

# Morrow County SCARLET & GRAY News

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## OSU Intern, Sara Deakin

Hello, my name is Sara Deakin. I am a senior at Ohio State studying Community Leadership specializing in Extension Education. I also have a minor in Production Agriculture and I have an Associate's degree in Agriscience Education. For those who do not know what that means, my end goal is to become an Extension Educator for 4-H Youth Development. I am interning with Morrow County Extension this semester, so you may be hearing from me or about me throughout the next few months. I grew up in Franklin County Ohio (Columbus) and currently live in Sunbury. I took projects such as dogs, market hogs, beef feeders, market rabbits, and market goats. I also was involved in shooting sports and vet science projects. While in 4-H, I was also a member of the Junior Fair Board and a camp counselor. I also served as a camp counselor for Ohio 4-H State Leadership Camp in 2018. I was a member of two 4-H clubs the Fantastic Futures and the K-9 Wonderdogs. I loved being involved in 4-H and even got to go on a few trips as a 4-H'er. In 2016 I attended State Leadership camp and in 2017 I attended Citizenship Washington Focus in Washington D.C. Outside of 4-H, I train and show dogs in agility at the national level. I currently have 2 dogs; Steeler is a 9.5-year-old Shetland



Sheepdog and Venture is a 9-month-old Shetland Sheepdog. I am looking forward to working with all of you and getting to know what it takes to be a 4-H Extension Educator. If you have any questions or concerns, feel free to reach out to me my email is [deakin.5@osu.edu](mailto:deakin.5@osu.edu).

## National Wheat Yield Contest – Ohio Results

Congratulations to Ray VanHorn for making the top 10 in Ohio for the National Wheat Yield Contest. Ray is a 3rd generation farmer in Morrow County and he grew 1300 acres of wheat in 2020. Ray grows varieties of wheat from Pioneer, Dyna Grow and Becks. He is also on the Ohio Small Grains and US Wheat board of directors. There were 20 entries from Ohio in the National Wheat Yield Contest and 11 completed the contest. This is only the 3rd year for the contest so there is hopes that the competition numbers will continue to increase.

Every year farmers from all over the U.S. enter and compete in the National Wheat Yield Contest. The results are broken down by category and then by individual state. The national results can be viewed here <https://wheatfoundation.org/past-contest-winners/> and the state results are below.

### Ohio Results National Wheat Yield Contest

Placing	Contestant	Address/County	OCWGA District	Final Yield	Seed Brand
1	Mark Hoorman	Napoleon/Henry	1	118.27	AgriPro
2	Jim Dauch	Bellevue/Sandusky	2	116.02	Pioneer
3	David Lutz	Warren/Trumbull	5	114.67	Ebberts
4	Doug Goyings	Paulding/Paulding	3	113.11	Strike
5	Mark Hoorman	Napoleon/Henry	1	110.64	Synergy
6	Keith Kemp	W Manchester/Darke	6	109.12	Pioneer
7	Ronald Saum	Ft Jennings/Allen	3	106.52	Wellman
8	Fred Miller	Bucyrus/Crawford	4	101.03	AgriPro
9	Brian Sutorius	Vickery/Erie	5	100.50	Pioneer
10	Ray VanHorn	Mt Gilead/Morrow	4	96.35	Pioneer
11	Martin Quigley	Martinsville/Clinton	9	93.69	Dyna-Gro

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## We are here to help you!

Since our county is red due to COVID guidelines,  
we are staffed by appointment only,  
and available by phone during all work hours.

Please give us a call to meet your needs!

**419-947-1070**



# AGRICULTURE



## Planning for the future of your farm webinar Sign up for Carri's Weekly Ag News

OSU Extension will host a virtual three part "Planning for the Future of Your Farm" workshop on February 15, 22 and March 1, 2021 from 6:30 to 8:30 p.m. via Zoom. This workshop will challenge farm families to actively plan for the



future of the farm business. This workshop is designed to help farm families learn strategies and tools to successfully create a succession and estate plan that helps you transfer your farm's ownership, management, and assets to the next generation. Learn how to have the crucial conversations about the future of your farm.

Topics discussed during this series include:

- Developing Goals for Estate and Succession
- Planning for the Transition of Control
- Planning for the Unexpected
- Communication and Conflict Management during Farm Transfer

- Legal Tools & Strategies
- Developing Your Team
- Getting Affairs in Order
- Selecting an Attorney

This workshop will be taught by members of the OSU Farm Office Team featuring Peggy Hall

& Jeffrey Lewis, Attorneys from OSU Agricultural & Resource Law Program and David Marrison, Extension Educator for Coshocton County.

Because of its virtual nature, you can invite your parents, children, and/or grandchildren (regardless of where they live in Ohio or across the United States) to join you as you develop a plan for the future of your family farm.

Pre-registration is required as one packet of program materials will be mailed to participating families. Electronic copies of the course materials will also be available to all participants. The registration fee is \$40 per farm family. The registration deadline is February 10, 2021.

To register, go to: [https://osu.az1.qualtrics.com/jfe/form/SV\\_5jceZbJ0C1hRoAl](https://osu.az1.qualtrics.com/jfe/form/SV_5jceZbJ0C1hRoAl)

For more information about this webinar contact David Marrison at the Coshocton County Extension office at 740-622-2265 or by email at [marrison.2@osu.edu](mailto:marrison.2@osu.edu).

When the pandemic hit in March, I wanted a better way to get Agriculture, Horticulture and Natural Resources news out to the folks of Morrow County. I currently have an email list that I send updates to, but I wanted something a little better.

Therefore, I created a weekly newsletter that can be sent to your email. It contains events, educational items, and news. It is delivered through email every Monday. If you would like to receive the Morrow County Agriculture, Horticulture and Natural Resources News please visit <https://u.osu.edu/morrowcountyag/> to sign up.

## 2020: Has it changed how consumers shop for and consume beef?

By Mike Estadt,  
OSU Extension Educator, Pickaway County  
(originally published in Ohio Farmer on-line)

If we answer this question with the knowledge at hand this is going to be a very short article. We really do not know yet. But what we do know is there have been some fundamental shifts in how the consumer shops and how they consume not only beef but food in general. Will these shifts remain and what might we expect in the years to come?

Let us look at the year in review and try to understand the effects on the larger food industry as well as local livestock growers. The New Year came in with some optimism for agriculture as the effects of the trade war was dissipating, cushioned by USDA financial assistance via the Market Facilitation Program. For livestock producers, specifically pork, the effects of the Asian Swine Fever which decimated the Chinese breeding herd by 40%, gave rise to optimism for increased exports to China.

In late December and early January, reports of a flu-like disease began to be reported out of the Hubei province, in the city of Wuhan, China. The disease caused by SARS-CoV-2, would soon become a worldwide pandemic known as COVID-19.

By March in response to the increasing numbers of infections and resulting deaths, shutdowns of businesses, schools, hotels, and restaurants literally destroyed demand for institutional food suppliers. At the same time Americans were hoarding paper products, sanitizing wipes and food, especially meat. Store shelves were empty, and some forms of rationing meat began to take place. At the same time milk was being dumped and vegetable fields plowed under as processors could not convert institutional packaging quickly enough to supply the retail sector.

The virus continued to wreak havoc on the economy and drove the national unemployment

rate to a high of 15% in April. Center for Disease Control data reported a 300-400% increase in anxiety and depression. This may explain record sales of comfort foods such as canned soups and baking supplies disappearing from grocery shelves. As quarantines and lockdowns continued baking and cooking meals from home continued to increase. At one point during the peak of the pandemic, consumers reported that 88% of meals were being consumed at home.

Just as grocery stores were beginning to recover from this disruption, a larger aftershock would be felt in the food supply chain as workers in beef and hog processing plants began to test positive for the COVID19 virus, leading to major shutdowns of some of the largest plants in the country. These shutdowns resulted in a 40% decrease in beef and swine processing compared to 2019.

Wholesale prices soared but the prices paid to farmers and ranchers declined due to no available processing. Beef producers were able to slow growth rates of feedlot cattle and the prospect of euthanasia of finished hogs loomed over the Midwest. Fortunately, by June processing was able to recover to pre-pandemic levels.

This nationwide series of events gave rise to an unprecedented demand by consumers in communities across America for locally raised pork and beef. But this was not without complications as small mom-and-pop processors, already at nearly full capacity began to book harvest dates sometimes as far out as a year. To make things even more complicated, the supply of deep freezers was quickly exhausted as demand quickly outstripped supply. The backlog for deep freezers was 6-9 months out.

What trends will remain when the pandemic subsides? Online and e-commerce will continue to be a major shopping behavior. If you do not have an online presence, you need to get one soon. If you have one, update it to accept online ordering and payment. Consumers will be cook-



Is this our future? Place an order on [MunseeMeats.com](http://MunseeMeats.com) that will be filled and stocked in this Automated Farmers Market. You then receive a confirmation QR code that your order is ready. When you arrive at the locker you simply scan the QR code and retrieve your order from the self-serve lockers. Photo: Jason Mauck

ing more meals at home in the future than prior to COVID-19. This means they will be searching for information to help them cook at home. Recipes and YouTube videos need to be a component of a successful social media marketing strategy.

Not only will consumers buy more food online, but the return to remaining restaurants may also take on a different look as online meals-to-go prepared at "Ghost Kitchens" (food preparation centers with meal delivery services) will likely more common place.

The larger food industry will be spending

time and research into making the food processing infrastructure more resilient and less prone to disruptions such as Covid19. More inventory capacity, factory automation and creating linkages to regionally based processing facilities will be explored. Local producers should concentrate their efforts in maintaining positive customer relations, exploring possible cooperative partnerships with other farmers and ranchers and alternative harvesting and marketing infrastructure. What local food producers do now to capitalize on these recent trends could set the course for a fruitful and successful future.



# AGRICULTURE



## Pasture management:

# It's all about maximizing the grazing season!

By Victor Shelton, NRCS State  
Agronomist/Grazing Specialist

Winter is setting in. The impact of the dry spell in late summer and early fall is now more evident as stockpiled forages that normally would have lasted a bit longer start running short. I've walked most of my pastures to do a quick assessment. Hay will come early this year.

That "walkabout" helped me assess a few areas that could use a little attention besides estimating any remaining forage. A couple blackberry patches in one field certainly got my attention. Long, wet springs seem to be to their liking. I will certainly have to put a bit more pressure on them this coming year and probably clip or spray early to get them under control. Small patches where they were denser created too much competition for sunlight and water for the underlying forages and they were set back. When the canopy of perennial or annual weeds start exceeding more than thirty percent, you will have reduced forage growth and I also believe reduced nutritional value to some degree.

When it comes to briars, grazing intake is also going to be reduced and can you blame them? Who would want to have to try and eat around those thorns? It's bad enough just trying to pick a few berries from them during the summer for a pie!

I have successfully grazed/browsed them out a few times, but you must catch them early when they are immature and there has to be a lot of forage around them to entice the consumption and provide competition for any regrowth. Even then, it's best paired up with an early clipping and some spraying. It seems a bit odd talking about blackberries in January, but it's never too early to start planning out a strategy.

I will plan to skip these patches the best I can if I frost-seed any clover in the next month or so. Why? Because if I end up having to spray these



They might make good pies, but blackberries in a pasture can reduce grazable acres.

patches, most legumes, especially seedling legumes, will not survive that endeavor. If there are not satisfactory perennial grasses left, which should be a minimum of at least six plants per square foot normally, then I may drill in more seed. You want good seed-to-soil contact, especially for larger grass seed.

I've also taken the more conservative route and just fed or unrolled some hay on the site and let the cows tread the seeds in some. This takes a bit of thought and care. You certainly don't want to try and do this under extremely wet or muddy conditions because we don't want to bury the seed. You also don't want to leave too much unconsumed material behind, or it can hamper growth come spring. The hay needs to be good enough quality that they want to consume most of it, but also mature enough that it might contain some viable and, ideally, desirable grass seed also.

The short residence of livestock on these sites while consuming and digesting as well as the redistribution of such material not only helps to "plant" seed, but it also adds nutrients, organic matter and food for bacteria, fungi and other organisms in the soil. All are valuable to restoring the site. Either way, you will still need to make sure to repeatedly reassess the site throughout the upcoming year or two for secondary maintenance.

Clipping or mowing to reduce bramble growth and reduce competition should be done as early as possible to get a jump on it and enable you to keep the canopy in check. If time allows and patches are small, spot spraying when plants are young in the spring followed later by a clipping can really set them back. If you have kept the briars at bay for most of the summer by mowing, then a fall herbicide application with sufficient regrowth can be very controlling. If you have passed them by and let them create a spiny jungle, then you might be better off mowing them close and starting over the next spring. Contact your local extension office or chemical dealer for the appropriate herbicides and rates.

Enough on briars. Let's go back to frost seeding legumes. Frost seeding is certainly one of the least expensive ways to enhance the stand of legumes in your pastures. It is basically the process of broadcasting the legume seed onto the soil surface during the winter dormant months. For the most part, I usually say the ideal time is somewhere between Christmas and Valentine's Day. If I really had my choosing, I'd wait until there is a light snow on the ground and then do the sowing. The snow serves two good purposes. One, it helps "catch" the seed and transport it to the ground and two, it serves as a great marker for the tractor or ATV.

Frost seeding relies on the freezing-thawing action of the soil, which is honeycombing the soil surface with ice crystals. This causes the soil surface to expand and contract, allowing the small

seed to find a route into the ground. During warmer winters, you might not always get enough action and if you don't get good seed-to-soil contact and the seed does not get covered; then it is less likely to survive. I doubt that will be the problem this year. Too often, when left lying on the soil surface, the sun can warm the ground and seed enough to initiate germination. It has little chance of surviving if this happens before the occurrence of another killing freeze. The seed that is protected by the soil will not be as likely to be impacted by the sun and is more likely to wait until the proper time period to germinate.

Competition is probably your next worst enemy. Now, I would hope that most would not consider broadcast seeding or frost seeding into a heavy stand of grass, but I have seen it done, usually with less success. If you know you are going to be frost seeding legumes into a pasture then I would recommend waiting until after the forage has become dormant and then graze it down to about 3-4 inches to remove any excess

growth (not a problem now) to allow the seed to find its way to the soil surface and wait for that freezing action. Grazing closer to the soil surface also helps to depress early spring growth of the grass which will give the legume seedling a fighting chance. Now that reminds me to mention, don't hit those newly seeded fields with nitrogen in the spring either. All this does is to promote the grass growth in the sward and reduce those new legume seedlings' chances. They won't have the root base or energy stored up to compete with established grass, especially with a boost of nitrogen!

In closing today, you get three things usually for nothing: air, sunlight and water. Pretty much everything else you will pay for one way or another. All three are needed to grow forage. Maximize forage production, be as efficient as possible in grazing and maintaining it, and it will have a positive impact on your bottom line.

Remember, it's not about maximizing a grazing event, but maximizing a grazing season! Keep on grazing!

## OSU Extension Small Ruminant Webinar Series

By Brady Campbell,  
Program Coordinator, OSU Sheep Team

Are you looking for new tips and tricks on how to improve your small ruminant operation this winter? Maybe you're gearing up for lambing and kidding season and you want to make sure that you have everything you may ever need and more when it comes to supplies and knowledge. Perhaps last year you vowed to change your nutritional program to meet the demands of your female based during late gestation and lactation. Or what about marketing? We know the challenges of marketing during the spring of 2020. What did we learn and how can we prepare for issues like these in the future? If these are areas of interest for you, keep reading. Trust us — your livestock will thank you!

The Ohio State University Extension and Department of Animal Sciences is pleased to announce the dates of small ruminant production focused webinars highlighting the topics above on February 16th and March 16th. Webinar registration is quick, easy, and FREE. To register, please visit <https://go.osu.edu/smallruminantwebinars2021>. Once connected, enter your first and last name, email address for webinar access, and location. Once completed, hit the register button at the bottom of the screen and BAM, mission complete. Webinar registration for all 3 events use the same link. For those that are having difficulty registering for the webinars or are interested in joining via phone, please contact either Brady Campbell or Christine Gelley using the

contact information below for assistance. Even if you are unable to join the webinar during the slated time, please register for the programs as each registrant will be given access to the recordings once the programs are complete.

For those interested in the details of each event, please find the descriptions listed below.

**Small Ruminant Nutrition**  
Tuesday, February 16th | 7:00 p.m. – 8:30 p.m.

Members of the OSU Sheep Team will address the importance of providing adequate protein, carbohydrates, and minerals in the forms of processed grains, hay, grazed pasture, minerals, and supplements to your flock/herd. A Question and Answer session will be included.

**Weaning, Sorting, and Selling- Lambs, Kids, and Spent Breeding Stock**  
Tuesday, March 16th | 7:00 p.m. – 8:30 p.m.

Members of the OSU Sheep Team will offer strategies for weaning lambs/kids and preparing them for joining the breeding flock or entering the meat processing chain. Also included will be examples of marketing strategies and determining what to do with ewes/does and rams/bucks that are no longer meeting breeding needs of the flock/herd. Question and Answer sessions will be available during each session.

We look forward to "seeing" each of you there. Good luck with your 2021 lambing/kidding season and Happy Shepherding!



# AGRICULTURE



## Managing risk: Using heat lamps on the farm

By Michael Glos,  
Cornell University Guest Writer

(Previously published with Cornell Small Farms Program: April 7, 2014)

No farmer wants to have a fire, but we all practice fire prevention in different ways.

It is an accepted premise that farming is a daily lesson in managing risk. Some farmers are more risk averse than others but we all find our comfort level and work from there. For example: I am not comfortable borrowing \$100,000, while I know other farmers of my same scale who are. The risk of a fire on the farm is another area which is managed differently by each farmer. No farmer wants to have a fire, but we all practice fire prevention in different ways.

This spring I opened up my email inbox to find some very unsettling news. The night before there had been a fire at the Maine farm where I had first interned 20 years ago. The barn where I had learned to milk, harness horses, and generally catch the farming bug was a smoldering pile. And worse of all, it took the lives of all the animals in it, including one of the horses I had worked with. My heart went out to the Thayer's who could only watch in tears as a centerpiece of their farm went up in flames. Luckily no humans were injured or killed.

Through conversations with other farmers and firefighters, I know the truth about rural fires

and the role of the fire department. If you live rural and have a fire you should not depend on the fire department to come save your house or barn. We have seen too many fires destroy houses of friends and neighbors. Even the house of our local volunteer fire department chief burned while, ironically, he was at the fire station.

We have a fantastic network of volunteer firefighters who will come, but only in time to contain a fire, potentially try to rescue the occupants, and keep it from spreading to other structures. The fact is, it will likely be at least 30 minutes after I make that call that a fire engine will show up at my farm. Even with three volunteer stations within 5 miles of my house, the firefighters have to first get to the station after receiving the call and then come to my place. All the water has to be trucked in or pumps have to be set up to transport the water from our pond or the creek across the street. During this time the fire will be burning and spreading.

With those assumptions we know the most important thing to do is to prevent the potential of a fire on the farm and, secondly, to have a plan of what to do if we have one. Prevention primarily involves removing as many risks as possible and reasonable. I can only scratch the surface on preventative measures, but we know that buildings with power in them have an increased risk

of fire. Our equipment shed is unlikely to burn because it has no source to cause a fire, but our main barns and house, all with power, are at a higher risk. Add a propane heater, all wood construction, 1,000 bales of hay, feed, many electrical outlets, and freezers with motors and you have many potential sources of fire.

For the sake of this article I will primarily look at one potential source of fire on our farm: heat lamps. They were the cause of the fire in Maine, a number of other fires I have heard about, and two fires on our own farm. Heat lamps, generally defined, are portable hanging fixtures with bulbs in them (usually 150-250vw). They can be purchased at almost any farm or general hardware store and are usually cheap, under \$10.00.

A number of characteristics that are not always fully appreciated make heat lamps a high risk. Most are poorly made, with short thin cords, poor connections to the fixture, unreliable attachment points for hanging, and just general cheap construction. In addition, farmers generally don't have a good place to install them because many of us plan to use them "temporarily" and don't have a permanent set up. Perhaps it has gotten cold so a lamp is quickly hung up in the corner of a stall to warm a newborn lamb or 100 chicks that have just arrived. This heat lamp hangs in the corner, attached with baling twine- an accident waiting to happen.

As I mentioned earlier, we have had two fires on our farm since we began in 1996. One was in a greenhouse brooder not attached to, but very close to, the barn. We discovered the fire after it was basically out. Apparently, a brooder lamp had fallen into the bedding. Luckily, aside from the shavings (on wet ground), there was very little to burn. PVC hoops and plastic are not very flammable. But most of the chicks were sadly killed. We felt very lucky that the fire had not spread to our main barn-just feet away. We moved our brooder facility away from the barn and soon after started using "Ohio Brooders" that use heat bulbs but not the hanging fixtures. Not only are they safer, but they can use less power because smaller wattage bulbs are required and are a much better way to warm the chickens.

The second fire happened a year ago last spring. We thought we had learned from our previous mistakes. We were using thicker bulbs, and better fixtures. But one of these must have had a frayed wire internally that shorted out without tripping the breaker. The wires melted and the bulb dropped into the very dry straw in one of our piglet brooder boxes. I believe it is pure luck that I looked out at the sow barn on the way in for lunch. It appeared that the loose straw was blowing off the roof, but as I stepped into the house I had second thoughts. Something didn't look right. I quickly realized I was seeing smoke, not straw, coming out of the eaves. I called back to the house, grabbed the fire extinguisher, and put out the fire. A few buckets of water finished it off. I fully believe that if I had eaten lunch, our sow barn would have burned.

To help prevent on-farm fires from heat lamps, I share the following recommendations from our experiences:

**The best thing is not to use them.** An exposed hanging hot bulb that is drying the bedding (tinder) below is always going to be a fire risk. Put in systems for your livestock that do not need the supplemental heat. This may include major paradigm shifts like having lambs later in the spring, or using mother hens to raise chicks instead of buying them. We, like most farmers, are not able (or willing) to completely eliminate a need for heat lamps so we must do everything we can to minimize the risk. At a minimum, turn them off as soon as you don't need them.

**Don't use cheap poorly made heat lamps.** Throw out all of those hardware store heat lamps. We have tried a half dozen types of heat lamps and have currently settled on one from Premier that costs about \$40.00. It is completely enclosed and is said to be able to fall and not cause a fire. It has a thick long cord and the electrical connections are sealed.

**Use hard glass bulbs-not the thin glass ones.** We have switched over to using hard 175w bulbs from Farmerboy Ag. Supply. They are much less likely to shatter and we have developed different types of brooder boxes (for pigs and chickens) that stay warm without the need for a 250w bulb.

**Secure them like they are permanent.** Use chains and not twine. Keep them out of the way of livestock that can disturb them.

**Upgrade your breaker panel.** At the recommendation of an electrician we installed an "Arc Fault Interrupter" breaker for the circuits in our barns where we have heat lamps connected. Unlike our previous GFI breaker which failed to trip when the fixture sparked, this type of breaker is made to trip. The down side is these breakers cost about \$40 instead of \$4.00.

**Use heat lamps in buildings that are isolated from other buildings.** For us this means having small detached brooder buildings for our chickens and a specific building for our sows/piglets. This is much preferred to brooding in our main barn where we store all of our grain, hay, freezers, tools, and other livestock.

**Put a smoke detector in all buildings with the potential of fire.** A really loud one with an external speaker is recommended but a standard battery operated one with an annually changed battery is a minimum.

**Have at least one fire extinguisher at main entrances of all buildings.** In our main barn we have one at each end. We use commercial rechargeable extinguishers and check them annually for a full charge. Learn how to use one and have them clearly marked.

Review your insurance policy and make sure you know what coverage you do and don't have. You may think you have more coverage than you actually do and don't want any surprises when you really need it. We don't insure everything but we do insure what we don't want to self-insure.





# AGRICULTURE



## OSU Extension State-Wide Agriculture and Natural Resources Events

By Carri J. Jagger, Agriculture & Natural Resources Extension Educator

If you are interested in Agriculture and Natural Resources program for 2021, check out what Ohio State Extension has to offer. This link <https://agnt.osu.edu/programming> will take you to a list of events happening in the state in 2021. Most are virtual so that you can enjoy them from the safety and comfort of your own home.

## Do you want to start your own vegetable seeds?

By Carri J. Jagger, Agriculture & Natural Resources Extension Educator

As I sit here writing this article, looking out at the cold snowy day, I'm dreaming of warm days in the garden. March 20th will be the first day of spring. With that being said, it's time to start thinking about planning vegetable gardens. If starting a new garden, soil testing the site where the garden will go is a good idea. If it is an existing garden and the soil has never been tested, now would be a good time to think about testing it. Your local OSU Extension office can help you with soil testing.

Another gardening task to be thinking about is seed starting. Growing plants from seed is a lot of fun and now is the time to be doing this. Seeds can be started indoors under a grow light or in a bright window. A few seeds that can and should be started indoors early are: Tomatoes, Peppers, Eggplant, Broccoli, Brussel Sprouts, Cabbage, and Cauliflower to name a few. Tomatoes, Peppers and Eggplant should be started in February and the others can be started later in March.

A few supplies will be needed when starting seeds: Seed starting soilless mix, seed starting containers, labels, spray bottle, plastic wrap and seeds.

When starting seeds special seed starting kits can be purchased, however creativity is more fun. A simple egg carton with popsicle stick labels will work, just make sure to poke holes in the egg carton for drainage. Place the seed starting mix in egg cartons or seed starting trays then pre-moisten the soil. Pick out seeds and poke them in the soil one seed per cell. Make sure to label the seeds so that it isn't a mystery when it's time to transplant them. Lastly cover the seeds with plastic wrap as this will create a mini greenhouse to help hold moisture and heat in the soil until the seeds germinate. Once the seeds germinate take the plastic wrap off and keep the container in a bright window or under grow lights. Trays may need to be turned if the plants start to stretch towards the light. Plants should also be given a little brush with your hand every day to help strengthen them up, this mimics the wind.

Once plants have gotten one set of true leaves transplant them to a larger container with one plant per container. When the temperatures start to warm up gradually introduce the plants to the outdoors where they will become hardened off.

For more information about seed starting visit: <https://extension.unh.edu/resource/starting-plants-seed-fact-sheet>

## Baleage mistakes can lead to major health consequences

By Dr. Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL), University of Kentucky; Dr. Ray Smith, Department of Plant and Soil Sciences, University of Kentucky; Krista Lea, Department of Plant and Soil Sciences, University of Kentucky

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Baleage or "wet wrapped hay" is simply forage of a relatively high moisture content that is baled and then sealed in a plastic bag or wrapped in plastic, to keep oxygen out. Anaerobic bacteria (those that live without air) convert sugars in the forage to lactic acid which in turn lowers the pH and preserves the forage as silage, with full fermentation completed within 6-8 weeks. Round bale silage ("baleage") is an alternative to baling dry hay that allows shorter curing time and saves valuable nutrients by avoiding rain damage, harvest delays, spontaneous heating and weathering if stored outdoors. Grasses, legumes and small grains can be effectively preserved by this method but only if proper techniques are followed. Forages should be cut at early maturity with high sugar content, allowed to wilt to a 40-60% moisture range, then tightly baled and quickly wrapped in 4 to 6 layers of UV stable, 6-8 mm plastic to undergo fermentation ("ensiling" or "pickling"), a process that should drop the pH of the feed below 4.5 where spoilage organisms will not grow. Problems arise when conditions in the bale allow growth of disease-causing organisms and potentially fatal conditions.

### Why do problems occur?

Forage cut at the wrong stage of maturity will not have enough fermentable carbohydrates for good ensiling. Coarse, stemmy, and overly mature forages have less sugars available for completion of fermentation, especially once the seed head has emerged. Small grains including rye, oats, wheat, triticale, and barley have a narrow harvest window and should be cut before the boot stage.

Lower bale density makes round bale silage more susceptible to entrapment or penetration of oxygen and increases the chance of air pockets within the bale. Tight, dense bales wrapped with plastic twine, net-wrap or untreated sisal twine are less likely to spoil.

Baling at the incorrect moisture content is a recipe for disaster. Wet or non-wilted forages are more likely to spoil; bacteria from the Clostridia family thrive in wet environments where forage moistures are in the higher 67-70% range. Greater than 70% moisture almost guarantees Clostridial growth and spoilage. Conversely, forage that is too dry does not ferment but has greatly increased mold production.

Baled silage is also more likely to spoil due to damage to the plastic covering, resulting in the harmful introduction of oxygen. It is important not to puncture the plastic; isolate the area from cattle, pests, and vermin. Anything that claws, bites, or otherwise punctures the plastic sets the feed up for spoilage.

### What are the health risks? Botulism

A disease caused by one of the most potent toxins known to man. This toxin is produced by Clostridium botulinum, a spore-forming anaerobic Gram + rod. These spores are found everywhere in the soil and contaminate baleage during harvest, often by raking up dirt. In the absence of oxygen (as is found in wrapped hay) and a pH greater than 4.5 (poor fermentation), the spores enter a vegetative state, multiply and produce toxin. Two forms of the toxin, Types B and C, cause health problems in cattle. Type B is associated with improperly fermented forage while Type C occurs from the accidental feeding of dead animals or poultry litter in the ration of cattle. Both types produce the same characteristic clinical picture in cattle of progressive muscle weakness leading to recumbency (downers) over a 2 to 5 day period of time, depending on the amount of toxin ingested. Signs may develop as early as 24 hours to as many as 10 days after ingesting the toxin. Death is due to paralysis of muscles of the diaphragm, dehydration, or complications from being a "downer".

### Listeriosis or "Circling Disease"

An encephalitis caused by the bacterium Listeria monocytogenes. This organism proliferates in soil, feces and rotting vegetation. It grows in cool temperatures and at a pH greater than 5.4 under anaerobic conditions. It thrives in baleage systems when limited fermentation and entry of air results in spoiled, moldy feed. Common places to find Listeria include spoiled silage at the end of trench silos, decaying forage at the bottom of solid feed bunks, and rotting hay or baleage. A very common mistake by producers is feeding too many bales at once. Baleage that sits out open to the air over several days will begin to rot and spoil, allowing bacteria and molds to proliferate. In order to produce clinical disease, Listeria must survive the fermentation process which it can easily do if the pH never goes below 5. Large numbers of bacteria may gain access to the body through the mucous membranes of the mouth (through small cuts) and travel up the nerves to the brainstem. Fever, anorexia (off feed), depression and neurologic signs develop depending on which cranial nerves are affected. Neurologic signs include leaning to one side, stumbling, circling in one direction, facial nerve paralysis, drooling, difficulty chewing, drooped lower jaw, and head tilt. Early intervention with antibiotic therapy is often successful but, if the [animal] goes down (becomes recumbent), the odds of survival are low despite aggressive treatment. The prognosis for sheep and goats with listeriosis is poor with an approximate 25% survival rate. Infection with Listeria may also result in eye disorders and abortion. Anterior uveitis or "silage eye" follows conjunctival infection with L. monocytogenes. The symptoms are very similar to pinkeye with tearing, blinking, and sensitivity to light early in the course of disease followed by development of a bluish-white corneal opacity then pus and dead cells accumulate just behind the cornea in the anterior chamber. Treatment with long-acting antibiotics should speed healing. Listerial abortion can occur at any stage of pregnancy. The route of infection is through the GI tract into the bloodstream and then to the placenta causing fetal death.



### Bacterial and fungal abortion

Abortion is yet another possible consequence of poorly preserved forages. Forage baled and wrapped too dry provides excellent conditions for germination and growth of a variety of yeast, molds, and bacteria. Fungal spores are spread throughout the body by the bloodstream after inhalation or ingestion. Germination and growth of fungal spores in the placenta results in abortion, typically in the last 1/3 of pregnancy. If submitted to a diagnostic laboratory, fungal lesions are almost always identifiable in the placenta. Not all molds are dangerous though; many bales will develop some white surface mold due to small holes in the plastic but it does not penetrate deep into the bale. This outer layer can be removed at feed out or [animals] will usually avoid eating these areas. Bacterial contamination of baleage results in similar abortion risks. Bacillus species proliferate in poor quality silage and are partly responsible for deterioration when air is allowed in the bale. Bacterial abortion due to Bacillus species occurs when cows ingest the organism which travels through the bloodstream to the uterus followed by growth of the organism in the placenta and fetus. In cattle, abortion may occur in the last month of pregnancy or calves may be born alive but die within 24 hours. Prevention of health problems from baleage is based on ensuring proper harvest and preservation of wrapped forages and maintaining proper feedout rates to reduce the risk of growth of organisms dangerous to [ruminant species].



# AGRICULTURE



## 2020 Morrow County forage plot results

By Carri J. Jagger, Agriculture & Natural Resources Extension Educator

Every year OSU Extension and the Morrow Soil and Water Conservation District plant research plots in the county owned field behind the jail and dog pound. In 2020 annual forage crops were planted and harvested for forage. The objective was to compare three different annual forage grasses to see which ones performed best and contained the most crude protein, TDN and NDF.

### Study Design

The area of the trial was 5 acres. Three species of summer annual forage crops (forage oats, teff grass and sorghum sudangrass) were planted with a John Deere 1590 no-till drill on July 31st and fertilized with MAP at 80 lbs/ac, potash at 61 lbs/ac, and urea at 48 lbs/ac two weeks before we planted. The plots were mowed on September 30th and baled on October 3rd. Each bale was weighed and samples for forage tests were taken.

### Observations

All species tested grew after wheat but the

teff grass and sorghum sudangrass did the best. The teff grass could have been cut twice and if given a longer growing period the sorghum sudangrass could have had two cuttings, as well. Both are great options to plant after wheat if you need extra forage for livestock in the winter.

### Summary

- A significant difference in yield was observed where the teff grass and sorghum sudangrass were over 2.5 times the yield of the oats.
- Crude protein was higher for the oats.
- Teff grass produced the highest energy or TDN, followed by sorghum then by oats.
- Based on crude protein, total digestible nutrients, relative feed values and dry matter any of these species would be acceptable as forages. The key is to plant what works best for your operation.

The complete information will be printed in the 2021 Ohio State eFields report. If you have any questions don't hesitate to give us a call to further discuss our research.

## STUDY INFORMATION

Planting Date	7/31/2020
Harvest Date	9/30/2020
Variety	See Treatments
Population	10-50 lbs/ac
Acres	5
Treatments	3
Reps	4
Treatment Width	60 ft
Tillage	No-Till
Management	Fertilizer, Herbicide
Previous Crop	Wheat
Row Spacing	7.5 in.
Soil Type	Centerburg Silt Loam, 74% Amanda Silt Loam, 15% Bennington Silt Loam, 11%



## Growing Season Weather Summary

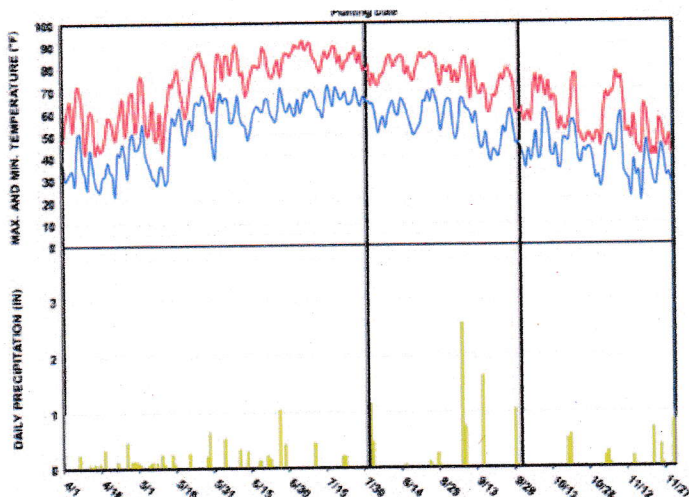
	APR	MAY	JUN	JUL	AUG	SEP	Total
Precip (in)	1.98	2.18	3.28	0.96	2.21	6.15	16.76
Cumulative GDDs	110	450	4063	1833	2452	2874	2874

Growing degree-days (GDDs), while not perfect, are a more reliable method of predicting crop and insect development than calendar days. Differing threshold temperatures and beginning accumulation dates are used to determine accumulated heat units for different crops.

## RESULTS

Treatments	Crude Protein (%)	TDN (%)	NDF (%)	Yield (tons/ac)
Oats	17.6	47.2	65.7	0.51 b
Teff Grass	11.3	64.1	61.1	1.25 a
Sorghum Sudangrass	11.3	54.0	65.4	1.38 a

Treatment Means with the same letter are not significantly different according to Fisher's Protected Least Significant Differences (LSD) test at alpha = 0.1.  
LSD: 0.29  
CV: 20.52%



Oats in the forage plot

## Good Agricultural Practices Trainings

The OSU Produce Safety Team has two more online Good Agricultural Practices (GAPs) trainings scheduled this winter. The first one was held in January. These programs are free to attend.

You can find more information at [produce-safety.osu.edu/events](https://produce-safety.osu.edu/events). Registration links are available for each event:

- Feb 18, 6:00-9:00pm: register at <https://go.osu.edu/gapstraining2-18>
- Mar 18, 6:00-9:00pm: register at <https://go.osu.edu/gapstraining3-18>



# OSU EXTENSION CALENDAR OF EVENTS

## FEBRUARY 2021

- 1 Jr. Fair Board, 7 pm, Flying Horse Farm
- 2 Advisor Club Kick Off meetings – Virtual
- 3 Morrow County Cattlemen's Meeting, 6:30 pm, Ag Credit 2nd Floor Conference Room
- 4 Advisor Club Kick Off meetings - Virtual
- 11 Pork Producers 7 pm, Ag Credit 2nd Floor Conference Room
- 15 2021 Planning For The Future of Your Farm Webinar Workshop – Virtual (*see Article in the Ag Section*)
- 15 Pesticide/Fertilizer Applicators Recertification, 5:30-9:30 pm, Ag Credit 2nd Floor Conference Room (please call to register – 419-947-1070)
- 16 New 4-H Volunteer Training, 6:30 pm, RSVP Required
- 16 Small Ruminant Webinar Series (*see Article in the Ag Section*)
- 17 Master Gardeners Meeting, 6 pm, Ag Credit 2nd Floor Conference Room
- 18 Horse and Pony Committee Meeting, 7:30 pm
- 18 Good Agricultural Practices (GAPs) Training – Virtual (*see Article in the Ag Section*)

- 22 2021 Planning For The Future of Your Farm Webinar Workshop – Virtual (*see Article in the Ag Section*)
- 25 Pesticide/Fertilizer Applicators Recertification, 1-5 pm, Ag Credit 2nd Floor Conference Room (please call to register – 419-947-1070)

## MARCH 2021

- 1 Jr. Fair Board, 7 pm, Flying Horse Farm
- 1 2021 Planning For The Future of Your Farm Webinar Workshop – Virtual (*see Article in the Ag Section*)
- 3 Morrow County Cattlemen's Meeting, Ag Credit 2nd Floor Conference Room
- 3 Private Pesticide Applicator Exam, 9 am & 1 pm – Must pre-register
- 11 Pork Producers, 7 pm, Ag Credit 2nd Floor Conference Room
- 15 New 4-H Volunteer Training, 9 am, RSVP Required
- 15 New 4-H Volunteer Training, 6:30 pm, RSVP Required
- 16 Small Ruminant Webinar Series (*see Article in the Ag Section*)
- 17 Master Gardeners Meeting, 6 pm, Ag Credit 2nd Floor Conference Room

- 17 Private Pesticide Applicator Exam, 9 am & 1 pm – Must pre-register
- 18 Horse and Pony Committee, 7:30 pm
- 18 Good Agricultural Practices (GAPs) Training – Virtual (*see Article in the Ag Section*)
- 29 CARTEENS, 6:30 pm – Ag Credit 2nd Floor Conference Room

## APRIL 2021

- 5 Jr. Fair Board, 7 pm
- 7 Morrow County Cattlemen's Meeting, 6:30 pm, Ag Credit 2nd Floor Conference Room
- 8 Pork Producers, 7 pm, Ag Credit 2nd Floor Conference Room
- 12 New 4-H Volunteer Training, 6:30 pm, RSVP Required
- 15 Horse and Pony Committee, 7:30 pm
- 19 Livestock Sale Committee, 7 pm, Ag Credit 2nd Floor Conference Room
- 21 Master Gardeners Meeting, 6 pm, Ag Credit 2nd Floor Conference Room
- 30 4-H Project Enrollments Due!!!!

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for over 36 years of donations toward 4-H project books!

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