter: <https://u.osu.edu/beef/2021/06/09/learn-the-myths-about-ticks-to-keep-yourself-tick-safe/#more-10932>.

Veterinarians have a long history of dealing with the various pests that affect both companion animals and livestock. Mosquitos, flies, fleas, lice, mites, and ticks have caused severe illness as well as major economic loss for over one hundred years of animal care history. Over that time we have heard of some odd treatment protocols, homemade recipes, and unusual methods that are based more on myth than reality. The reality is that ticks and tick-borne diseases are expanding rapidly in Ohio and we do not have matching public health outreach to educate on the risks that these new ticks bring with them as well as to dispel the myths that are out there regarding prevention of tick-vectored disease. Here are some common myths regarding ticks and tick-vectored disease.

**Myth #1** – “Ticks are only present in the woods.” This is a very common myth that I hear frequently. While it is true that some species of ticks such as Blacklegged tick or Lone Star tick prefer a wooded habitat, some tick species such as the American Dog tick and Gulf Coast tick can tolerate a more open habitat such as a pasture, meadow, or backyard lawn. I recently read an article where they had discovered that there were ticks in the grasses that are right up next to the beach! Make sure you realize you can encounter a tick in about any habitat.

**Myth #2** – “Ticks need to be attached for a whole day to transmit disease.” This is a recommendation based on CDC research regarding Lyme disease from Blacklegged (Deer) ticks. We are now seeing some new research regarding different transmission times depending on what the pathogen is, (bacteria, virus) what life stage the tick is, (larval, nymphal, adult) as well as what disease we are concerned about. For example it is suspected that Rocky Mountain Spotted Fever has a different transmission after attachment timeframe that Lyme disease would have.

**Myth #3** – “Ticks are only active in the summer.” Many ticks have multi-year life cycles to complete their growth. While the warmer weather of late spring through summer has an increased amount of tick activity, ticks can be active all 12 months of the year. How many times have we seen a period of



warm weather in the winter or fall? Ohio weather is anything but predictable! Make sure you realize that you could potentially encounter a tick at any time of the year.

To keep yourself, your family and your animals tick safe this year make sure to develop a personal and family protection plan that includes protective clothing, tick checks, pet protection, proper removal methods as well as knowledge of where, when, and how you can encounter ticks and tick-vectored disease.

**REVISED OSU EXTENSION BUDGETS**...are available at this site: <https://farmoffice.osu.edu/farm-management/farm-budgets>

**VALUE OF BALER PRESERVATIVE APPLICATORS**...is discussed in this OSU Extension Beef newsletter: <https://u.osu.edu/beef/2021/06/09/value-of-baler-preservative-applicator/>.

A basic 25-gallon baler liquid applicator can be purchased for around \$500. It is not complicated; it is a small electric sprayer that you mount on the baler. The next thing you would probably want is a baler-mounted moisture tester so you can see the moisture of the hay as you bale. They can be purchased for \$350-\$500. So, for less than \$1,000 you can outfit your baler with the ability to apply a hay preservative when conditions are not perfect for baling but be able to get the hay off the field before the rain destroys the quality.

### **How Much Will it Cost to Apply Preservative?**

You can buy various types of preservatives in multiple unit sizes. One product for example, if you buy a 50-gallon drum (450 pounds) it costs about \$450 or \$1.00 per pound. If you buy a 275-gallon tote (2,380 pounds) it costs about \$2,000 or \$0.84 per pound.

Hay Stem Moisture	Small Square and Round Baler Application Rate	Application Cost Per Ton based on (\$1.00/pound)
22% and under	4 pounds/ton	\$4.00
23% - 26%	8 pounds/ton	\$8.00
27% - 30%	16 pound/ton	\$16.00
Above 30%	DO NOT BALE	



Hay Stem Moisture	Large Square Baler Application Rate	Application Cost Per Ton based on (\$1.39/pound)
22% and under	6 pounds/ton	\$6.00
23% - 26%	10 pounds/ton	\$10.00
27% - 30%	DO NOT BALE	
Above 30%	DO NOT BALE	

### How Much Preservative to Apply?

It is like calibrating a sprayer, but instead of gallons per acre you need to calculate pounds per ton. First, you need to figure out how many tons per hour of hay you bale. Count the number of small square bales you make in three minutes. Let's say it is 15 bales. Then weigh several of those bales to get an average weight. Let's say they are 40 pounds. If you bale 15 bales in 3 minutes then in an hour of continuous baling you will bale 300 bales with an average weight of 40 pounds.  $40 \times 300 = 12,000$  pounds per hour or 6 tons/hour. If you are trying to apply 4 pounds of preservative per ton you will need  $(6 \times 4)$  24 pounds per hour. If the preservative weighs 9 pounds per gallon that is 2.7 gallons per hour ( $24/9=2.7$ ) or 0.045 gallons per minute ( $2.7/60=0.045$ ). Remember to take into account the specific gravity since the preservative is slightly heavier than water. In my example, the specific gravity factor is 1.06 ( $0.045 \times 1.06=0.048$  gallons per minute).

Calculating Preservative Tips for Small Square Baler	Example	Your Numbers
<b>Number of small bales in 3 minutes</b>	15	
<b>Average Bale Weight</b>	40	
<b>Tons per Hour</b> (Bales in 3 minutes $\times$ 20 $\times$ Bale Weight/2000) ( $15 \times 20 \times 40 / 2000 = 6$ )	6	
<b>Desired Preservative Rate (#/ton)</b>	4	
<b>Pounds of Preservative per hour</b> (Preservative Rate $\times$ Tons per Hour) ( $4 \times 6 = 24$ )	24	
<b>Gallons of Preservative per Hour</b> (Pounds of Preservative per Hour/ weight of 1 gallon of Preservative) ( $24 / 9 = 2.67$ )	2.7	
<b>Flow Rate of Preservative in Gallons per Minute</b> (Gallons of Preservative per Hour/60) ( $2.7/60 = 0.045$ )	0.045	
<b>Adjust for Specific Gravity</b> (Gallons per minute $\times$ specific gravity factor) ( $0.045 \times 1.06 = 0.048$ )	0.048	
<b>Flow Rate Needed Using One Spray Tip</b>	0.048	

