

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES

Photo: Robert Buxton

**May 12 Issue (Edition #94)**

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Hello Coshocton County! After of a week of rain, it was nice to see the sun shining brightly today. Congratulations to the Coshocton County Farm Bureau and the Army Corps of Engineers for a great Earth Day celebration today at the Wills Creek Dam. We were grateful to be a part of this event and very glad to see many of our 6th graders from across the county.

Today's issue includes articles on the increasing cost of lumber, how to manage when normal is not normal and even a look at heavy maple seed production. I hope you enjoy these articles.

A reminder for farmers who need to obtain their fertilizer certification, we will be hold a certification for NEW fertilizer applicators on May 19 in Sugarcreek, Ohio. See today's edition for more details. Be watching for details on other programs such as beef quality assurance in next week's issue.

Have a great week!

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator



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Fertilizer Certification Session to be held on May 19 in Sugarcreek

The OSU Extension offices in Tuscarawas and Coshocton Counties will be holding a Fertilizer Certification for NEW Applicators workshop on May 19 beginning at 7:00 p.m. at the Sugarcreek Stockyards located at 102 Buckeye Street in Sugarcreek, Ohio.

If you apply fertilizer to more than 50 acres of crops grown primarily for sale, then the Ohio Department of Agriculture requires you to obtain a Fertilizer Certificate. This class will review laws, water quality, soil sampling & analysis, and nitrogen and phosphorus management. Attendance will allow you to receive your fertilizer certification.

There is no cost to attend however pre-registration required. Please call 330-339-2337 to register. All current health guidelines will be followed per the Ohio State University. A facial covering must be worn at all times and the current social distancing practice of 6 feet per person will be maintained. Please stay home if you are not feeling well or if someone in your family is ill. You are welcome to bring your own drink and/or snack.

See the attached flyer for more details



Carbon as a Commodity for Agriculture?

By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law Wednesday, May 05th, 2021

Source: <https://farmoffice.osu.edu/blog/wed-05052021-559pm/carbon-commodity-agriculture>

There's a lot of talk about carbon markets and agriculture these days. While carbon markets aren't new, recent proposals in Congress and announcements by the Biden administration are raising new interests in them. Some companies are actively pursuing carbon trading agreements with farmers, further fueling the discussion in the agricultural community.

As is common for any new opportunity, the talk on carbon markets may be tinged with a bit of skepticism and a lot of questions. Do carbon sequestration practices have real potential as an agricultural commodity? That's a tough question and the answer isn't yet clear. There are answers for other questions, though, as well as resources that may be helpful for those considering carbon markets for the first time. Here's a sampling.

What is a carbon market? A carbon market revolves around carbon credits generated by carbon reduction practices. In the farm setting, a producer who either lowers the farm's carbon emissions or captures carbon through "sequestration" practices can earn carbon credits. Like other markets, a carbon market involves a transaction between a seller and a buyer. The seller sells a carbon credit to a buyer who can use the carbon credit to offset or reduce its carbon emissions.

Do carbon markets already exist? Yes, although they may be private markets with varying names occurring in different regions. For example, Bayer Crop Sciences began its Carbon Initiative last year, paying producers for adopting carbon reduction practices that will help Bayer reach its goal of reducing its greenhouse gas emissions by 30% in 2030. Indigo Ag began entering into long-term carbon agreements with producers in 2019, paying \$15 per ton for carbon sequestration practices. Food companies and agribusinesses including McDonald's, Cargill, and General Mills formed the Ecosystem Services Market Consortium, which will fully open its private carbon market in 2022.

Are legal agreements involved? Yes. Using a written agreement is a common practice in carbon market transactions, but the agreements can vary from market to market. Provisions might address acceptable

practices, calculating and verifying carbon reductions including third-party verification, sharing data and records, pricing, costs of practices, minimum acreage, and contract period. As with other legal contracts, reviewing a carbon agreement with an attorney is a wise decision. Watch for more details about carbon agreements as we share our analysis of them in future blog posts.

What is President Biden considering for carbon markets? The Biden administration has expressed interest in developing a federal carbon bank that would pay producers and foresters for carbon reduction practices. The USDA would administer the bank with funding from the Commodity Credit Corporation. Rumors are that the bank would begin with at least \$1 billion to purchase carbon credits from producers for \$20 per ton. The proposal is one of several ideas for the USDA outlined in the administration's [Climate 21 Project](#).

What is Congress proposing for carbon markets? The bipartisan [Growing Climate Solutions Act](#) would require USDA to assess the market for carbon credits, establish a third-party verifier certification program overseen by an advisory council, establish an online website with information for producers, and regularly report to Congress on market performance, challenges for producers, and barriers to market entry. An initial \$4.1 million program allocation would be supplemented with \$1 million per year for the next five years. The Senate Agriculture, Nutrition and Forestry Committee has already passed the bill. The [Rural Forest Markets Act](#), also a bipartisan bill, would help small-scale private forest landowners by guaranteeing financing for markets for forest carbon reduction practices.

Is there opposition to carbon markets? Yes, and skepticism also. For example, a [recent letter](#) from dozens of organizations urged Congress to “oppose carbon offset scams like the Growing Climate Solutions Act” and argued that agricultural offsets are ineffective, incompatible with sustainable agriculture, may further consolidate agriculture and will increase hazardous pollution, especially in environmental justice communities. The Institute for Agriculture & Trade Policy [also criticizes](#) carbon markets, claiming that emission credit prices are too low and volatile, leakages and offsets can lead to accountability and fraud issues, measurement tools are inadequate, soil carbon storage is impermanent, and the markets undermine more effective and holistic practices. Almost half of the farmers in the [2020 Iowa Farm and Rural Life Poll](#) were uncertain about earning money for carbon credits while 17% said carbon markets should not be developed.

To learn more about carbon markets, drop into an upcoming webinar by our partner, the National Agricultural Law Center. [“Considering Carbon: The Evolution and Operation of Carbon Markets”](#) on May 19, 2021 at Noon will feature Chandler Van Voorhis, a leading expert in conservation and ecological markets. The Center also has a [recording](#) of last month’s webinar on “Opportunities and Challenges Agriculture Faces in the Climate Debate,” featuring Andrew Walmsley, Director of Congressional Relations and Shelby Swain Myers, Economist, both with American Farm Bureau. A new series by the Center on [Considering Carbon](#) will focus on legal issues with the carbon industry and will complement our upcoming project on “The Conservation Movement: Legal Needs for Farm and Forest Landowners.” There’s still more talking to do on carbon markets.

Growing Degree Days vs Calendar Days- How Long Will Emergence Take?

By: Alexander Lindsey & Greg Labarge

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/13-2021/growing-degree-days-vs-calendar-days-%E2%80%93-how-long-will-emergence>

When we examine crop emergence post-planting, two factors can impact speed of emergence – soil moisture content and soil temperatures. If soil temperatures are lower, it can take more calendar days for emergence to occur meaning rowing corn may take a little more time. In the Ohio Agronomy Guide, emergence should begin to occur after approximately 100 air GDDs.

A difference in 10 degrees in temperature can dramatically affect how quickly crops will emerge. For example, at a temperature of 60 degrees F heat unit accumulation per day would be 60 F – 50 (base temperature for growth) = 10 GDDs. If it takes 100 GDDs to start to see emergence, at this rate it would take 10 calendar days

to see the crop start to emerge. If temperatures are 70 degrees F, heat unit accumulation per day would be $70\text{ F} - 50 = 20\text{ GDDs}$. This would shorten the emergence window to 5 calendar days instead, resulting in more rapid emergence from planting.

In recent work from Nemergut et al. (2021), researchers from OSU observed emergence starting at 110 to 120 soil accumulated GDDs (base of 50 degrees F) for corn, which equated to first emergence observed in 4 or 5 days after planting. Some of the difference in calendar date for emergence (though GDD accumulation was similar) was because planting depth was changed, and the 1" planting accumulated GDDs faster than the 2" and 3" planting depths. These studies though were planted in May or early June (2019 wet spring delayed planting), and daily accumulated GDDs was higher than we might expect if planted in late April. Soil accumulated GDDs have been discussed above, and these could vary slightly compared to air accumulated GDDs (calculated using air temperatures). In the work referenced above, accumulated air GDDs in the first four days post-planting were 106-118 GDDs, slightly less than the soil accumulated GDDs.

If you want to predicate emergence on your farm, the GDD calculator found at <https://mrcc.illinois.edu/U2U/gdd/> is a useful tool. It is a two-step process, first find your location on the map, then enter your planting date. The graph will display accumulated GDD's for your location. Example output in Figure 2 shows GDD accumulation from an April 19, 2021 planting date near London, OH in Madison County. By May 6 the accumulated GDD was 138 and the emerging corn is shown in Figure 1. The GDD calculator can be used to predict growth stage throughout the growing season. This is a handy to time when scouting and management decisions should be made.



Figure 1. Emerged corn on May 6, 2021 planted April 19 near London, OH.

As the days turn cooler, don't be surprised if the crops don't pop out of the ground quickly due to lower soil temperatures. If emergence is still not observed after two weeks, it may be worth checking the field to see if other issues may be affecting emergence.

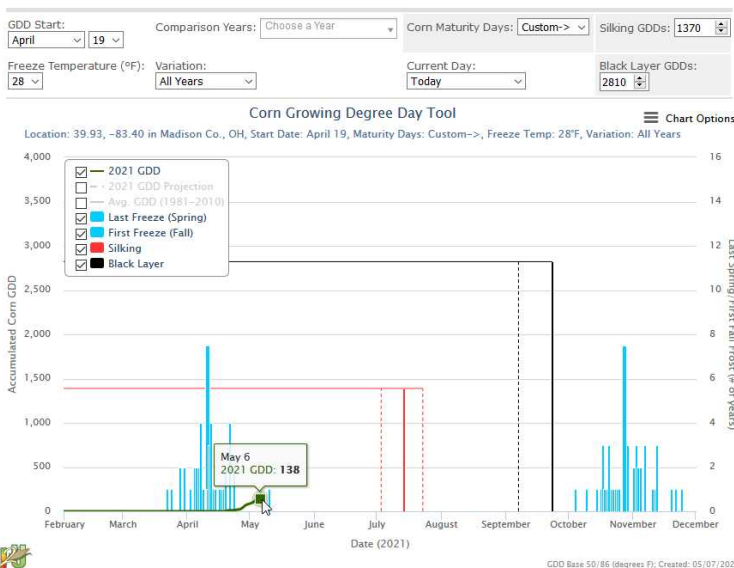


Figure 2. GDD accumulation from April 19 to May 6, 2021 near London, OH.

References:

Nemergut, K.T., Thomison, P.R., Carter, P.R., and Lindsey A.J. 2021. Planting depth affects corn emergence, growth and development, and yield. <https://doi.org/10.1002/agj2.20701>
 Thomison, P., Michel, A., Tilmon, K., Culman, S., and Paul, P. 2017. Chapter 4: Corn production. Bulletin 472 – Ohio Agronomy Guide, 15th Ed. Pages 32-55.

Adapting Burndown Programs to Late-Planted Situations

By: Mark Loux

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/13-2021/adapting-burndown-programs-late-planted-situations>

It's déjà vu all over again. We have run this article every few years, and it seems like maybe the frequency is increasing as we deal with wet and cold weather that delays planting. The questions about this have not changed much, and neither have the suggestions we provide here. One of the most common questions, predictably, is how to kill glyphosate-resistant marestalk and giant ragweed and generally big weeds in soybeans when it's not possible to delay planting long enough to use 2,4-D ester (Enlist soybeans excluded since there is no wait to plant). Overwintered marestalk plants become tougher to kill in May, so this is an issue primarily in fields not treated last fall. The good news is that we have more effective herbicide/trait options for help with burndown compared with a few years ago. The bad news is that nothing we suggest here is going to be infallible on large marestalk.



A burndown of glyphosate and 2,4-D struggles to control marestalk in the spring anyway, especially in the absence of fall herbicide treatments. Our standard recommendation, regardless of when spring treatments are applied, is to either replace the 2,4-D with something more effective, or to add another herbicide to supplement the 2,4-D. Sharpen has been the frequent replacement/supplement, and we now have the option to use dicamba in the Xtend soybean system instead of 2,4-D. While it's possible to use higher 2,4-D rates in the Enlist soybean without waiting to plant, higher rates do not necessarily solve this issue based on our research, although a follow up POST treatment that includes glufosinate or 2,4-D usually finishes off plants that survive burndown. There's a list of suitable soybean burndown treatments in our [marestalk fact sheet](#), and also below – these are for fields not treated the prior fall.

- Glyphosate + saflufenacil + 2,4-D (+ metribuzin if possible)
- Gramoxone (3-4 pt) + 2,4-D + metribuzin
- Glyphosate + dicamba (Xtend soybeans)
- Glyphosate + dicamba + saflufenacil (Xtend soybeans)
- Glufosinate + Sharpen (+ metribuzin if possible)

Saflufenacil herbicides include Sharpen, Zidua PRO, and Verdict. It is possible to use a mix of glyphosate, saflufenacil, and metribuzin, omitting the 2,4-D, but control can be more variable. We have observed some weakness also with the glyphosate/saflufenacil combination on dandelion, purple deadnettle, and larger giant ragweed. There is usually going to be a benefit to keeping 2,4-D in the burndown where possible, as part of a more comprehensive mixture. We advise against using Gramoxone unless it can be mixed with both 2,4-D and a metribuzin-containing herbicide. One strategy would be to plant corn first as soon fields are fit, and delay soybean planting so that 2,4-D could still be used. And a reminder - deciding to include saflufenacil at the last minute can result in a need to alter the residual herbicide program. Labels allow mixtures of Sharpen/Verdict with herbicides that contain flumioxazin (Valor), sulfentrazone (Authority), or fomesafen (Reflex) only if applied 2 or more weeks before planting.

Some other things to consider in a delayed burndown situation:

1. Aside from glyphosate-resistant weeds, increasing glyphosate rates may be one of the most effective ways to maintain effective control. We suggest a rate of at least 1.5 lb ae/A, and higher rates could be

warranted. This will not improve marestalk control, but should help with most other weeds, especially under (presumably) warmer May conditions.

2. To improve control with glyphosate/2,4-D, add Sharpen or another saflufenacil herbicide, as long as the residual herbicides in the mix do not include flumioxazin, sulfentrazone, or fomesafen if it's within 14 days of soybean planting. It's also possible to substitute Sharpen for 2,4-D when it's not possible to wait 7 days to plant, but this may result in reduced control of dandelion, deadnettle and giant ragweed. Where the residual herbicide in the mix does contain flumioxazin, sulfentrazone, or fomesafen, and it's not possible to change the residual or add Sharpen, adding metribuzin or Canopy Blend/Cloak DF to glyphosate/2,4-D can improve burndown effectiveness somewhat.
3. Consider substituting Gramoxone or glufosinate for glyphosate? Gramoxone is less effective than glufosinate on marestalk, but glufosinate can struggle some in a dense, large no-till burndown situation. Either one should be applied with metribuzin and 2,4-D ideally. Use the higher labeled rates and a spray volume of 15 to 20 gpa for best results. A consideration here is that in large no-till weed situations, high rates of glyphosate typically have more value than high rates of Gramoxone or glufosinate, with the exception of glyphosate-resistant weeds. We know of some growers who have used a mixture of glyphosate and glufosinate for burndown, with the glufosinate in the mix to control marestalk primarily. We do not have enough experience with this mix to make a recommendation in a burndown situation. The hail mary treatment here is a mix of glufosinate and Sharpen (plus metribuzin ideally), which can be expensive but somewhat of a scorched earth approach on broadleaf weeds at least.
4. In the Enlist and Extend systems where it's possible to use 2,4-D or dicamba without waiting to plant, there can be an advantage to increasing herbicide rates as we move later and weeds become larger. Another advantage of these systems is the option to use 2,4-D or dicamba again in POST treatments to finish off weeds that survive burndown. We do have to assume that this strategy would likely select for resistance more rapidly, compared with use just PRE or POST. Including glufosinate in POST treatments of 2,4-D to Enlist soybeans should mitigate the resistance rate somewhat, although it does not substitute for late season scouting and removal of weeds to prevent seed. Reminder to consult the appropriate websites to determine the legal options to mix with 2,4-D and dicamba for use in Enlist or Xtend soybeans, especially when developing a more comprehensive mix to deal with tough burndown situations.
5. Among all of the residual herbicides, chlorimuron contributes the most activity on emerged annual weeds and dandelion. This is probably most evident when the chlorimuron is applied as a premix that contains metribuzin (Canopy Blend/Cloak DF, etc). The chlorimuron may not be much of a help for marestalk or ragweed control, since many populations are ALS-resistant. Cloransulam (FirstRate) has activity primarily on emerged ragweeds and marestalk, as long as they are not ALS-resistant. We have on occasion observed a reduction in systemic herbicide activity when mixed with residual herbicides that contain sulfentrazone or flumioxazin.
6. It is possible to substitute tillage for burndown herbicides. Make sure that the tillage is deep and thorough enough to completely uproot weeds. Weeds that regrow after being "beat up" by tillage are often impossible to control for the rest of the season. Tillage tools that do not uniformly till the upper few inches (e.g. TurboTill) should not be used for this purpose. One strategy to ensure complete control even in tilled situations is to apply glyphosate several days prior to tillage.
7. Late burndown in corn is typically a less dire situation compared with soybeans. Reasons for this include: 1) the activity of some residual corn herbicides (e.g. atrazine, mesotrione) on emerged weeds; 2), the ability to use dicamba around the time of planting; 3) the tolerance of emerged corn to 2,4-D (Enlist corn) and dicamba, and 4) the overall effectiveness of available POST corn herbicides. Overall, while not adequately controlling emerged weeds prior to soybean planting can make for a tough season, there is just more application flexibility and herbicide choice for corn. Having said this, be sure to make adjustments as necessary in rate or herbicide selection in no-till corn fields.

One of the OSU PrecisionU sessions that past winter dealt with planning for problems caused by wet weather in late spring. The related video on weed management can be found at:

<https://www.youtube.com/watch?v=212t-85mpKk>

Backyard Poultry Production Webinar

A Backyard Poultry Production Zoom Webinar will be hosted by OSU Extension in Jefferson County on Tuesday, May 25 beginning at 6:30 p.m. Learn the basics of raising backyard chickens, ducks and more on Zoom webinar. Dr. Tim McDermott, DVM and Extension Educator, will discuss key aspects to managing your flock. Topics covered include care, housing essentials, and general nutrition. Youth are welcome to attend!

Pre-registration is required. Once registered, a webinar link will be sent to the email address provided. Register at <https://go.osu.edu/2021backyardpoultry> See the attached flyer for more information.

Adding Calf Value Begins at the Working Chute

By: [Stan Smith](#), PA, Fairfield County OSU Extension (originally published in [Ohio Farmer on-line](#) and [Beef Magazine on-line](#))

Source: <https://u.osu.edu/beef/2021/05/12/adding-calf-value-begins-at-the-working-chute/>

Frequently over the years we've talked about Ohio's average cow herd size – between 16 and 17 cows at any given time – and how it impacts management and marketing decisions for the 'average' size beef farm. Related to that, I'm often asked how 'average' size herds can compete economically with those who have the cow numbers that allow them to take advantage of the economics of larger scale by selling calves in pot load lots.



When thinking about the numbers it might take to capture the benefits of size and scale, keep in mind that most cattle travel to and from the feedlot in pot loads carrying 48,000 pounds. Also, the question of how smaller herds can compete on a scale with larger herds is not unique to just Ohio's cattlemen.

As we look to our neighbors, we find the average cow herd sizes in the surrounding states of Indiana, Michigan, West Virginia and Pennsylvania range from just over 12 cows per farm to almost 19. Kentucky has the most of any neighbors averaging around 31 cows.

It's apparent the challenges of competing economically when owning a relatively small cow herd is not just a concern in Ohio. None of our neighbors' average size herds have the capacity to ship even a mixed sex, pot load of cattle themselves, much less a load of all steers or all heifers.

Since it appears much of the Midwest may be in essentially the same boat when it comes to average herd size, let's explore a few alternatives that might allow us each as individuals to better compete in the marketplace. While no single management solution exists, by combining multiple opportunities and management strategies, value can certainly be added to a calf crop.

Perhaps one of the greatest limiting factors to adding value to individual calves is the ability to handle and process calves in a timely and efficient fashion. Handling facilities allow for easier use of estrus synchronization, pregnancy checking, timely vaccinations, castration, dehorning and even AI. Combined, these management practices lead to the uniformity that even in small groups can result in better marketing opportunities. Let's take a brief look at some of those opportunities more closely.

Any time that estrus synchronization is mentioned, thoughts immediately turn to artificial insemination. While the opportunities afforded by individually creating matings to the best bulls in the world through an artificial insemination program are undeniable, it is not something all cattlemen choose to do. Regardless, perhaps the greatest benefit to estrus synchronization is the ability to maintain a tighter calving season regardless of using artificial insemination or the natural service of a bull. The financial benefits of maintaining a tighter calving season come in multiple forms.

First and foremost, a tighter calving season that gets more calves on the ground earlier results in additional overall weaning weight. Each calf that is born a 21-day cycle earlier likely results in an additional 30 to 50 pounds of marketable calf weight.

The second opportunity a tighter calving season affords is greater numbers of similar weight calves to market in groups. Data shared by University of Kentucky economist Kenny Burdine during last winter's Ohio Calf Market Outlook meeting showed an \$11 per hundred weight advantage when calves could be marketed in groups of at least 5 as opposed to singles. When that group of calves grows to 10 head, the advantage becomes \$15/hundred weight. As Burdine went on to point out, combining the advantages of the extra weight realized by calving a cycle earlier with the additional value gained when selling in a larger group can easily exceed \$100 per calf.

Another opportunity afforded by maintaining adequate cattle handling facilities is the ability to castrate calves prior to marketing, thus being able to market steers as opposed to bull calves. During our Outlook program last winter, Dr. Burdine shared that when summarizing Kentucky feeder calf sale data over the past 11 years, he found 550 pound steers outsold 550 pound bulls by an average of \$11.14 per hundred weight, or more than \$61 per head.

The value of incorporating a vaccination program into the calf weaning and marketing protocol was a topic shared by Ohio Beef Field Specialist Garth Ruff during another Ohio Beef School program. Ruff pointed out market data shows that properly vaccinated feeder calves average \$5 to \$9 per hundred weight more value in the marketplace than contemporaries receiving no vaccination protocol.

The opportunity to pregnancy check cows and the potential cost savings of timely culling the opens are an undeniable benefit of maintaining working facilities. As shared by both Al Gahler and Dean Kreager during our Beef School sessions, we learned the costs of keeping each open cow can easily range from \$400 to perhaps \$800 per cow held in the herd, and not culled. Depending on the method of confirming pregnancy that's employed, these savings can come at a cost ranging from only \$4 to \$35 per head.

Frankly, there's no magic bullet to compensate for the economics of scale that larger cow herds may capture. However, simply maintaining facilities that allow timely individual cow or calf management practices may be the most vital and pivotal component to creating an opportunity to compete with the economics of scale larger herds may enjoy. In fact, perhaps greater calf profits don't begin at the loading chute at all, but rather they begin at the working chute!

Feeding Small Ruminants: Developing a Grazing System for Sheep & Goats

By: Rocky Lemus, Extension Forage Specialist, Mississippi State University

Kipp Brown, Extension Area Agent, Mississippi State University Extension

(Previously published online with [Mississippi State University Extension: July, 2008](#))

Source: <https://u.osu.edu/sheep/2021/05/04/feeding-small-ruminants-developing-a-grazing-system-for-sheep-and-goats/>

Small farming operations are becoming more popular as the amount of land available for large livestock enterprises and row crops is reduced by urban sprawl. Small ruminant livestock systems such as sheep and goats fit well with small farm operations. Forages, whether are grazed or hayed, supply the major source of nutrition and a critical component to small farm enterprises to maintain sustainability. Many of these small farm owners are either newcomers to farming or people living in urban areas and see them as "hobby" farms. There is a critical need to educate them on the basic agricultural practices and forage utilization for this type of livestock management.

The grazing habits of sheep and goats differ from traditional livestock production and they can be incorporated into the grazing systems for cattle and horses. Goats tend to browse more while sheep tend to graze. Goats are efficiently used in pasture utilization controlling brush and weed.

Pasture Management and Forage Selection

Sheep and goats offer an alternative to utilizing forage and vegetation which is otherwise “wasted” (Figure 1). In a pasture situation goats are “top down” grazers, consuming only the best parts of a wide range of grasses, legumes, and browse plants. Browse plants include brush, shrubs, trees, and vines with woody stems. This behavior results in uniform grazing and favors a first grazer-last grazer system using a goat herd as the first group and cattle as the last group. This management is most appropriate with lactating does or growing kids. The quality of feed offered is usually most directly related to the age or stage of growth at the time of grazing. Sheep do very well grazing annual cool-season forages like oats, annual ryegrass, winter wheat, or triticale. Annuals forages can be ready to graze approximately 6-8 weeks after seeding. Feeding some hay for the first week before grazing annual cool-season grasses provides fiber and reduces scouring. Portable cross fencing to restrict sheep to small paddocks will reduce trampling. Creep gates can be used to give lambs access to areas separate from the ewes.

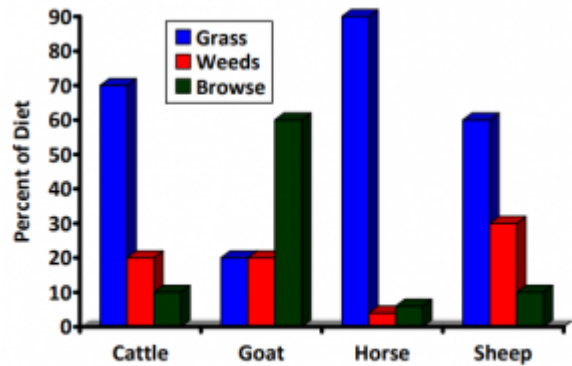


Figure 1. Dietary preference of different livestock species. Source: AnPeischel, 2005.

Feed is the single largest cost associated with raising small ruminants, typically accounting from 60%-65% of total production costs. Pastures/forages are the cheapest feed sources for both sheep and goat production. Therefore, they should use them to the fullest extent. Establish a grazing system using both cool-season species such as tall fescue and warm season grasses such as bermudagrass, bahiagrass, and dallisgrass in mixture with legumes (white, red clover, or alsike clover). For winter feeding, planting small grains (wheat, rye, oats, and barley) and annual ryegrass in combination with crimson clover or arrow leaf clover reduces feed cost and the need for stored forage. The addition of forage legumes to grazing or haying systems provides additional protein, energy, and palatability to the feed produced. Further, legumes add nitrogen to the soil for grasses to utilize and assist in filling in the grass sward to inhibit weed growth. The selection of the “best” grass/legume system must consider both the adaptability of a particular type of forage to a specific site and soil, the nutritional needs of the animals, and the management goals of the producer.

Legumes such as alfalfa, clover, and lespedeza tend to be higher in protein, vitamins, and minerals (especially calcium) than grass hays. The energy, as well as protein content, depends upon the maturity of the forage when it is being harvested. Maintaining an adequate grazing height is important because these small ruminants eat in layers from top of the plant to the bottom. Pasture height and biomass will greatly affect intake, quality, and nutritional status of sheep and goats. Several studies have shown that intake by goats decline when forage availability is below 1,000-1,200 lb. of dry matter per acre because the animal cannot get a “mouthful” with each bite. Overgrazing the pasture not only affects animal intake but also affects forage recovery time because the remaining leaf area for photosynthesis is minimal.

Managed grazing with sheep and goats usually results in a substantial increase in vegetative cover by favorable grass and legume species while reducing or eliminating unwanted shrub species. Since goats, cattle, and sheep prefer different forages, in many pasture situations these species do not compete for the same food. Therefore, they can be managed quite successfully in a multispecies grazing system, allowing the land to be used more fully and generate more income. Some studies have shown that land grazed by both goats and cattle returns 25% more than land grazed only by cattle. Adding sheep and goats to a grazing system will have weed control benefits. Goats will eat such weeds, therefore decreasing the need for commercial herbicides or mowing.

Sheep make efficient harvesters of forage crops. However, one of the biggest challenges of grazing sheep is the economical and effective control of internal parasites. Sericea lespedeza is a legume that grows in low fertility and acid soils and it has been associated with parasite control. Sericea lespedeza is a high-tannin forage that has been scientifically proven to reduce parasite loads in sheep and goats. Sheep and goats may need time to adjust to grazing sericea lespedeza. Cattle will graze sericea lespedeza if it is not too mature. Producers should not rely on sericea lespedeza as the sole method for controlling internal parasites in small ruminant operation.

Understanding the nutritional needs of goats and sheep is important in developing a forage program (Table 1). Sheep and goats must consume a more concentrated diet than cattle because their digestive tract size is smaller relative to their maintenance energy needs. Average meat goats require about 10-14% crude protein and 60-65% Total Digestible Nutrients (on a dry matter basis) in the total diet. Pasture, forbs, and browse are usually the primary and most economical source of nutrients for sheep and goats. In most cases, pasture is all small ruminants need to meet their nutritional requirements since they tend to be high in energy and protein when it is in a vegetative state. Rotating the pastures to keep plants in a vegetative state is important since palatability and digestibility decline as the plants mature. During the early part of the grazing season, browse (woody plants, vines and brush) and forbs (weeds) tend to be higher in protein and energy than ordinary pasture. Sheep are excellent weed eaters. Goats are generally considered a browse-consuming species and they have the unique ability to select plants when they are at their most nutritious state.

Table 1. Nutritional requirements for various classes of sheep and goats:

Livestock	Total Feed Intake (lb/day) ¹	Crude Protein (%)	Energy (TND) (%)
Sheep			
Maintenance (154 lb mature ewe)	2.6	9.6	57.6
Late Gestation (180 – 225% lamb crop expected)	4.0	11.2	66.7
Lactation			
Single	5.5	13.3	65.0
Twins	6.2	14.8	65.0
Early Weaned Lambs (66 lbs)	2.5	14.5	75.8
Moderate to High Growth			
Lamb Finishing (88 lbs) 4-7 mo	3.5	11.7	77.1
Yearlings (118 lbs)	2.5	9.1	57.6
Goats			
Bucks (80 – 120 lbs)	5.0	11.0	60.0
Dry Doe	4.5	10.0	55.0
Late Gestation	4.5	11.0	60.0
Lactation			
Avg. Milk	4.5	11.0	60.0
High Milk	5.0	14.0	65.0
Weanling (60 lb)	2.0	14.0	68.0
Yearling	3.0	12.0	65.0

¹90% Dry Matter Basis

Source: National Research Council, 2007.

Summary

There is not just one type of pasture than can or even should be used. It is good to have a diversity of cool- and warm-season grasses to minimize hay need. This is not to say that different plant species do not each have their own specific advantages and disadvantages. Maintain low stocking rates and graze sheep and goats with cattle, or in a rotation with cattle or horses. The role of goats and sheep as biological control agents will become increasingly important in pastures in the future due to elevated costs of other control methods such as mechanical cutting and herbicide application, where energy utilization is an issue.

What's Going on With Lumber Prices?

By: Brent Sohngen, Professor Environmental and Natural Resource Economics.

Source: <https://u.osu.edu/aede/2021/05/08/whats-going-on-with-lumber-prices/>

In case you haven't noticed, lumber prices have increased a lot over the last year. Based on the US Bureau of Labor Statistics Lumber Price Index, which you can find at: <https://fred.stlouisfed.org/series/WPU081>, lumber prices have increased 180% since April, 2020. This increase started last fall, and has continued ever since. So, why have they risen, and how high will they go?

Let's start with the first question, why have they risen? The economic explanation is relatively straightforward: Demand rose rapidly due to pandemic related building, and supply is really inelastic, as we say in economics. Thus, while the demand of wood has increased dramatically, the supply of wood hasn't been able to keep up. Let's break this down.

Consider the demand side first. The construction sector, specifically building and remodeling houses, is one of the largest demanders of lumber in the US and around the world. New home starts and construction spending cratered at the beginning of the pandemic, but they rebounded pretty quickly. Remodeling in particular seems

to have picked up a real head of steam.

While demand for new construction and remodeling is hot, it's actually now at about the same level as before the pandemic. So something else must be going on. One of those something else's is the price of steel, which has also increased dramatically in the US. Steel is a substitute for wood, especially in commercial construction, and rising steel prices have also driven up demand for lumber and other things that can be made out of wood or steel.

Ok, so the demand side is going crazy. What about supply? The supply side in forestry is really inelastic. That is, it's hard to make big increases in supply in short periods of time. There are lots of reasons for this.

First, you can't build a lumber mill overnight. And after some mills slowed down during the depths of the pandemic, and others closed, it's not as simple as just turning the key to start the remaining ones back up. You need trained workers, the machines are pretty complicated and may need some maintenance work before re-starting production, and you need logs.



Second, getting logs is not easy either. There is a whole complicated supply chain associated with delivering logs to mills that itself has been affected by the pandemic.

Third, the supply of logs is super-inelastic because of the way trees grow. Plantation trees, which supply around 50% of our timber in the US, put on a lot of value in the 5-10 years before they are harvested. Most people who own these trees don't want to cut them too early because they'll miss this value growth, which could be 8-12% or more per year.

When plantation trees are cut, they actually are still growing, perhaps 6% per year, so if prices start rising really quickly, many landowners may actually hold them longer than they would otherwise because they get some nice volume growth plus the price growth. So when prices rise rapidly as they are now, the supply of logs contracts a bit because landowners hold onto their trees. Seems strange, but the value growth that occurs with the rising prices gives people who own trees a real reason to put off logging for a while.

Fourth, the supply of logs from our main source of imported lumber, Canada, is super inelastic because most supply there is from public lands, and is controlled by government allowable cut constraints. These allowable cut constraints are set administratively, not economically, and thus limit their ability to increase supply in times of high demand.

There are some other issues at play, including US tariffs on wood, but most of this dramatic increase in prices is due to short-term market phenomena related to the rebound from the pandemic, not any long-term structural issues or limitations in supply. In fact, evidence from the US South, which is our main timber growing region in the US, indicates that an enormous area of trees has been planted in the last decade, providing a reasonably long-term supply of wood.

Further, supplies of plantation timber in other productive regions of the world, especially South America, but also China, New Zealand, Australia, and parts of Southeast Asia, are expanding. The current high prices for lumber may linger for a while as demand continues to rebound from the pandemic, and due to overall inflationary pressures, but over the next 6 months to a year, prices should stabilize. And over the longer-run, there will be plenty of wood to go around.

Dairy Excel- Managing When Normal is not Normal Anymore

By: David Marrison, Coshocton County Extension Educator

Originally Written for May 13 Edition of the Farm & Dairy Newspaper

Hello, Northeast Ohio! Almost 16 months ago, the first case of coronavirus was confirmed in the State of Washington. Since that time, life has been anything but normal or predictable for families and businesses.

Even though we are getting more glimpses of normality, it is apparent to me that how we operate in the future will never be the same. Even today, the ripple effects of the past year continue. Labor shortages and supply chain issues are showing up with many of these shortages predicted to linger into the 2022 cropping year.

The pandemic has revealed how dependent our agricultural supply chain is on the timely delivery of goods and services and having healthy and available agricultural workers. Most of us are aware of the shortage of lumber but other issues are creating headaches for farmers across the country. As I have visited with farmers and local ag dealers they are indicating tight supplies of herbicides, fertilizer, tillage parts, and fence posts. A pinch on plastic supplies is also causing shortages in drainage tile, bale wrap, and other plastic-based materials.

As we analyze the crazy pandemic year and its lingering impacts, we have been asked how should successful farm managers plan for the future. Recently, I brainstormed with my colleagues Chris Zoller and Mike Estadt on tips for managing when normal is not normal. Here is some food for thought.

First, having sound business practices and structure are the foundation for businesses to fall back on when facing internal and external disruptions. Make sure to take time to develop or review your farm's written mission statement. Involve family and employees in the discussion.

It is also recommended to develop written goals – both short-term and long-term. You are more likely to achieve goals that are written and shared with others. Post pandemic is also a great time to conduct a SWOT Analysis – to review the Strengths, Weaknesses, Opportunities, and Threats related to your business.

Secondly, we offer the following suggestions for you to consider as we move forward:

1. Do not rely on government farm programs as income sources as you develop enterprise budgets specific to your operation. Check out OSU budgets at: <https://farmoffice.osu.edu/farm-mgt-tools/farm-budgets>
2. Work toward being a low-cost producer by knowing 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.
3. Develop contingency plans and emergency preparedness plans for overcoming disruptions which impact your business. How will work get done if employees get sick or are in quarantine? How will you overcome future slow-downs in the supply chain? What is your plan B when you can't get the parts you need? What happens if crops or livestock cannot be received by their end market?
4. Enroll in the Ohio Farm Business Planning and Analysis Program to fully understand your farm operations financial strengths and weaknesses. Learn more here: <https://farmprofitability.osu.edu/>
5. Review leases and contracts annually.
6. Hold family meetings – to discuss finances, review your mission statement, complete a SWOT analysis, and develop goals. See this OSU Extension Fact Sheet: <https://ohioline.osu.edu/factsheet/anr-43>
7. Network with your peers. Share successes and challenges.
8. Form and meet with a farm business advisory team that may include one or more of the following: Extension Educator, accountant, lender, nutritionist, crop advisor, insurance agent, and others important to your business.
9. Utilize OSU Extension resources – Ohio Ag Manager (<https://u.osu.edu/ohioagmanager/>), Farm Office (<https://farmoffice.osu.edu/>), Crop Observation and Recommendation Network

(<https://agcrops.osu.edu/>), Beef Cattle Newsletter (<https://u.osu.edu/beefteam/>), and Buckeye Dairy Newsletter (<https://dairy.osu.edu/>) to help stay up to date.

So how will you manage, when normal is not normal? As you ponder the future, I offer the following quote from Kristin Armstrong who stated “Times of transition are strenuous, but I love them. They are an opportunity to purge, rethink priorities, and be intentional about new habits. We can make our new normal any way we want.” Have a good and safe day!

Maple Leaf Development & Heavy Seed Production

By: [Joe Boggs](#)

Source: <https://bygl.osu.edu/index.php/node/1776>

Concerned Ohioans are reporting their maples have stunted leaves or no leaves at all; particularly towards the top of the tree. Several issues can produce thinning maple canopies including poor site conditions, girdling roots, a vascular wilt disease, etc. However, it's unlikely one of these issues has become so common or multiple issues have converged to produce a general widespread maple malaise throughout Ohio.

It's more likely the common condition of thin maple canopies is a condition common to maples. Indeed, red (*A. rubrum*), silver (*Acer saccharinum*), and sugar maples (*A. saccharum*) in many regions of Ohio, as well as Indiana and Kentucky, have produced loads of winged seeds (samaras). The challenge is that the timing of the blooms and thus seed production varies widely between the three dominant maple species in Ohio with red maples usually the first to bloom and sugars the last.

Obviously, heavy maple seed production is a natural event securing the survival of the species as demonstrated by hordes of maple seedlings eventually appearing in landscapes, vegetable gardens, and gutters. However, this blatant demonstration of plant gene continuity can produce canopy conditions that make maples “look sick” causing homeowners to question the overall health of their maple trees.

The first challenge is the prolonged presence of stunted leaves. Trees shift energy to support heavy seed production at the expense of leaf expansion. Abundant springtime samaras by themselves can draw attention to maple trees, particularly when the seeds mature and turn brown. The trees will look bare when the massive numbers of seeds drop from the trees because the stunted leaves need time to fully expand to fill out the canopy. So, homeowners need to be patient.

It was once believed that prolific tree seed/fruit production is connected to tree stress. The theory was that heavy seed production occurred on stressed or dying trees as a last hurrah in support of the species. However, research has failed to provide consistent support for this speculative conjecture. For example, a study published in 2017 in the Canadian Journal of Forest Research found no evidence that stress associated with drought over previous seasons influenced seed production in sugar maples.



Another hypothesis emerged several years ago linking heavy seed production to the lack of spring freeze events. The thinking was that maples are by nature heavy seed producers but their effusive reproductive efforts are occasionally thwarted by freezing temperatures killing the flowers or nascent seed. This explanation carries some weight given that observations across Ohio in past years support a reduction in seed loads after spring freezes damaged vulnerable flowers or seeds.

However, research has shown that another important variable must also be considered. As with oaks, sugar maples exhibit synchronous seed "masting" in which all trees in a population produce heavy seed in certain years. It is thought synchronous flowering by wind-pollinated trees enhances the success of pollen finding its way to receptive flowers. Also, heavy seed production can overwhelm seed predators which enhances successful maple stand regeneration.

Thus, heavy seed production occurs with the convergence of two events: a heavy "masting" year for the maple trees coupled with the lack of a killer freeze. It appears that maples in many areas of Ohio dodged the frozen bullet that put the kibosh on beautiful magnolia bloom displays.



The bottom line is that while heavy maple seed production is not consistent throughout Ohio, Indiana, and Kentucky, it's substantial enough in many areas to noticeably affect leaf expansion. The good news is that full canopies will eventually prevail; it will just take a little longer on trees that have produced a lot of seed.

Get Your Victory Garden Seeds from Master Gardener Volunteers

The Ohio Department of Agriculture (ODA) and OSU Extension Offices are kicking off the second year of the Victory Gardens Program. OSU Extension and the Coshocton County Master Gardener Volunteers have 300 seed samples for the Coshocton County Community. Each packet contains radishes, cucumbers and sunflowers. The Master Gardeners have been distributing the seed packets across the county and we still have a few remaining packets which can be picked up at the Coshocton County Extension office on Monday, Wednesday, and Friday from 8:00 to 5:00 p.m. The Extension office is located at: 724 South 7th Street, Room 110 in Coshocton, Ohio.

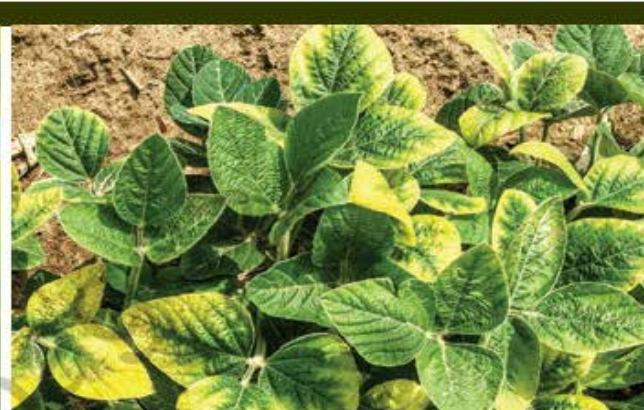


“You don't climb mountains without a team, you don't climb mountains without being fit, you don't climb mountains without being prepared and you don't climb mountains without balancing the risks and rewards. And you never climb a mountain on accident - it has to be intentional.”
Mark Udall



TRI-STATE FERTILIZER RECOMMENDATIONS

for Corn, Soybean, Wheat, and Alfalfa



OHIO STATE UNIVERSITY EXTENSION – TUSCARAWAS COUNTY

Fertilizer Certification for NEW Applicators

Do you apply fertilizer to more than 50 acres of land? If so, the Ohio Department of Agriculture requires you to obtain a Fertilizer Certificate. This class will review laws, water quality, soil sampling & analysis, and nitrogen and phosphorus management.

Wednesday, May 19, TIME: 7:00P.M.

LOCATION: Sugarcreek Stockyards, 102 Buckeye St, Sugarcreek

COST: None

Pre-registration required. Please call 330-339-2337.

If calling after business hours, please press 1 (Michelle Moon) to leave a message.

All current health guidelines will be followed per the Ohio State University. A facial covering must be worn at all times and the current social distancing practice of 6 feet per person will be maintained. Please stay home if you are not feeling well or if someone in your family is ill. You are welcome to bring your own drink and/or snack.

[Tuscarawas.osu.edu](https://tuscarawas.osu.edu)



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OHIO STATE UNIVERSITY EXTENSION

VIRTUAL POULTRY CLINIC

BACKYARD POULTRY PRODUCTION

Learn the basics of raising backyard chickens, ducks and more! Tim McDermott, DVM and Extension Educator, will discuss key aspects to managing your flock. Topics covered include care, housing essentials, and general nutrition. All youth are welcome to attend!

TUESDAY, MAY 25TH, 2021 6:30 PM

Location: Zoom

Cost: FREE

Registration: Pre-registration is required. Once registered, a webinar link will be sent to the email address provided. Register at [**https://go.osu.edu/2021backyardpoultry**](https://go.osu.edu/2021backyardpoultry)

Send questions to: Angie Allison – allison.325@osu.edu or Erika Lyon – lyon.194@osu.edu

[**jefferson.osu.edu**](http://jefferson.osu.edu)



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