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COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES









March 18, 2020 Issue Coshocton County Extension Office Closure

Ohio Farm Custom Rate Survey 2020 Wet Weather for the Rest of March eFields 2019 Results Webinar Slated for March 25

Winter Wheat Stand Evaluation
Emergency Preparation Considerations
for Beef Operations
Impact of Reported Coronavirus Cases
on Live Cattle Futures
March 18 Ag Update on WTNS
Upcoming Programs

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Hello Coshocton County! The past week has presented us with the real and difficult challenges related to the coronavirus outbreak better known as COVID-19. As are many, we at OSU Extension have been monitoring the situation and trying to adjust to this new challenge. As a result, we have postponed many of our upcoming programs and our office is closed to walk-in clientele as of March 17, 2020.

While our office is physically closed, our staff is still working to serve you! I can be reached by calling the Extension office at 740-622-2265 or to my direct line at 740-722-6073. I can also be contacted via email at marrison.2@osu.edu Make sure to check the Extension website at Coshocton.osu.edu for additional information.

As far as events, the following have been canceled: Coshocton County Dairy Banquet on March 20, National Ag Day Lunch on March 25, and the Pesticide and Fertilizer Re-certification sessions for March 19 and 26 over in Tuscarawas County. We have also rescheduled the Mortality Composting class for May 4 and the Backyard Fruit Production Class for April 28 (both could be postponed again).

A bright spot from last week was the 4 robotic milkers put into use at Daugherty Farms. What a great sight to see and to see how fast the cows learned their new routine. Congratulations to the Daugherty family!

Thank you for your patience, understanding and support during these unique and challenging times. If you need help, please do not hesitate to contact me. Stay well everyone. Together, we can help slow the spread!

Sincerely,

David Marrison

Coshocton County OSU Extension ANR Educator



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information visit:

go.osu.edu/cfaesdiversity.

Coshocton County Extension Office Closure

Governor DeWine recently issued a state of emergency and implemented a variety of strategies to reduce the spread of the disease. In order to do our part in reducing risk to our employees or clientele, we have implemented a teleworking plan. **OSU Extension offices will be closed to the public until further notice.** While our offices will be physically closed, we are committed to continuing to conduct our work as fully as possible. In recent years, we've invested in the technology needed to facilitate effective teleworking. We will utilize all our teleworking capabilities to continue serving our clientele and communities. You should continue to feel free to call, email, etc. with any OSU Extension staff member as you normally would. OSU Extension is deeply committed to the health and well-being of its staff and doing our part to help slow the spread of the Novel Coronavirus (COVID-19). If you have questions, please feel free to contact our office at 740-622-2265 or you can call David Marrison directly at 740-722-6073 or via email at Marrison.2@osu.edu

Ohio Farm Custom Rate Survey 2020

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

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. This year we are updating our published custom farm rates for Ohio.

We need 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: ohio farm custom rates survey 2020
Or: https://osu.az1.qualtrics.com/jfe/form/SV 7WN0eNQz3VO41nv

The deadline to complete the survey is March 31, 2020.

Wet Weather for the Rest of March

By: Jim Noel

Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-06/wet-weather-rest-march

Current Conditions...Soil moisture conditions remain wet due to last years very wet conditions along with an overall damp winter. Current soil moisture conditions can be found at the NOAA/NWS

website: https://www.cpc.ncep.noaa.gov/products/Soilmst Monitoring/US/Soilmst/Soilmst.shtml#

What it shows is Ohio is ranked anywhere from the top 5-25% of wettest years on record for soil wetness depending on where you are in Ohio. This is slightly drier than at the same time last year but bottom line it is still wet. The last 30-days of rainfall is generally between 90-140% of normal across Ohio. The extreme northwest corner of Ohio has been running at about 80% of normal. About 75% of the state has been running

wetter than normal the last 30 days with about 25% a little drier than normal. You can get all the latest information on precipitation at 4 km resolution at: https://water.weather.gov/precip/ This data is quality controlled by humans at the river forecast centers like OHRFC.

<u>Future Conditions...</u> The outlook for the rest of March calls for slightly above normal temperatures with much above normal rainfall. Temperatures for the week of March 16 will be above normal but with big temperature swings. Temperatures will likely run a little colder than normal the week of March 23. Rainfall will average 1.75 to 3.50 inches for the remainder of March, see NOAA/NWS/OHRFC attached image. Normal for that period is 1.5 to 2.0 inches. For April expect above normal temperatures and above normal rainfall. For May expect above normal temperatures with a gradual turn from wetter than normal to normal rainfall.

<u>Frost/Freeze Outlook</u>...Indications are even with somewhat above normal temperatures expected overall this spring, there is enough swings in the pattern to expect about a normal last frost/freeze across the state. Soil Temp Outlook...Soil Temperatures are running mainly in the 30s north of I-70 and in the 40s to the south of I-70. Temperatures due to the winter have generally been above normal. However, we expect them to trend close to normal due to the high amount of water in the soils. Therefore, even if air temperatures run somewhat above normal, evaporation off the wet soils will keep ground temperatures close to normal as we go into the growing season.

<u>For summer</u>, indications still remain a gradual turn from wetter to drier with warmer than normal conditions. Climate Outlook Websites...You can see all the latest climate outlooks at the NOAA Climate Prediction Center: https://www.cpc.ncep.noaa.gov For the latest Water Resources Outlooks for soil conditions, floods etc, you can monitor the NWS Ohio River Forecast Center Page at: https://www.weather.gov/ohrfc/WRO

eFields 2019 Results Webinar Slated for March 25

Have you been enjoying the 2019 eFields Report and are excited to learn more? The Ohio State Digital Ag team is hosting an eFields Results webinar on March 25th, 9-10 AM. Join us to learn more about the eFields program and results we are seeing across the state. The webinar will feature presentations highlighting popular trials including seeding rate, nutrient management, and crop management. We would also like to hear from you about what topics you are interested in seeing in eFields in the future.

There is no cost to attend; for more information or to register visit: go.osu.edu/eFieldsWebinar.



Winter Wheat Stand Evaluation

By: Dr. Laura Lindsey

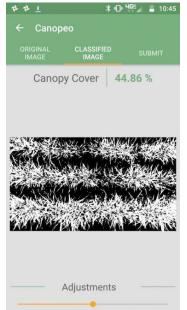
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-06/winter-wheat-stand-evaluation

Between planting in the fall and Feekes 4 growth stage (beginning of erect growth) in the spring, winter wheat is vulnerable to environmental stress such as saturated soils and freeze-thaw cycles that cause soil heaving. All of which may lead to substantial stand reduction, and consequently, low grain yield. However, a stand that looks thin in the spring does not always correspond to lower grain yield. Rather than relying on a visual assessment, we suggest counting the number of wheat stems or using the mobile phone app (Canopeo) to estimate wheat grain yield.



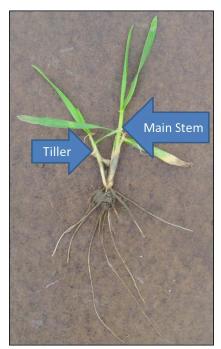
Wheat stem count method. Wheat stems (main stem plus tillers) should be counted at Feekes 5 growth stage (leaf sheaths strongly erect) from one linear foot of row from several areas within a field.

Canopeo mobile phone app method. Canopy cover should be measured at



Feekes 5 growth stage using the mobile phone application, Canopeo (http://canopeoapp.com). After accessing the app, hold your cell phone parallel to the ground to capture three rows of wheat in the image and take a picture. The app will convert the picture to black and white and quantify (as a percentage) the amount of green pixels in the image. For example, the screen shot here shows 44.86% canopy cover. (Keep in mind, this app will quantify anything green in the image. So, if you have a weedy field, the weeds will also be quantified in the canopy cover estimate.)

After counting the number of wheat stems or measuring canopy cover using the Canopeo app,



the table below can be used to estimate wheat grain yield. For example, if an average of 51 stems is counted from one foot length of row, the predicted grain yield would be 100 bu/acre. Similarly, if the average canopy cover was 35%, the predicted grain yield would be 100 bu/acre.

Grain Yield (bu/acre)	Stem Count (number/foot of row)	Canopy Cover (%)
85	27	17
90	34	23
95	42	29
100	51	35
105	63	41
110	80	47
115	100	53
120		59
125		65
130		71

This table was generated using data from two years and two locations (four different environments). During these two years, wheat grain yield was relatively high. We do not have data for wheat grain yield <85 bu/acre. However, we are continuing this work and hope to capture a wider range of yields to expand this table. For more information, please see: https://stepupsoy.osu.edu/wheat-production/yield-estimates

Source: https://u.osu.edu/beef/2020/03/11/mud-season/

Emergency Preparation Considerations For Beef Operations

By: Jeff Lehmkuhler, PhD, PAS Associate Extension Professor

Source: https://u.osu.edu/beef/2020/03/18/emergency-preparation-considerations-for-beef-operations/#more-8444

As we see the events unfold in response to COVID-19, I thought I would share a few things to consider in any emergency. Emergency preparedness first came to light for me early in my graduate student career when the hurricane hit North Carolina and my swine colleagues shared pictures of boats carrying feed to swine facilities. Being prepared became more evident in the aftermath of hurricane Katrina and the impacts on beef cattle operations near the coast. Granted we may not be near the coast and hurricanes are not a concern but, when the tornado went through eastern Kentucky a couple years ago, having plans for dealing with emergencies again become evident as we were rebuilding fences and accessing the supplies needed to do so. The following does not pertain to just the current situation and should provide a spark to think about preparing for emergencies you may experience on your operation.

Identify major weaknesses that are critical points in your operation to maintain the necessities for the well being and care of your animals. Start with the basics of nutritional considerations for assuring livestock will have access to feed and water. Then consider animal health management items that may be impacted if supplies are limited or take longer to acquire. This is not to say that you should hoard products, but rather plan well and consider the "what ifs".

As we are entering spring and pastures are greening up, feed resources may not be top of mind. You should consider a plan for an emergency that may occur at any time of the year. Short hay stocks this past winter was an example. Buying hay tarps to store extra hay to allow a 20-30% carryover is just one option to consider. I recently read that vitamin A and E prices have already increased 25-45% in some countries as a result of supply issues since many of the feed additives are manufactured overseas. A bag of mineral with a target intake of 4 ounces provides 200 cattle feeding days. Consider having enough mineral to carry you a couple months under current situations. If you have 20 cows and 20 calves, then you can plan for a bag of mineral to last about 5-7 days.

Check feed bins and allow extra time for delivery. Often, we forget about checking the feed bin or creep feeders then scramble to have the feed mill deliver feed the next day. Consider having a few hundred pounds in bags or alternative storage such as metal drums as a backup. When considering feed for backup, rotate the feed and don't purchase feed that has moisture added in the form of molasses or other wet feedstuffs that would encourage mold growth while in storage for a month.

Those that utilize solely municipal water should always have a backup plan. A busted water main could shut off your water supply until it is repaired. During the ice storm of 2009 electricity was out for an extended period and those on well pumps needed a backup generator to pump water. Above ground storage tanks can be used during warmer months and in-ground storage can be considered for year-round access. Dr. Higgin's water capture from barn roof system is a great example of having an alternative water source. These are not new concepts but bringing back the old cisterns approach that we have abandoned. Developing stream, creek and pond water sources can also be considered if available on the farm.

Animal health products that are a routine part of your operation should also be considered. As an example, you may consider acquiring your vaccines for immunization earlier than normal. Many of the products have an extended shelf life and when stored under the label recommendations will be effective to the date on the box. If you have not already done so, you should consult your veterinarian to develop herd treatment protocols for potential diseases and disorders. Many antibiotics today require a prescription from your veterinarian and having a valid client-patient relationship improves your ability to obtain speedy professional consultations. Larger operations may need to consider alternative labor pool resources. In the event of a family emergency, who is trained to take care of your livestock? Do they have access to phone numbers for the neighbors, veterinarian, feed supplier and others? Farmhands may a family emergency and unable to work which places their tasks on you or other personnel. You may need a plan for extra help whether it be family, a neighbor or a

hired hand that is trained in livestock management. Accidents happen on the farm and thinking through the labor supply may be all that is needed so you can act quickly.

This is not an inclusive list of things to consider when preparing for emergencies. The intent of the article was only to provide a foundation to stimulate the thought process of developing action plans in the event of an emergency. Being prepared and planning will alleviate some stress and allow you to better focus on the tasks at hand. Reach out to your county Extension offices for emergency preparation information. USDA resources are available online that are basic points for consideration when developing contingency plans. Take some time to consider your operation's emergency preparations and develop plans if they are not in place already.

Impact of Reported Coronavirus on Live Cattle Futures

By: Dr. Elliott Dennis, Assistant Professor, Livestock Marketing Economist, Department of Agricultural Economics, University of Nebraska – Lincoln

Source: https://u.osu.edu/beef/2020/03/18/impact-of-reported-coronavirus-cases-on-live-cattle-futures-implications-for-future-feedlot-placements-and-risk-management/#more-8462

The media and market attention surrounding coronavirus (COVID-19) has been near deafening. Uncertainty surrounding the severity, transmission rates, case fatality, and government policies has induced large amounts of volatility into the markets. Market analysts are still trying to sort through and estimate the impacts that COVID-19 will have on country specific economic growth, consumer spending, and food purchases away from home.

Beef is currently wading through how COVID-19 will impact domestic (retail vs. grocery) and export demand. The recent government suggestions on "social distancing" and "self-quarantine" have many wondering how this will affect food service demand. Given that beef has a large market penetration in food service and roughly half of total US food expenditures is consumed away from home there is likely to be some decrease in domestic beef demand. Beef export demand is going to be largely affected by the number of growing cases and government imposed containment strategies in countries where the US exports large amounts of beef. Prior to the sustained market impacts of COVID-19, beef supplies were already pretty large, with 2019 commercial production larger than 2018 levels and quite a bit larger than the five-year average. For example, in December 2019 commercial beef production was roughly 540 million pounds, about 10 million pounds higher than 2018 and 60 million pounds higher than the five-year average. The large increase in commercial production came in the form of larger than average carcass weights – heifers 12 pounds and steers 14 pounds higher than the five-year average. Record beef supplies were accompanied by larger than average production of pork and poultry. In other words, there was a lot of protein on the market that needed to find an (export) home prior to any shocks due to COVID-19, or else there was going to be a lot of protein on the domestic market.

<u>Live Cattle Contracts Response to Market Uncertainty</u>

So how has the futures market reacted to the ongoing news of COVID-19? Figure 1 plots the closing prices for the April, June, August, October, and December Live Cattle Futures contract. Each line represents how contracts traded within a given day. Five different lines are highlighted in order to illustrate the shape and magnitude of the live cattle contract movements. For example, on January 21 (the first day the World Health Organization (WHO) began reporting COVID-19 cases) the markets were trading in the relatively same magnitude and structure as January 2. As the number of cases grew, the market slowly started sell off with a huge market movement coming when China "readjusted" the way they reported cases (February 18). By the time we were in the beginning of March, COVID-19 was starting to become problematic in most parts of Europe and the market was further discounted. Then on March 12 the United States announced a travel ban from Europe, UK and Ireland which caused the largest downward shift.

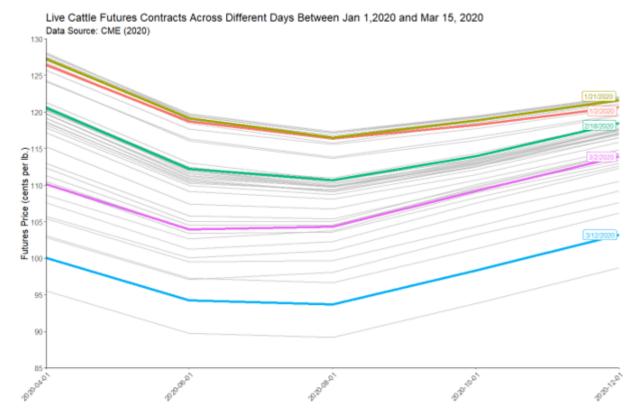


Figure 1. Live Cattle Futures Contracts Across Different Days between Jan 1, 2020 and March 15, 2020.

Notes: Data comes from CME Group (2020) for current and deferred live cattle futures contracts. Select dates are highlighted based upon major market news reports regarding Coronavirus (COVID-19).

The fundamental market shape (difference in price between different contracts) on the deferred contracts in Figure 1 appears to stay similar during this time period. Under this case then it would be nothing more than a change in magnitude (i.e. vertical shift) implying that the risk was similar across all months. However, upon closer examination, there have been significant changes in the deferred market structure. Figure 2 plots the difference in remained similar. Under the assumption of no change in market structure the lines should be horizontal lines. All price differences between live cattle contracts have increased in magnitude and volatility since the last week in February. This is most likely a result of more information coming forward about the transmission and spread of COVID-19. For example, the difference between the April and December contract lost \$8.90 between January 2 and March 13 but only \$3.64 between January 2 and February 18. Similarly, the difference between the June and December contract lost \$6.95 between January 2 and March 13.

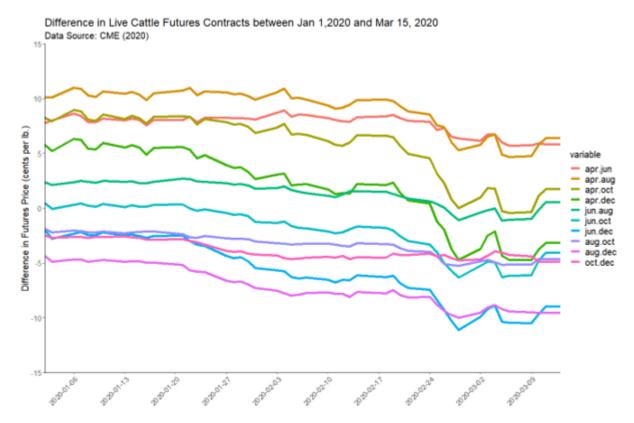


Figure 2. Difference in Live Cattle Futures Contracts between Jan 1, 2020 and March 15, 2020.

COVID-19 Cases Occurrence and its impact on Live Cattle Contracts

One of the most important pieces of market information available to monitor the COVID-19 situation is the number of cases. The market argument is that as the number of cases increases consumers (domestic and export) demand for beef products will decrease. Domestic and export demand decreases due to "social distancing" and "self-quarantine" causing them to consume less beef both at and away from home. Under this assumption then it is possible to map a weighted cumulative number of cases to live cattle futures. I attempt to verify this hypothesis posed by market analysts by weighting the cumulative number of COVID-19 cases plus other controls to live cattle futures contract prices. To do so, I create a weighted average of cases where 80% of COVID-19 cases come from the US, and the remaining 20% comes from countries where the US exports beef (i.e. Japan, South Korea, China, Canada, Mexico, and others). The 20% is weighted by each country's relative share of US beef exports. Thus, by regressing the live cattle futures price for a given contract on the weighted cumulative number of cases plus other controls we can see how the market is incorporating this information. Figure 3 plots the coefficients for different Live Cattle contracts. Cases are the number of cumulative cases weighted by domestic and beef export share, Cases Sq. is the square of these cases, Reporting Error is a dummy variable indicating how much the change in Chinese reporting on February 17 impacted the market, Trend and Trend Sq. is a linear and quadratic trend, respectively. Symbols are the point estimates and horizontal lines through points represent 95% confidence intervals. When the confidence interval overlaps the black dotted line, the estimate is considered "not significant at the 0.05% level".

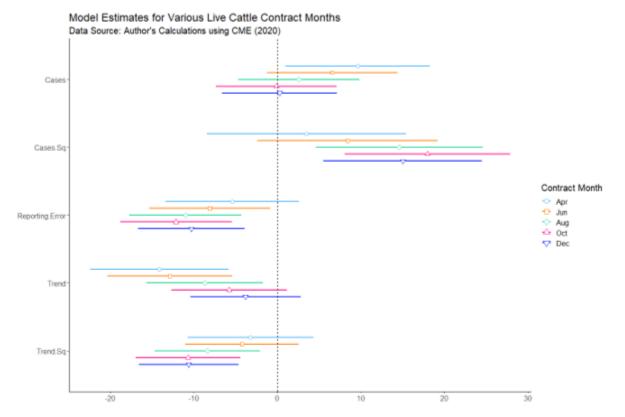


Figure 3. Coefficient Estimates from Regression of Daily Live Cattle Futures Contract Price on Beef Export Weighted Number of COVID-19 Cases between Jan 1, 2020 and March 15, 2020.

Notes: Data comes from USDA-FAS (2020) Monthly Export Reports for select countries. Cases of Coronavirus (COVID-19) comes from the World Health Organization (2020). The weighted number of COVID-19 cases for major beef exporting locations is calculated as the weighted product of the 10 year beef export share and daily counts of COVID-19 cases by country. Daily Live Cattle Futures prices comes from the Chicago Mercantile Exchange (2020).

So, what do these results tell us? First, the number of cumulative cases is not important to the market but rate of change that cases are reported. As the number of cases increases exponentially the market discounts more aggressively, particularly in deferred contract months. This would send market signals to feedlots to slow feeder cattle placements in the fall if the number of cases continues to grow rapidly. Likewise, it would also suggest lighter placement weights are preferred. Second, the reporting error by China had a significantly negative impact on live cattle prices across all contracts but the effect was larger in more deferred contracts signaling how the market values correct reporting of the number of cases. Third, the general price trend has been to discount live cattle futures but at a decreasing rate. This implies that while markets have been discounted live cattle contracts the rate of this discount has been decreasing. This is one positive takeaway. It would be far more troublesome to see a negative Trend AND a positive Trend Sq. indicating discounts at an increasing rate. Exploring other specifications to included first differenced prices, one-day and ten-day lagged weighted cases, and global number of cases rather than an 80% domestic and 20% export weighted price does impact the magnitude of these estimates but on average a similar story is found. The data or codes used to replicate these results can be obtained by contacting me at elliott.dennis@unl.edu.

Appendix Figures

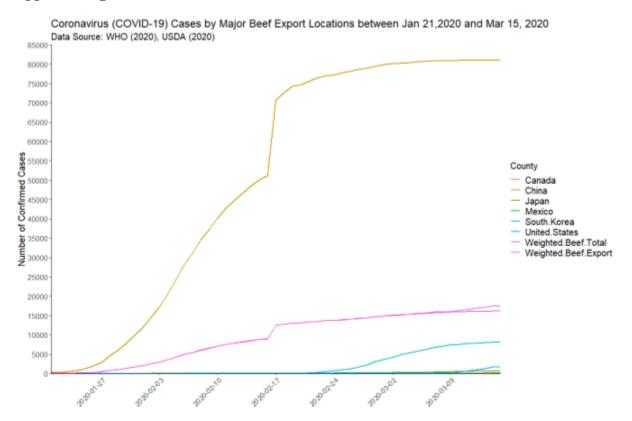


Figure 1. Cumulative Number of COVID-19 Cases in Various Countries between Jan 21, 2020 and March 15, 2020.

Notes: Data comes from USDA-FAS (2020) Monthly Export Reports for select countries. Cases of Coronavirus (COVID-19) comes from the World Health Organization (2020). The Weighted Beef Export is the weighted number of COVID-19 cases for major beef exporting locations calculated as the weighted product of the 10 year beef export share and daily counts of COVID-19 cases by country. The Weighted Beef Total calculates it as 80% US cases and 20% of Weighted Beef Export cases.

March 18 Ag Update on WTNS Radio

WTNS Radio OSU Extension Update for March 18, 2020

By: David Marrison, ANR Educator

Source: https://coshocton.osu.edu/program-areas/agriculture-and-natural-resources/wtns-osu-extension-agriculture-update/news

Hello Coshocton County! Wow, what a difference a week makes. The past week has presented us with the real and difficult challenges related to the coronavirus outbreak better known as COVID-19.

As are many, we at OSU Extension have been monitoring the situation and trying to adjust to this new challenge. As a result, we have postponed many of our upcoming programs. We are grateful to WTNS for announcing our updates as well as many others. This radio station is truly a shining star in our community. Thank you WTNS.

As a reminder, here is a rundown of some of the upcoming Ag Extension events which have been canceled.

Tonight's Mortality Composting Workshop has been postponed until Monday, May 4th from 6:00 to

8:00 p.m.

The Coshocton County Dairy Banquet scheduled for Friday, March 20 has been canceled and will not be rescheduled

The Backyard Fruit Production Workshop scheduled for March 23 and then changed to April 28 has been postponed indefinitely. We will reimburse the registration fees for this program and reschedule for a later date.

The Pesticide and Fertilizer Re-certification Sessions scheduled for March 19 and 26 over in Tuscarawas County have both been canceled.

The National Ag Day Luncheon scheduled for noon on March 25 has been canceled.

The Coshocton County Master Gardener meeting scheduled for Wednesday Evening March 25 has also been canceled.

We understand these cancellations may cause an inconvenience to many, but please know that health of individuals and the health of our community at-large is our highest priority. Our office is currently closed to walk-ins but we can be reached by calling us at 740-622-2265. We also encourage you to check out our website at Coshocton.osu.edu

One thing coronavirus outbreak has not slowed down is our local farmers. In fact, social distancing is not a new thing to farmers. We have lots of space on our farms to be away from others. Biosecurity is also something that has been practiced for years by farmers to prevent diseases from being transmitted from one barn to the next. This is exactly why dairy calves are raised in personal calf hutches and why visitors are not allowed in our swine operations. It is all about not spreading diseases.

With regards to coronavirus, we in agriculture should be thinking on how we can help slow the spread. So what can a farm or agricultural business do to help?

First....**Wash. Your. Hands.** Obviously, make plenty of hand washing stations and/or containers of sanitizer available to your employees. This includes in barns, offices, trucks, sheds, etc. Hand washing is one of the best ways to prevent the spread of the virus.

Second, it is a great time to review your employee handbook and sick leave policy. Companies should encourage any employee showing signs of illness to stay home to prevent the spread of disease to healthy workers. This might be a time to analyze whether a temporary increase in available sick leave is appropriate. Also what is your back-up plan if multiple members of your family become ill? I would encourage you to have a Plan B—and if that does not work, remember there are 26 letters in the alphabet.

Third, **flattening the curve is key**. Isolation will be the key, so now is the time to retreat into the farm shop and work on equipment. If a parts-run is needed, be quick and don't hang around to shoot the breeze.

Fourth, **take a deep breath.** We as farmers are prepared for this. The delayed harvest of 2018 and the wet year of 2019 has built our resilience. We, as a community, will get through this virus. Take a deep breath, enjoy quiet time with family and know that the freshness of spring planting season is not

that far away!

IN CLOSING.....At OSU Extension, we are proud to work for Coshocton County to help improve our families, farms and businesses. Please feel free to contact the OSU Extension Office in Coshocton County for more information at 740-622-2265 or visit our website at coshocton.osu.edu.

This is David Marrison, Extension Educator for Agriculture & Natural Resources wishing you a good and safe day.

Upcoming Programs

- Backyard Fruit Production Workshop: April 28
- Mortality Composting Workshop- May 4
- Master Gardener Plant Sale: June 6
- Summer Pasture Walk: July 28
- Summer Pasture Walk: August 25

Check out upcoming programs at:

go.osu.edu/coshoctonevents