Hello Coshocton County! Hazy, hot and humid are the 3H’s for this week. There is an outside chance that some of us might get some rain this afternoon but it appears as if the humidity will stick around. A big key is to stay hydrated!

For those searching for a grain marketing or estate tax update—make sure to log on to the Farm Office Live webinar on Friday morning as Ben Brown (University of Missouri) and Robert Moore (Wright & Moore Law Co.) will be guest speakers on these topics.

We are starting to sell quite a few Farm Science Review Tickets in our office—make sure to stop in to get your pre-sale tickets.

Stay cool and gave a great week.

Sincerely,

David L. Marrison
Coshocton County OSU Extension ANR Educator
The last couple of weeks have been marked by precipitation extremes across the Buckeye State. A stalled boundary and repeated showers and storms brought 3-7 inches of rain across portions of Clark and Madison counties on August 12th. Last week, tropical moisture combined with a small mid-level trough to drop 4.96 inches of rain in Reynoldsburg in Franklin County (Fig. 1). This was followed by the remnants of Tropical Storm Fred, which dumped 2-6 inches of rain across many of our eastern and southeastern counties (Fig. 1). Meanwhile, most of west received minimal rainfall this week, generally less than 0.50”. Conditions over portions of Butler, Preble, Darke, and Mercer counties are drying rapidly. During this two-week stretch, temperatures have averaged 2-4°F above normal (1991-2020), driven strongly by warm overnight lows due to increased humidity.

**Forecast**- Hot and humid conditions will stick around all week. High pressure will slide off to the southeast of Ohio by Tuesday. Southerly flow around the high will pump warm, humid air into the region with highs expected in the low to mid 90s and overnight lows in the low 70s for Tuesday through Thursday. A cold front, slowly approaching the region could provide enough energy to create pop-up storms on Tuesday and Wednesday, with a little better chance of scattered showers and storms for Thursday through the weekend. Highs will remain close to 90 or so throughout the period. Overall, the Weather Prediction Center is calling for up to 0.50 inch of rainfall over the next 7 days across the south, and up to 1 inch across the north. Most of this is likely to fall late weekend into early next week. Isolated heavier totals will occur where stronger storms develop.

The [Climate Prediction Center’s 6–10 day outlook](https://www.cpc.ncep.noaa.gov/products/ftpひとり/sector/other_products/normals_sector_6_10.png) for the period of August 29 – September 2 and the [16-Day Rainfall Outlook from NOAA/NWS/Ohio River Forecast Center](https://www.weather.gov/os/ohio_river_forecast/16_day_rainfall_outlook) indicate above average temperatures are likely, with near to above average precipitation (Fig. 2). Climate averages for this period include a high temperature range of 80-85°F, a low temperature range of 60-65°F, and average rainfall of 0.60-0.75 inches.
Welcome to our New Soybean Pathologists
By: Laura Lindsey, Amanda Douridas & Mary Griffith
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2021-28/welcome-our-new-soybean-pathologists-horacio-and-mitch

On behalf of Ohio State Extension’s AgCrops Team, we’d like to welcome Dr. Horacio Lopez-Nicora and Dr. Mitch Roth. Dr. Lopez-Nicora and Dr. Roth both started as Assistant Professors in the Department of Plant Pathology this month.

Horacio has extension and research responsibilities in the areas of soybean plant pathology and nematology. His work is driven by the intertwined goals of ensuring food stability and working with growers to manage diseases that can have a negative impact on agricultural production. His research informs, and is in turn informed by, his extension work and a dedication to meet the real-time needs of growers. Horacio may be a familiar face to some of you…He completed his Ph.D. at The Ohio State University in the Department of Plant Pathology, working with Dr. Terry Niblack. After graduating from OSU, Horacio was an Assistant Professor at Universidad San Carlos in Paraguay and Adjunct Professor at Universidad de Caldas, Columbia. It’s great to have you back, Horacio!

Mitch’s research will focus on fungal and oomycete diseases of soybean and other crops. While Mitch doesn’t have a formal extension appointment, you may see him around the state as he wants to connect his research to the needs of farmers. Mitch grew up on a farm in Bad Axe, Michigan, where his family farms corn, wheat, dry bean, and sugar beet. He received his Ph.D. from Michigan State University. (It’s always good to have another Spartan around.) Most recently, Mitch worked as a Post-doctoral Research Associate at University of Wisconsin-Madison. Welcome to Ohio, Mitch!

We’d also like to thank Dr. Anne Dorrance for all her contributions to the AgCrops Team. Anne was promoted to Associate Dean and Director of The Ohio State University Wooster Campus in January 2020. Even though Anne’s been in her current role for almost two years, she regularly contributed to the CORN newsletter and helped answer many grower questions. Thank you so much, Anne!

New MSU/OSU Field Crops Insect Pest Management Guide
By: Chris DiFonzo (Michigan State) and Kelley Tilmon (Ohio State)


This publication contains a series of chapters with information on biology, damage, management recommendations, and insecticides related to insect pests in field crops in Michigan and Ohio. Chapters cover field corn, soybean, wheat and other small grains, alfalfa and grass forage, and (for Michigan growers) dry beans and sugar beet. Each chapter stands alone, focusing on a particular crop. In the preparation of this guide, we checked state databases and consulted labels for each of the pesticides listed in the crop chapters; we made every effort to include correct information and to list most of the commonly-used products for Michigan and Ohio. However, labels do change over time. Always read the labels of the products you use to reconfirm application rate, precautions, PPE, pre-harvest intervals, and other key pieces of information prior to spraying. Users are the best source of feedback on this guide. If you see information that is not correct or complete, please contact us so that we can update the guide accordingly.
Livestock Medication Records: Are They Really Necessary

By: Chris Zoller, Extension Educator, ANR, Tuscarawas County and Gustavo M. Schuenemann, Professor and Dairy Extension Veterinarian, Department of Veterinary Preventive Medicine, Ohio State University Extension

Source: https://u.osu.edu/beef/2021/08/25/livestock-medication-records-are-they-really-necessary/

Maintaining accurate and proper treatment records is just as important as having adequate working facilities! At a recent Beef Quality Assurance (BQA) training session, we discussed livestock drug use, proper administration, the importance of following the label (and veterinary instructions), and the importance of keeping records of drugs administered.

Real-Life Example
A producer attending the session stood up and described to the group what happened when he had an animal test positive for a drug residue. An official from the Food and Drug Administration (FDA) came to his farm multiple times until finding him at home. He was required to write a letter explaining what steps he would take to prevent the issue from arising again. The FDA determined the first letter wasn’t adequate in addressing their concerns. He was provided with websites to consult and had to write another letter addressing the concerns. The producer now keeps detailed medication records and strongly encouraged every livestock producer to do the same!

Food Producing Animals
In livestock production, a medication may be necessary to treat diseases and restore health. Feed additives containing medications must be used only according to the label instruction. However, if precautions are not taken, problems can arise when an animal tests positive for a drug residue violation in meat, milk and eggs. Remember, these are food producing animals and it is the responsibility of the owner to ensure a safe product is available to consumers. Drug and chemical residues in meat, milk and eggs are of public health concern.

The Food and Drug Administration (FDA) regulates the use of livestock medications in the United States and establishes tolerance levels for residues in meat, milk, and eggs. Following label recommendations and maintaining accurate and proper treatment records helps ensure that violations do not occur.

Key Points
The following key points are from the document Adequate Drug Treatment Records Help Ensure Food Safety, available at this FDA website: https://www.fda.gov/animal-veterinary/animal-health-literacy/adequate-drug-treatment-records-help-ensure-food-safety

Live animals sold for slaughter for human consumption are considered food. Under the Federal Food, Drug & Cosmetic Act (FFD&C Act), the definition of “food” includes “articles used for food or drink for man or other animals.” FDA considers live animals intended for food as “food” under the FFD&C Act.

Food held under insanitary conditions is adulterated under the law. The FFD&C Act states that a food is adulterated “if it has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health.”

Giving drugs to animals without keeping adequate records can constitute “insanitary conditions.” In cases involving illegal drug residues in dairy cows, district courts have agreed with the U.S. government that the failure of a dairy farm to keep adequate records of the administration of drugs constituted inadequate control measures. The courts found that these inadequate control measures created “insanitary conditions.”
and, therefore, adulterated the food under the FFD&C Act.

Drug residues in edible tissues above a level set by FDA (the “tolerance”) are illegal. When a food-producing animal is treated with a drug, residues of the drug sometimes remain in or on edible tissues from that animal. Residues include small amounts of leftover drug, or parts of the drug that aren’t completely broken down by the animal’s body. Immediately after administering a medication to sick animals, the drug enters the bloodstream and is typically metabolized by liver and then eliminated by the kidney via urine. Most sick animals experience some degree of dehydration and low intake (feed and water) due to pain, and this may extend the drug clearance from the animal. Keep your treated animals fully hydrated to avoid residues in milk or meat.

FDA, through its Center for Veterinary Medicine, makes sure the residues that may be present in or on edible tissues from treated animals pose little risk to people. As part of the approval process, any drug intended for use in food-producing animals, the agency sets the drug’s tolerance and withdrawal period. The tolerance is the level of residues allowed to be in or on the edible tissues. Residues higher than this level are called “violative” because they violate (are above) the tolerance set by FDA.

The withdrawal period is the time from when the animal was last treated with the drug to when the animal can be slaughtered for food or selling milk. The withdrawal period allows for the drug (or parts of the drug known as metabolites) in the edible tissues of the treated animal to get to levels that are at or below the tolerance. It is illegal for dairies, livestock dealers, and other animal producers to sell an animal for food that has drug residues in its edible tissues that are above the set tolerance.

What Enforcement Action Can FDA Take if I Have a Violation?
The producer described above did not have to pay any fines for the violation he incurred. However, having to research information, make phone calls, work with the veterinary of record, and write two letters consumed much of his time. Let’s take a look at possible enforcement action FDA may take against violators:

- Warning Letters – Are sent to the individuals or firms, advising them of specific noted violations.; These letters request a written response as to the steps which will be taken to correct the violation.
- Injunction – An order by a court that requires an individual or corporation to do or refrain from doing a specific act.
- Criminal prosecution – May be recommended in appropriate cases for violation of Section 301 of the Act.; Misdemeanor convictions, which do not require proof of intent to violate the Act, can result in fines and/or imprisonment up to one year. Felony convictions, which apply in the case of a second violation or intent to defraud or mislead, can result in fines and/or imprisonment up to three years.

Criminal Fines for Food Drug and Cosmetic Act Violations
Misdemeanor fines under the Act may reach $500,000 under some circumstances. The Criminal Fine Enforcement Act of 1994 (Public Law 98-596) provides for fines for violations of Federal law. Although it is not part of the Act, the Criminal Fine Enforcement Act of 1994 applies to all fines levied under the Act, as well as other statutes that contain provisions enforced by FDA.

The following fines are applicable for each offense:
- Up to $100,000 for a misdemeanor by an individual that does not result in death.
- Up to $200,000 for a misdemeanor by a corporation that does not result in death.
- Up to $250,000 for a misdemeanor by an individual that results in death, or a felony.
- Up to $500,000 for a misdemeanor by a corporation that results in death, or a felony.
- The maximum imprisonment for a misdemeanor under the Act remains a year for each offense.

What Drug Treatment Information Do I Need to Maintain?
When treating food animals with any medications, the following must be recorded:
- Name of the drug used;
- Identity of the animal treated;
• Date of each administration of the drug to the animal;
• The dose;
• Route of administration. How the drug was given (for example, by mouth or by injection into muscle);
• The lawful written order of a licensed veterinarian in the context of a veterinarian-client-patient relationship (if applicable);
• Name of the person who gave the drug;
• Length of the withdrawal period; and
• Date the withdrawal period ends (milk can return to the bulk tank or treated animal can safely be sent to slaughter on or after this date).

Veterinary Client Patient Relationship (VCPR)
A VCPR is just what it says – a working relationship with a veterinarian who is familiar with your animals, production practices, and works with you to develop plans to prevent, control and treat diseases. The veterinarian is referred to as your Veterinarian of Record (VoR), and both the VoR and the client should sign a form to document this relationship. If this is you, excellent! If emergency situations are the only times you see a veterinarian, maybe it’s time to schedule a visit to establish and document the VCPR.

Summary
An ounce of prevention is worth a pound of cure! Drug and chemical residues entering the food chain (milk, meat, or eggs) are of public health concern. Review and adjust health protocols at least once per year with your veterinarian. It really is in your financial best interest to avoid residues entering the food chain to maintain your market channels. In the event you receive an FDA letter indicating a residue violation was found in milk or meat, please contact your veterinarian immediately to develop the response letter documenting the corrective actions.

Sources
Types of FDA Enforcement Actions, Food and Drug Administration, https://www.fda.gov/animal-veterinary/resources-you/types-fda-enforcement-actions
Veterinary-Client-Patient-Relationship (VCPR) Template, https://vet.osu.edu/extension/general-food-fiber-animal-resources

EDITOR’s NOTE: Several upcoming Beef Quality Assurance training sessions have been scheduled throughout Ohio and can be found on the OSU Beef Team Events/Programs page.

**Weaning – Part 2: The Ugly and the Good**
By: Kirsten Nickles, Graduate Research Associate and Anthony J. Parker, Associate Chair and Associate Professor. Department of Animal Sciences, Ohio State University

“The Ugly” – A stressful weaning experience negatively affects the growth rate and health status of feeder calves. Stressed calves become susceptible to pathogens and succumb to respiratory and gastrointestinal diseases during weaning (Campistol, 2010). Subjecting cattle to stressful periods such as weaning also impacts how society perceives the beef industry and the welfare standards currently implemented.

Modern consumers are becoming increasingly concerned with food animal agriculture and the production processes being utilized by producers (Olynk et al., 2010). Abruptly weaning calves onto a truck and into the marketing chain without conditioning the animals for the health and welfare challenges can be avoided with improved calf management.

The types of stressors endured by livestock at weaning can be divided into three distinct categories: psychological, physiological, and physical (Carroll and Forsberg, 2007). Exposure to new environments,
restraint, and unfamiliar noise are psychological stressors. Physiological stressors are characterized as anything that causes deviation from homeostasis in the body such as not meeting nutrient requirements or disruptions to the endocrine system. Physical stressors are defined as anything causing harm to the animal such as injury, temperature stress, feed and water restriction, and disease (Carroll and Forsberg, 2007).

The goal at weaning should be to minimize a calf’s experience to multiple stressors at the same time. An important point to consider is that multiple stressors have a compounding effect on a calf’s behavior, tissue growth, metabolic, immune, endocrine, and reproductive systems (Price, 2013). It is well noted that a calf confronted with multiple stressors will have a weakened immune system. The calf may be unable to respond to pathogens in the same way as before the imposition of the stressors and will succumb to disease and potentially death. Multiple stressors become a catalyst for respiratory disease in feeder calves.

The USDA National Animal Health Monitoring System (2011) reports bovine respiratory disease (BRD) as the most common illness among calves entering the feedlot or stocker phase. Additionally, 97% of United States feedlots reported having cattle with BRD, and nearly 17% of all cattle on feed are affected with BRD (NAHMS, 2011). Since abrupt weaning is the most common weaning method in the United States, and only about 35% of small operations (1-49 cows), 60% of medium operations (50-199 cows), and 79% of large operations (200 or more cows) provide buyers with information about their calf health programs, it is common for calves to be vaccinated on arrival at the feedlot (NAHMS, 2017). It was also reported that over 60% of the producers that responded in the survey did not vaccinate their calves against respiratory disease before sale (APHIS, 2010).

Additionally, since most calves in the U.S. are abruptly weaned and immediately transported to the feedlot or stocker operation with unknown vaccination status, approximately 59% of feedlots will treat the entire lot of calves with antibiotics to help prevent an outbreak of respiratory disease (NAHMS, 2011). Treating the entire lot of calves with antibiotics is called metaphylaxis. The use of metaphylaxis is more common with lighter weight calves (less than 700 pounds) compared with heavier cattle, however, 21.3% of cattle placed in feedlots were treated metaphylactically in the 2007 survey.

Vaccinations are a useful tool for the prevention of disease; however, vaccine efficacy is greatly reduced and can decrease dry matter intake and body weight gain when given to stressed calves at arrival to a feedlot (Blech et al., 1984). This reduced efficacy is because of the stress-induced immunosuppression that occurs in calves, and several research groups have reported that vaccination at arrival does not benefit and may even decrease health status of newly received calves (Martin et al., 1982; Perino et al., 1997; Richeson et al., 2009; Griffin et al., 2018; Schumaher et al., 2019). When calves are abruptly weaned and simultaneously subjected to numerous stressors, they are at greater risk for respiratory illness.

Additionally, when producers do not vaccinate for respiratory pathogens, and fail to disclose vaccination histories to buyers, the risk of failure in the feedlot increases. This then leads to increased vaccination on arrival and metaphylactic treatment of calves. There are other alternatives, however, to this ugliness that can result from multiple stressors at weaning. Calf conditioning programs are designed to minimize the novelty of future stressors and promote the health and resilience of calves.

Common “preconditioning” programs include an extended weaning period, coupled with a vaccination protocol, and in some programs a feeding regimen. In the marketplace longer weaned, preconditioned calves almost always sell for a premium price when compared to calves that have been abruptly weaned (CattleFax, 2021), and are unvaccinated. Next week we will take a look at several options for preconditioning calves and the reasoning behind various precondition practices.

“The Good” – The good news in the weaning narrative is that there are alternative weaning methods that have been scientifically tested and found to reduce the multitude of stressors placed on beef calves at weaning. For optimal welfare and productivity of our feeder calves, alternative weaning methods and vaccination protocols should be used rather than abrupt weaning. When calves are placed in a conditioning program, it decreases the number of stressors simultaneously placed on calves at weaning. Additionally, conditioning programs provide calves time to become accustomed to these stressors. This then eliminates the number of novel,
stressful events that a calf endures when they travel to the next phase of production, as they have already experienced things like a new feed bunk and water system, for example.

To learn more about alternative weaning methods, read about Science based weaning methods for beef calves published in last week’s BEEF Letter. By selecting an alternative weaning method and enrolling calves in a preconditioning program in which they are weaned before being trucked, have received some sort of vaccination protocol, we will be giving calves their best chance at being healthy when they enter the feedlot. By weaning and vaccinating before transporting calves to the feedlot, calves will have a chance to mount an adequate immune response and be less stressed as they enter the next phase of production. This will improve all sectors of the industry and allow us to produce the best product possible for our consumers.

Farm Office Live Returns on August 27
“Farm Office Live” returns August 27, 2021, at 10:00 a.m. with special appearances by Ben Brown and attorney Robert Moore! Tune in to get the latest outlook and updates on ag law, farm management, ag economics, farm business analysis, and other related issues. Targeted to farmers and agri-business stakeholders, our specialists digest the latest news and issues and present it in an easy-to-understand format.

Special Guests:
- Ben Brown – A former member of the OSU Farm Office Team, Ben’s areas of expertise include farm management, commodity markets, and agricultural policy.
- Robert Moore, Esq. – A former OSU Extension employee, Robert now practices agricultural law at Wright & Moore, with a focus on farm succession planning, estate planning, and business planning.

August Topics:
- Tax Proposals
- Ohio Cropland Values & Cash Rents
- FSA Program Update
- Grain Marketing Update – Ben Brown
- Farm Business Analysis Crop Data – Guest Clint Schroeder
- Your Questions

To register or to view a previous “Farm Office Live,” please visit https://go.osu.edu/farmofficelive. You will receive a reminder with your personal link to join each month. The Farm Office is a one-stop shop for navigating the legal and economic challenges of agricultural production. For more information visit https://farmoffice.osu.edu or contact Julie Strawser at strawser.35@osu.edu or call 614.292.2433

Monthly Ag Column- The Beacon
By David Marrison
Written for The Beacon Newspaper, August 26, 2021

Hello, Coshocton County! School is back in session and in just over a week, we will be enjoying Labor Day weekend. This holiday weekend marks the end of summer and celebrates the American worker and the labor movement. Part of this movement was advocating for the “eight-hour day” consisting of eight hours for work, 8 hours for recreation, and 8 hours for rest.
Growing up on a dairy farm meant our family operated under the “make hay while the sun shines” labor philosophy translating into 16 hours of work and 8 hours of rest. Not much time for 8 hours of recreation although baling hay was considered great recreation by my dad and grandpa.

Even to this day, I find making hay as recreation. In fact, many of you know that some of my work vacation hours are spent each summer making hay on our family farm. What I appreciate the most about this vacation time is that it allows a break from the daily routine and allows me to do some deep thinking either on the tractor seat or up in the mow stacking hay. In the hustle and bustle of life, it is easy to just do, do, do and not to think, strategize, or to ponder.

Of course, there are multitude of ways which we can create time to think. My wife gets up early every morning to reflect and read her daily devotions. Another friend carves the first 15 minutes of each day for non-digital thinking and planning. No meetings, laptops, or smartphones allowed. He just pulls out a plain old piece of paper and pen and works through the issues required to make his business more successful.

How do you think best? Maybe it is a walk around the hay field or through the pasture? Maybe it is in the lawn chair under the Swamp White Oak tree? Grab a pen and notepad and you will be shocked what ideas you can generate to make your business and family relationships better.

Earlier this summer as I was getting some vacation time in, my mind wandered from managing risk and farm management to life after covid and community. So today, I would like to share of few of these thoughts.

**Manage what you can, mitigate what you can’t**- The coronavirus pandemic was a good example that we can’t control every aspect of life. In fact, we as farmers know this all too well about the weather. The forecast can be perfect when we drop the hay, but it can change in a blink of an eye. How sensitive is your operation to the unexpected? How much time to do you worry about things that you cannot change or control? Whether it is the weather, sky-rocketing input prices, a national pandemic, death, divorce, disability, or family discord, how well can your operation pivot in response to the unexpected? It is easy to manage when the plan goes according to the script. How ready are you for plan B, C, or D?

**How well do you know your numbers?** What would a 10% change in key revenue or expenses mean to your business? This summer we have had the chance to lock in some really good prices for corn and soybeans. Do you have a written marketing plan with price targets which drive your marketing decisions? Do you know your cost of production? Higher crop prices can be a temptation not to be detailed in tracking expenses. Make sure to track and monitor both variable and fixed expenses. Set meaningful financial targets for your farm business.

**Keep the UNITY in Community**- One of the wonderful aspects of farm life is that farmers appreciate and value what it means to be a community. Farmers have a special bond. One of the things I appreciate the most about farmers is their willingness to help one another. When equipment breaks and the sun is shining, neighbors are always willing to jump in and lend their equipment and time to make sure the job gets done. With all the stress in our world today, it is so important to keep connected with our neighbors, give each other a helping hand, and to be there for each other. Covid has really impacted many of our families. We need each other, now, more than ever.

So, as you celebrate the upcoming Labor Day weekend, I encourage you to find time to work, rest,
recreate, think, manage, mitigate, and re-engage in your community. In closing, I would like to share a quote from Benjamin Franklin who stated, “Early to bed and early to rise makes a man healthy, wealthy and wise.” Have a good and safe day!

**Starting a Sheep Enterprise**

By: Gerlad Q. Fitch, Extension Sheep Specialist, Oklahoma State University
(Previously published by Oklahoma State University Extension: February, 2017)
Source: [https://u.osu.edu/sheep/2021/08/24/starting-a-sheep-enterprise/](https://u.osu.edu/sheep/2021/08/24/starting-a-sheep-enterprise/)

Before getting into the sheep business, ask yourself these questions:

1. Do I like sheep?
2. Will sheep fit into my current operation?
3. What size of sheep operation do I want?
4. Do I have adequate facilities to handle the number I want?
5. Will I have an adequate feed supply?
6. Do I want to lamb in the spring or fall?
7. What breeds should I select to achieve my goals?
8. When and where can I market my lambs?
9. Could I have a predator problem?

**Why Raise Sheep?**

There are several reasons why you might want to consider raising sheep. Sheep are more efficient than beef cattle in the conversion of forage to retail product. The initial investment required to begin a sheep enterprise is relatively low. Expensive sheds and barns are not necessary; often buildings you already have will provide the dry, clean shelter needed by sheep. Sheep production is not limited only to meat production, because wool also provides a portion of the income. Fall lambing has provided marketing of lambs during the peak of spring lamb prices. These factors have made the sheep operation a very profitable enterprise over the last several years.

Anyone considering getting into the sheep business should consider several things before actually purchasing any sheep. One of the first things to consider is the initial size of the flock. Do you begin with a commercial size flock of 200-300 ewes or a smaller flock of 20-50 ewes. Of course, the feed supply available will be a major contributing factor in this decision.

Sheep are not difficult animals to raise; however, they do require a higher level of management than beef cattle. Therefore, if you have never raised sheep before, the first suggestion would be to begin with 20-50 ewes and then increase numbers in future years, if the sheep business is for you.

**Pasture**

Another factor to consider is the kind of pasture available. There are certain kinds of pasture that sheep like, such as sod type grasses that are fairly fine stemmed and high quality. They do not favor coarse grasses such as bluestems or love grass. Well fertilized and managed bermudagrass can be utilized very efficiently with sheep. Such pastures are excellent only during May through July. In August and September, adequate dry matter is available; however, the protein level in the Bermudagrass is low and additional protein should be supplemented. In fact, five to ten ewes per acre can usually be maintained during this period under central and eastern Oklahoma conditions. Buffalo and grama grasses are excellent pastures for sheep, but have a lower carrying capacity than Bermudagrass.

Small grain pastures, such as wheat, rye, and rye grass make excellent fall and winter pastures for lactating ewes. Many producers working with smaller acreages have begun to over seed their Bermuda pastures in the fall with Marshall rye grass or wheat to utilize those acreages with year-round forage. These practices require more intensive management practices, but return good dividends if done correctly.
Another way to have year-round forage is with the implementation of cool season perennials to your pastures. The USDA-ARS, Grazinglands Research Laboratory at El Reno has been performing studies on these types of pastures. These cool season grasses begin their fall growth in September and have had crude protein levels ranging from 20%-25% in October. These grasses continue their growth through June and some species appear to maintaining a high crude protein level the majority of the growing season. These grasses include ‘Paiute’ orchard grass, Lincoln Smooth Brome grass, and ‘Luna’ pubescent wheatgrass.

Another possibility for cattle producers is the use of co-specie grazing practices. Cattle are very finicky and do not eat many kinds of weeds. Sheep, on the other hand, like to browse and very often will eat many different kinds of weeds that cattle will not eat. Sheep eat rag weeds very well and can be grazed with cattle. Research has shown that producers can run one to two ewes per cow with no additional feed costs and no detrimental effects on native pastures. In fact, many pastures have been improved with co-specie grazing.

Building and Fences
Another factor to consider before entering the sheep business is the availability of buildings, corrals, and fences to adequately protect and control the sheep. Buildings do not need to be elaborate, but need to provide adequate space to keep the sheep dry and comfortable. Space requirements vary depending on the breed and size of the ewes. A good rule of thumb is 10-12 square feet of shelter space per ewe, 12-16 square feet per ewe and lamb pair, and 6-8 square feet per feeder lamb.

Adequate fencing is needed to keep the various groups of sheep in their specific pastures. Barbed wire fences are usually adequate for ewes; however, lambs have a tendency to move through barbed wire quite easily. Hog wire fencing is probably the best permanent wire fencing (excluding electric fencing) to keep all ages and sizes of sheep in place. Electric fencing is excellent to keep sheep in and predators out if constructed correctly.

Protection from Predators
Predation is one of the most serious problems confronting the sheep producer. It is very important to protect sheep from the two predominant predators, dogs and coyotes. If you are in an area where many dogs are present, either wild dogs or pets, it is important to have adequate fencing to protect you sheep. Once a dog has learned to kill sheep, they must be destroyed or somehow kept away from the sheep at all times. Coyotes are very different from the dog. Coyotes will normally kill only when they are hungry, and usually only one lamb or ewe will be killed. The dog may chase, hurt, and kill sheep for the fun of it. A dog attack may leave one or twenty sheep hurt or dead.

There are several ways to reduce or eliminate the predator problem. The first is the use of guard dogs or burros. The guard dogs have been the most well received in protecting sheep from predators. The burros seem to work well for the first two to three years and then become less effective. Guard dogs have been bred to protect sheep; those breeds include: Great Pyrenees, Komondor, Akbash, Anatolians, and Maremmas. The USDA Sheep Experiment Station at Dubois, ID, conducted a guard dog survey of sheep producers in the United States and Canada. That survey revealed that over 90% of the sheep producers surveyed felt that the guard dogs were effective in reducing predation.

Another method of reducing predator losses is with the use of electric fencing. Experience has shown that a seven or eight wire fence that is approximately 48 inches high is ideal for sheep and cattle. This fence will not only keep sheep in, but will also work well for keeping predators out. Spacing will depend on the number of wires used. A good fence design for a seven wire fence would begin with the bottom wire charged six inches above the ground. The next two wires would be spaced at 5-inch intervals and consist of a ground wire, followed by a charged wire. The next wire would be a ground wire spaced 6 inches up, followed by a charged wire and a ground wire at 8-inch intervals. The top wire would then be 10 inches up and would be a charged wire. This fence would be 48 inches high and should do a good job of livestock and predator control.

Seasonality of Breeds
There are several decisions you must make in selecting a breed or breed crosses to use in your sheep operation. Making those selections will depend upon several factors. Breed selection will depend upon when
you want to lamb the ewes—fall, winter, or spring. This will depend upon the type of operation and pasture availability. The ewe requires almost twice as much feed for the first two and one-half months after lambing as she does during most of the rest of the year. Lactation causes a drain on the ewe's reserves; she not only needs more feed, but she needs better quality feed. Those with winter pastures, such as small grain pastures, will want to consider fall lambing to take advantage of good fall and winter pastures for lactation. If winter pastures are not available, a winter lambing program may be advantageous.

If one plans to fall lamb, there are only a few breeds that will lamb during this season of the year. Those breeds include the Dorset, Rambouillet, and Polypay. The only breed available in large [commercial] numbers is the Rambouillet breed. The Rambouillet breed is noted for fine-wool production and will breed out-of-season fairly well. The Dorset breed is known for being an excellent maternal breed that will readily breed out-of-season. The Dorset-Rambouillet cross ewe has been the mainstay of the commercial fall lambing programs in Oklahoma. This cross is noted for breeding out-of-season better than either straightbred and will produce about 20 more lambs per 100 ewes than the Rambouillet breed in the fall.

If one is planning a spring lambing program, any breed will work and all will produce more lambs per ewe in January, February, and March than in the off-season. Therefore, the selection of a breed strictly based upon lambing season is not important. Even the breeds noted for out-of-season lambing will produce a 10%-20% higher lamb crop in the spring than in the fall. Breed selection in a spring lambing program must consider other important areas, such as wool quality, lambing percentage, growth rate, ewe adaptability, forage utilization, milking ability, mothering ability, etc. Therefore, it is easy to see that selecting a breed for a spring lambing program will be a much more difficult decision.

Selecting Breeding Stock
Once you have decided what lambing time will best utilize your pasture situation, then you should begin to select breeding stock. This decision will be based upon the number of ewes that will be used in your sheep enterprise. If you are beginning with only a few ewes (20-50 ewes), availability will not be a major concern. However, if you are looking to begin the sheep business with a few hundred ewes, availability may be of concern.

In buying ewes to start a flock, there are several choices relative to age of ewes. One can buy yearling ewes if they are available, but these can be expensive. The advantage of yearling ewes is that they will be productive for 5-8 years. It may also be possible to buy solid mouth (full set of teeth), medium aged ewes (4-6 years old) that still have several good years of production left. Such ewes are often suspect, because one wonders why someone is selling them. If the buyer can be sure there is nothing wrong with these ewes, this might be a good way to start.

Internal Parasites
Internal parasites can be a very serious problem to sheep producers, if they do not realize the danger and take management steps to keep the threat at a minimum. Parasites are maintained in the sheep and on the ground. Mature sheep have parasites in their digestive systems and pass eggs onto the pasture. If the weather and moisture conditions are right, the eggs hatch and the larvae crawl up onto the plants. Sheep that ingest these plants get these larvae into their systems. It is in this manner that lambs pick up parasites from the adult sheep in the flock.

Lambs are highly susceptible to sickness and even death from too many parasites. Consequently, it is good management to try to minimize or totally prevent the lambs from getting parasites before they are 3-4 months of age. Ideal conditions for spreading parasites from adult sheep to lambs exist when lambs are running with their mothers on permanent pasture. In fact, the problem is very serious for lambs born in March and early April. A good management scheme, to prevent the lambs from becoming heavily parasitized, is to not let them out on permanent pastures with their mothers.

Early spring and late summer conditions are the worst for parasite infestations. At other times of the year, such as during the hot dry weather in the summer, the pasture conditions are not as conducive for spreading
parasites from adult sheep to lambs. In the winter there are fewer problems because the parasites do not undergo the life cycle changes from egg to larvae nearly as rapidly as under the warm, moist spring conditions. Another management tool is the use of temporary pastures as much as possible. There is not much danger of lambs becoming parasite infested if they are on wheat pasture where the land has been plowed. Also, rotational grazing of summer pastures can help reduce some of the parasite problems associated with permanent pastures. A well-planned parasite control program, involving timely drenching of ewes along with pasture management, can keep the problem under control.

Marketing
Another factor to consider when entering the sheep business is the availability of markets. With 20-50 ewes, it might be possible to distribute the market lambs locally through direct marketing. This marketing strategy has worked very well for producers in other areas of the United States. Find a slaughter plant in the area that will work with you and sell whole or half lambs to people in the neighborhood who like lamb. Because lamb is not readily available in many communities, many people buy a lamb in this manner in order to have lamb available for food consumption.

Those considering a two or three hundred ewe flock usually cannot distribute their lambs in this manner and will have to find a market where they can sell 50-100 lambs at one time. Oklahoma has developed an effective computer marketing program which allows producers to pool their lambs together and then market these lambs in truckload lots. This allows producers to receive a good market price for their lambs. More information on telemarketing and computer marketing can be obtained from your extension sheep specialist.

Summary
The factors to consider before going into the sheep business include the amount and kind of feed available, the availability of fences and buildings to protect and manage the flock, and predator control. One should also consider lambing the sheep at a time that is coordinated with the best feed supply for the lactating ewes.

It is important to get the kind of sheep that will work best under existing conditions. The owner who can raise their own replacements, or has a constant and reliable source of replacements, will increase the chance of having highly productive sheep.

Managing pastures and drenching to control parasites is very important, as well as working with other sheep producers to improve marketing alternatives.

Anyone who can use all of these tools can use sheep as a profitable enterprise. Sheep enterprises reward the producer who uses intelligence, experience, and good management skills. If one is beginning a sheep enterprise to make money, that individual should learn as much as possible about the business ahead of the time, so that correct timely management decisions can be made.

Sponsorship for Fall Foliage & Farm Tour Sought
OSU Extension, Farm Service Agency and the Coshocton Soil & Water Conservation are pleased to announce that the Coshocton County Fall Foliage & Farm Tour will return on October 16-17 (after a year pause due to the coronavirus pandemic). This year’s event will be our 50th tour and our planning committee is working to make this year’s tour the best ever.

This year’s map pick-up will be at the Coshocton County fairgrounds and will take participants through Linton, Franklin and Lafayette townships. Over 1,835 people registered and attended the 2020 tour from 29 Ohio counties and 8 different states. Approximately 27% of participants were from outside Coshocton County.
Each year, the planning committee solicits local businesses to help defray the cost of putting out tour maps by purchasing advertising space in the brochure. Advertising space is available again this year for $30.00 per business card size advertisement. We encourage businesses and local agricultural supporters to join on as sponsors of the 50th fall foliage and farm tour. Please consider sponsoring the tour maps. A separate flyer is enclosed with this newsletter for your convenience to remit your sponsorship payment.

Questions on this year’s tour/brochure can be directed to either Mike Jacob at (740) 622-8087 (Extension 7234) or Alonna Hoffman at (740) 622-2265. Thank you for your support in promoting Coshocton County and for supporting the annual Fall Foliage and Farm Tour.

**Farm Science Review Tickets Now on Sale**
The Ohio State University’s Farm Science Review, which was held online last year because of the pandemic, will return this year to be live and in person for the 59th annual event. Advance tickets for the Farm Science Review are available at all Ohio State University Extension county offices for $7. This year’s Farm Science Review will be held at the Molly Caren Agricultural Center in London, Ohio on September 21-23, 2021. Tickets are $10 at the gate; however, presale tickets can be purchased at your local OSU Extension for $7 per ticket through Monday, September 20, 2021. Children 5 and under are admitted free. The review hours are 8:00 a.m. to 5:00 p.m. on September 21 & 22 and from 8:00 a.m. to 4:00 p.m. on September 23.

Farm Science Review is known as Ohio’s premier agricultural event and typically attracts more than 130,000 farmers, growers, producers and agricultural enthusiasts from across the U.S. and Canada annually. Participants are able to peruse 4,000 product lines from roughly 600 commercial exhibitors and engage in over 180 educational workshops, presentations and demonstrations delivered by experts from OSU Extension and the Ohio Agricultural Research and Development Center. More information about the Farm Science Review is at [http://fsr.osu.edu](http://fsr.osu.edu)

**Agronomy Field Day at Durbin Farms**
By Chris Zoller, Extension Educator
Source: [https://agcrops.osu.edu/newsletter/corn-newsletter/2021-25/agronomy-update-scheduled](https://agcrops.osu.edu/newsletter/corn-newsletter/2021-25/agronomy-update-scheduled)

The Tuscarawas County office of Ohio State University Extension will sponsor an Agronomy Update on Thursday, August 26, 1pm to 4pm at Durbin Farms. The farm is located at 4227 Durbin Road SE, New Philadelphia, Ohio 44663.

Many agricultural products continue to be in short supply, and this shortage may continue. What will these supply shortages mean for harvest? Will the shortages continue into planting season next year? Dr. John Fulton, OSU Food, Agricultural, and Biological Engineering, will discuss the situation and provide management recommendations.

Carbon sequestration, carbon credits, and carbon markets are popular terms right now. Nearly every farm publication has an article about the role agriculture can have in this arena. There are many factors to consider prior to entering into a carbon market agreement. Mike Estadt, OSU Extension Educator, ANR, has studied this topic and will address factors farmers must consider.

The program will wrap up with a discussion of agronomy and farm management resources available from Ohio State University Extension and a presentation by Matt and Luke Durbin discussing lessons they learned from building a farm shop.

The agenda includes:
- 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

There is no fee to attend, but pre-registration is requested no later than August 24. To register, please email zoller.1@osu.edu or call 330-339-2337.

Grazing and Forage Field Day in Licking & Knox County on August 28
By Dean Kreager, Licking County Extension

Extension in Licking and Knox Counties are teaming together with the Ohio Forage and Grasslands Council to provide a drive it yourself tour of two locations in Licking County and one in Knox County on August 28th. Our tour will begin at Lightning Ridge Farm in Granville where Bill O’Neill raises Longhorn cattle utilizing intensive grazing. With twelve divided lots and the capability to increase divisions into twenty-four paddocks, cattle are moved daily and have access to portable piped water. We will also discuss the value of hay quality preservation while touring a new hoop barn constructed for hay storage. The second stop in the tour will move six miles north to a farm managed by Ned Campbell who has provided space to plant about twelve varieties of forages following wheat harvest. Attendees will be able to observe and discuss the value of these forages for grazing or harvesting. For the final stop, we will move further north into Knox county to learn about the use of Conservation Reserve Program (CRP) approved warm-season grass production. This field day will begin at 6817 Cat Run Rd. Granville, OH 43023 at 11:00 a.m. and conclude at 3:00 p.m.

There is a $10 registration fee per person. Lunch is included with registration. A $5 discount will be applied if the person registering is an OFGC Member or a resident of the host county. Payment will be collected at the field day. Please register within one week of the event you plan to attend by completing a quick registration form here at https://osu.az1.qualtrics.com/jfe/form/SV_0jRpxTFYnCsHtd4

Questions about the Summer Forage Field Day can be directed to Gary Wilson by calling 419-348-3500, Dean Kreager 740-618-6332, or Sabrina Schirtzinger 740-397-0401.

BQA Re-certification Sessions Planned
The Coshocton County Extension office will be offering a series of Beef Quality Assurance (BQA) re-certification meetings throughout the remainder of this year as a total of 179 producers will need to obtain re-certification before the end of 2021.

To help producers obtain their certification, we have scheduled a series of re-certification sessions for the remainder of the year. These sessions will be held in Room 145 at the Coshocton County Services Building located at 724 South 7th Street in Coshocton County. Producers can choose the session which bests fits their schedule. Sessions will be held on: September 13, October 11, November 3, December 1 & 14. Each will be held from 7:00 to 8:30 p.m. Pre-registration is required for each session as space is limited. There is no fee to attend. Call 740-622-2265 to pre-register. These sessions also qualify for anyone who is seeking a first time certification. A program flyer is also attached to this newsletter.

Online certification and recertification is also available and can be completed anytime at https://www.bqa.org/beef-quality-assurance-certification/online-certifications. Producers can also attend a session hosted by the Tuscarawas County Extension office at the Sugarcreek Stockyards on August 25 (7 p.m.). Pre-registration is requested by calling 330-339-2337 or by emailing Chris Zoller at Zoller.1@osu.edu
“Truth is the torch that gleams through the fog without dispelling it”
Claude Adrien Helvetius
Agronomy Update

Thursday, August 26, 1pm - 4pm at Durbin Farms
4227 Durbin Rd. SE, New Philadelphia, OH 44663

Please pre-register by August 24 in order to have materials prepared. Call 330-339-2337 or email zoller.1@osu.edu to register.

• Parts & 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, Extension Educator, ANR, Tuscarawas County
• Lessons Learned from Building a Farm Shop
  • Matt & Luke Durbin, Durbin Farms

Chris Zoller, Associate Professor, Extension Educator, Agriculture & Natural Resources
OSU Extension, Tuscarawas County 419 16th St SW, New Philadelphia, OH  44663
Email:  zoller.1@osu.edu  Office:  330-339-2337  Direct:  330-365-8159

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Tuscarawas.osu.edu

We Sustain Life

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit cfaesdiversity.osu.edu. For an accessible format of this publication, visit cfaes.osu.edu/accessibility.
Coshocton County will be hosting a series of Beef Quality Assurance re-certification programs to allow beef and dairy producers to re-certify their beef quality assurance. Pre-registration is required for each session as space is limited.

**Sessions Will Be Held:**

- July 12, August 9, September 13, October 11, November 3, December 1 & 14
- 7:00 to 8:30 p.m.
- Coshocton County Services Building
- 724 South 7th Street - Room 145, Coshocton, OH 43812
- Seating is limited, so please RSVP
- Register by calling: 740-622-2265

Other Sessions are being offered in neighboring counties or can be completed online anytime at [bqa.org](http://bqa.org).
Dear Fall Foliage & Farm Tour Supporter,

We very much appreciate your support of the annual Fall Foliage Tour! Below, please find a remittance slip for your ad purchase- and don’t forget to include your business card, if you haven’t already. The cost of your advertisement goes toward the printing of 750 Fall Foliage brochures. Last Tour, **1835 people** registered and attended the tour from 29 Ohio counties and 8 different states. Approximately 27% of participants were from outside Coshocton County. You can see how far your ads have reached and how far your ads will reach!

If you would like to have a flyer so that you may promote the tour at your place of business, contact me at michael.jacob@usda.gov and I will send you one when they have been printed. Again, thank you for your support and we look forward to another great Fall Foliage and Farm Tour!

Sincerely,

Mike Jacob

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**2021 Tour Committee**

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>David Marrison, OSU Extension</td>
<td>622-2265</td>
<td>Mike Jacob, Farm Service Agency</td>
<td>622-8087</td>
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<tr>
<td>Dan Markley, Historian</td>
<td>545-6743</td>
<td>Ryan Medley, SWCD</td>
<td>622-8087</td>
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<tr>
<td>Maureen Sturtz, Dairy Services Unit</td>
<td>829-2488</td>
<td>Alonna Hoffman, OSU Extension</td>
<td>545-6002</td>
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<td>Zach Wallace, SWCD</td>
<td>622-8087</td>
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**2021 Fall Foliage & Farm Tour Brochure Advertisement**

Name of Business______________________ Amount Enclosed $_________

- Please remit $30.00 and your business card (if not previously used), to be used in the 2021 Fall Foliage and Farm Tour brochure by **August 27, 2021**.

- Please mail payments made payable to: Ohio State University Extension 724 South 7th Street Coshocton, OH 43812

- Please note any changes to be made to your business card on the back of this sheet or mail a new card with payment.

- Please check here if you wish to receive a Fall Foliage brochure.