

TUSCARAWAS COUNTY AGRICULTURE & NATURAL RESOURCES

August 18, 2021

AGRONOMY UPDATE... will be held **August 26** from 1pm to 4pm at Durbin Farms, 4227 Durbin Road SE., New Philadelphia. Please RSVP to 330-339-2337 or zoller.1@osu.edu by August 24. Program topics and speakers include:

- **Parts and Equipment Shortages are Real – Be Prepared: Thoughts on 2021 Harvest & 2022 Planting**
 - Dr. John Fulton, OSU Food, Agriculture, and Biological Engineering
- **Are You Ready for Carbon Markets?**
 - Mike Estadt, OSU Extension Educator, ANR, Pickaway County
- **OSU Extension Agronomy & Farm Management Resources**
 - Chris Zoller, OSU Extension Educator, ANR, Tuscarawas County
- **Lessons Learned from Building a Farm Shop**
 - Matt & Luke Durbin, Durbin Farms

BEEF QUALITY ASSURANCE... will be held August 25th at 7pm at the Sugarcreek Stockyards. The Tuscarawas County Cattle Association will provide drinks. Please call 330-339-2337 to pre-register.

AGRICULTURAL WORKERS... are usually categorized in two ways. They are either an “employee” or an “independent contractor.” Depending on how an agricultural worker is labeled determines the duties and liabilities of the agricultural employer.

Generally speaking, if an ag employer has the right to control the work of an ag worker, then the ag worker is probably an employee. This means that the ag employer must abide by a whole host of federal and state laws that relate to labor and employment and can be found liable for any damages caused by their employees under the doctrine of vicarious liability. Vicarious liability is a legal doctrine that may hold an employer responsible for the actions of an employee -- so long as the employee was acting in the ordinary course of business. A good example of the vicarious liability doctrine in action is when a court decides to hold a farmer and/or farm business responsible for any spray drift damages resulting from an employee’s application of herbicide.

On the other hand, ag employers that use independent contractors are usually not liable for any damages that result from the actions of an independent contractor. This obviously makes the use of



independent contractors very appealing but comes at a higher cost than using an employee to do the work.

Simple enough right? Be careful with employees and spray drift or use independent contractors and be worry free. Not really. Although a big concern for ag employers are the liability issues that stem from employees' actions, having employees requires ag employers to fulfill multiple obligations under state and federal labor and employment laws, obligations that otherwise would not exist if an ag employer used an independent contractor to complete the work. Those obligations can include wages, overtime pay, hour restrictions, migrant and seasonal worker protections, tax concerns, and others. So, you see, labeling a worker as an employee or independent contractor goes far beyond just preventing a lawsuit against the ag employer.

Ag employers often think they are using independent contractors to complete work around the farm. But innocently, the ag employer may actually be using an employee to complete work around the farm and is probably violating federal and state law and exposing itself to fines and lawsuits. An ag employer must be careful when determining who is an employee and who is an independent contractor when looking for help on the farm.

More information is available in this OSU Extension Ag Law Blog: <https://farmoffice.osu.edu/blog>.

SOYBEAN APHIDS...may be in your fields. Based on recent scouting, we have noticed increasing populations of soybean aphids. As we go into the critical growth stage of soybean, this is also the most important time to check your fields for soybean aphids and see if you have exceeded the threshold of an increasing population of 250 aphids per plant.



To scout for soybean aphid, walk at least 100 ft from the field edge and count the number of aphids from 5 plants in 10 different locations. If your average is greater than 250 per plant, you'll need to come back and re-scout 3-4 days later. If the aphid population increased in that time, an insecticide application is recommended. Keep in mind that to accurately determine the threshold, scouting should be performed at least weekly and multiple times a week if aphids are active in fields.

See this OSU Extension C.O.R.N. newsletter: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-27/remember-soybean-aphids-they-might-be-your-fields>



SOYBEAN COST & RETURN DATA...from growers enrolled in the OSU Extension Ohio Farm Business Analysis and Benchmarking Program is described in this OSU Extension Ohio Ag Manager newsletter: <https://u.osu.edu/ohioagmanager/2021/08/12/soybean-production-costs-returns-in-the-u-s-and-ohio/>.

The table below summarizes gross returns, total expenses, net return per acre, and soybean price received for owned and rented soybean acres, Ohio Farm Business Analysis and Benchmarking Program, 2012 – 2019.

Year	Owned Land				Rented Land			
	Gross Return/Acre (Owned Land)	Total Expenses/Acre (Owned Land)	Net Return/Acre (Owned Land)	Price/Bushel (Owned Land)	Gross Return/Acre (Rented Land)	Total Expenses/Acre (Rented Land)	Net Return/Acre (Rented Land)	Avg. Price/Bushel Received (Rented Land)
2012	\$641	\$422	\$218	\$14.09	\$654	\$452	\$201	\$13.88
2013	\$599	\$443	\$156	\$13.08	\$594	\$435	\$158	\$12.94
2014	\$548	\$446	\$102	\$10.07	\$502	\$423	\$79	\$10.29
2015	\$428	\$396	\$32	\$8.83	\$426	\$432	-\$4.95	\$9.37
2016	\$510	\$413	\$97	\$9.30	\$508	\$442	\$66	\$9.42
2017	\$493	\$401	\$91	\$9.54	\$491	\$462	\$28	\$9.55
2018	\$546	\$423	\$123	\$8.95	\$554	\$443	\$110	\$8.85
2019	\$498	\$445	\$52	\$8.87	\$512	\$454	\$58	\$8.90
Ave.	\$532	\$423	\$108	\$10.34	\$530	\$442	\$86	\$10.40

NOW IS THE TIME...to clean grain bins prior to harvest. If the grain bins are already empty, they need to be thoroughly cleaned on the inside and outside. The walls and the floors need to be swept clean. It would be best to use a shop vacuum to reach and remove all grain remnants that are tucked into cracks and crevices as well as the central feed out auger. Be sure to clean off ledges above hatch doors and if there is a ladder on the interior of the bin, be sure that hollow rungs are cleaned out. While working in the bin, look for holes and cracks to the outside are detected and fixed.

On the outside of the bins, clean up any spilled grain, remove or mow weeds from around the base of the bin, and if there is an aeration fan, check the plenum for any accumulation of grain and remove it.

Other areas that should be cleaned to remove any accumulations of grain include augers, grain pits, grain elevator belts, grain driers, grain carts and truck beds, and combines and combine heads. Grain accumulations in any of these pieces of equipment could have been infested during the summer months. The rule of thumb is, if you can look into any of these pieces of grain handling equipment and be able to tell what the last grain crop that was run through it, it is not clean enough.



If a bin has had a known insect problem in the recent past where a residual population of the insect(s) could be hidden under the perforated aeration floor, fumigation might be the only option to destroy these hidden insects. The most likely product to be used for this purpose is aluminum phosphide (phosphine gas) which is sold under a number of different trade names such as Phostoxin, Fumitoxin and Weevil-Cide. When determining the proper dosage for treating the empty bin, one has to remember that the dosage is based on the total volume of the area into which the fumigant is being released.

Additional information and safety precautions can be found in this OSU Extension C.O.R.N. newsletter: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-27/it%E2%80%99s-time-clean-your-grain-bins-and-everywhere-else-around-your>.

BEEF CATTLE INVENTORY EXPECTATIONS...in the next few years are discussed by Dr. Andrew Griffith, University of Tennessee Extension, in this OSU Extension Beef newsletter: <https://u.osu.edu/beef/2021/08/18/expectations-of-cattle-inventory-the-next-few-years/#more-11351>.

Relatively low cattle prices the first half of 2021 and drought concerns in some major cattle producing regions will definitely result in a lower beef cattle inventory on January 1, 2022. This means a reduced supply of calves and feeder cattle, which should support prices in 2022. As prices increase, more heifers will be expected to be retained. This time of retention will further support feeder cattle prices. There is a chance that beef cattle inventory sees a slight increase in 2023 but certainly by 2024. However, the cattle market should be in a bull market at least through 2024 given the current situation.

These expectations could be disrupted by outside factors such as drought or supply disruptions. However, one cannot make decisions based on expectations of unknown disruptions.

NEW INSECT IPM GUIDE...now available from OSU Extension. This guide contains information on the biology and management of field crop insect pests in Michigan and Ohio. Content is available for many agronomic crops including field corn, soybean, wheat, alfalfa, and grass forages.

To access this Michigan State University & Ohio State University publication, please click here: <https://aginsects.osu.edu/news/msu-osu-insect-ipm-guide>.

USE SCIENCE-BASED PRACTICES...when weaning beef calves. When calves undergo prolonged periods of stress they are predisposed to disease and a failure to thrive in later stages of the marketing chain. There is scientific evidence to indicate that multiple stressors at weaning is physically and psychologically stressful for calves and should be avoided.

There are several alternative weaning methods to choose from apart from abrupt weaning, including: fence-line, two-stage, and the use of a trainer cow. Fence-line weaning keeps the calf from nursing, but still allows for social contact between cows and calves through a fence-line. Calves are typically separated from the cows by a fence-line for anywhere from 3-7 days until the calf and cow adopt independent activities.



Exploratory behavior is common in cattle, and calves will commonly pace the fence-line at weaning. Weaning calves into a familiar pasture is one way to help reduce their pacing and walking behaviors.

Two-stage weaning utilizes anti-suckling nose-flaps that are placed in the nostrils of a calf and prevent nursing, while still allowing social contact with the cow. The nose flaps are usually left in the calf for 7-14 days and are then removed when the calf is completely separated from the cow. Two-stage weaning is a viable option, however, to insert the nose flaps you will need to process calves through the chute and then a second time when you are ready to remove the nose flaps. While it is not common, it is a possibility that some calves may lose their nose flaps. Nose flaps are approximately \$2.25/unit, and these can be disinfected and used again the following year.



The use of a trainer cow at weaning is a method in which calves are abruptly weaned, but a mature, non-lactating cow is placed with the calves to help encourage calves to find the feed bunk and water faster, and to help decrease separation distress. The use of a trainer cow is a non-invasive, non-labor intensive management strategy that is a viable option for producers to implement. This method can easily be done in both pasture and feedlot settings, depending on availability of resources. This is also an ideal weaning method if a cull cow is used as the "trainer cow", as it is an easy way to supplement the cull cow and add body condition before marketing this cow. There are, however, considerations that should be made prior to using a trainer cow as an alternative weaning method. If a cull cow or non-pregnant cow is used as the "trainer cow", producers must control the cow's estrus cycle in order to prevent her from displaying estrus as this can increase walking behaviors in calves, especially bull and steer calves. If weaning calves in a feedlot, or if supplementing calves and the trainer cow on pasture, producers must provide enough bunk space such that calves are not intimidated by the trainer cow at the bunk in the early stages of weaning.

While weaning is inevitably stressful for calves, these alternative methods have been shown to minimize the amount of stress placed on calves during weaning. By using low stress handling techniques and decreasing the number of stressors simultaneously placed on calves at weaning, you will be setting your calves up for success in the next phase of production.

Additional details are available in this OSU Extension Beef newsletter:

<https://u.osu.edu/beef/2021/08/18/science-based-weaning-methods-for-beef-calves/#more-11327>.



USDA LAND VALUES...2021 survey has been released and is available here:

<https://downloads.usda.library.cornell.edu/usda-esmis/files/pn89d6567/5m60rq58k/zk51wf530/land0821.pdf>.

The table below summarizes farm real estate, cropland, and pasture average values for Ohio from 2017 – 2021 and provides the percentage change from 2020 to 2021. Because these are averages, there are values above and below the number provided below. Many factors can influence these numbers.

Category	2017	2018	2019	2020	2021	Change 2020-2021
Farm Real Estate Value per Acre (OH)	\$6,010	\$6,200	\$6,290	\$6,350	\$6,600	3.9%
Cropland Average Value per Acre (OH)	\$6,150	\$6,320	\$6,400	\$6,460	\$6,800	5.3%
Pasture Average Value per Acre (OH)	\$3,240	\$3,370	\$3,350	\$3,370	\$3,440	2.1%

(Source: USDA Land Values Survey, 2021 Summary)

CONFINED SPACES...on farms can be dangerous and deadly. Three farmers at a dairy in Mercer County died last week after entering a manure storage area. Examples of confined spaces on farms include manure pits, silos, and grain bins.

There are four primary dangers for working in confined spaces, the major risk being chemicals and gases that displace or consume oxygen, causing breathing difficulty for the worker. Another danger is the presence of toxins that can damage the respiratory and nervous systems and even cause death. Each confined space has its own specific dangers as well. For example, hazards specific to manure pits include hydrogen sulfide gas, oxygen displacement by gases, and drowning. Meanwhile in silos, the specific hazard is displacement of oxygen by nitrogen dioxide gas. All other hazards of confined spaces can still occur in manure pits and silos.

The gases in manure pits and silos pose a particularly difficult hazard because they are invisible. We as humans have a hard time responding to dangers we cannot see or touch. If you were to map the gases in a manure pit, you would see they appear in layers; they stratify based on weight compared to atmospheric air. Heavier gases sink to the bottom, while those lighter than atmospheric air will be found at the top. Hydrogen sulfide, carbon dioxide, carbon monoxide, and methane are all gases found in manure pits. Going back to our air map, we would see hydrogen sulfide near the bottom, carbon dioxide between the hydrogen sulfide and air, carbon monoxide mixing with air because of their similar weights, and methane above atmospheric air.

Of the manure pit gases, hydrogen sulfide and carbon monoxide are the only truly toxic gases, whereas carbon dioxide and methane have displaced and used oxygen for their formation, depriving the "air" in a manure pit of oxygen for respiratory use. However, all have maximum concentration thresholds that can be found in the accompanying table.



Silo Gases, although different in chemical makeup, still pose the same invisible threat. Nitrogen dioxide gas causes respiratory distress and can cause death within minutes if present in great enough concentration. It is also heavier than air, so will settle near the silage surface.

Confined spaces are a necessity on grain farms and livestock operations. Maintenance of these spaces is also a necessity. The last necessity we also need to remember when working in confined spaces is the safety of ourselves, our families, and our workers. Talking and educating the members associated with the farm can be the first step in preventing confined space emergencies.

Hazardous Gases and Concentration Thresholds*

Gas	Weight	Human Health Threshold
Methane	Lighter than air	Death at 500,000 PPM
Carbon Monoxide	Similar to air	50 PPM
Carbon Dioxide	Heavier than air	1,500 PPM
Hydrogen Sulfide	Heavier than air	5 PPM
Nitrogen Dioxide	Heavier than air	5 PPM

*Created from Ohio State University Factsheet AEX-591.9.3 and Michigan State University Factsheet "Beware of Manure Pit Hazards."

(Source: Haley Zinda and Dr. Dee Jepsen, OSU Extension, for publication in Farm and Dairy, August 19, 2021)

