Late Summer is the Best Time to Establish Cool-Season Forages

The period from late summer into early fall is the best time to establish common cool-season grasses such as orchardgrass, tall fescue, timothy and bluegrass for pasture or hay in Kentucky. These four grasses make up 95 percent of our pasture acreage.

Many years of research have shown this period provides the best chance for successful establishment. Mother Nature has a hand in this because seed produced in late spring remains dormant until late summer, and early fall rainfall provides the moisture necessary for the seed to germinate.

To increase your success rate, remember these four points:

First, address soil fertility needs by applying lime and fertilizer based on a current soil test. Inadequate levels of phosphorous, potassium or limestone will limit the success of late-summer seedings. For pure grass stands, apply nitrogen at the rate of 40 to 60 pounds per acre.

Second, control competition. Late-summer seedings most often fail from competition and lack of water. When you control existing vegetation with herbicides or tillage, the emerging seedlings will have access to whatever water and nutrients are present without having to compete with weeds.

To maximize the success of seedings, use a burn-down herbicide ahead of planting to kill annual weeds. Translocated herbicides can be used where labeled to kill or suppress perennials such as Johnsongrass.

(Continued on next page)
Remember to wait two to three weeks after spraying translocated herbicides before you plant in no-till situations. This will allow time for killed weeds to dry out and for residual effects of the herbicide to decay.

Third, select high quality seed of an adapted variety. Planting high quality seed is an essential step toward establishment and longevity of a pasture. These seeds have high percentages of germination, low percentages of weed seed and freedom from noxious weed seed.

Use varieties that have a proven track record of performance in Kentucky. The University of Kentucky conducts extensive research on varietal performance, which can be found on the UK Forages website, https://forages.ca.uky.edu/variety_trials. Here you will find all of the current results for the major forage crops in Kentucky, including cool-season grasses.

Look for varieties that have performed well across several test years and locations. These varieties will have improved yield, quality, persistence, disease resistance or other positive traits. If you’re uncertain about a variety’s adaptation and performance, you can obtain information on the leading performers in the UK forage variety tests by contacting me at the Boone Cooperative Extension Service.

Fourth, seed at the proper time and depth. Seed legumes and grasses before mid-September. Grasses are less sensitive to later seeding than legumes. The major cool-season grasses will not do well if you simply broadcast them onto existing overgrazed or mowed pastures. Forages should be seeded no deeper than one-fourth to one-half inch.

Late-summer alfalfa seedings are susceptible to sclerotinia stem and crown rot. If sclerotinia has been active in your area or farm, strongly consider waiting until next spring to seed.

*Source: Jimmy Henning, Extension Forage Specialist*

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**Frequently Asked Questions about Harmful Algal Blooms (HABs) in Farm Ponds used to Water Livestock**

Water is the most essential nutrient in the diet of cattle, and during hot and dry weather, it is especially important to monitor water quality if using farm ponds for livestock.

**What is a “harmful algae bloom” or “HAB”?** During periods of hot and dry weather, rapid growth of algae to extreme numbers may result in a “bloom,” which is a build-up of algae that creates a green, blue-green, white, or brown coloring on the surface of the water, like a floating layer of paint (see Figure 1). Blooms are designated “harmful”
because some algal species produce toxins (poisons) when stressed or when they die. The majority of HABs are caused by blue-green algae, a type of bacteria called “cyanobacteria” that exist naturally in water and wet environments. These microorganisms prefer warm, stagnant, nutrient-rich water and are found most often in ponds, lakes, and slow moving creeks. Farm ponds contaminated with fertilizer run-off, septic tank overflow or direct manure and urine contamination are prime places for algae to thrive. Although blooms can occur at any time of year, they happen most often in the warmer months between June and September when temperatures reach 75 degrees or higher and ponds begin to stagnate. HABs can reduce water quality and intake, but more importantly, they can be deadly when ingested by livestock. Windy conditions can push algal blooms along water edges, increasing the risk for livestock to ingest algae when they drink.

Are all algal blooms poisonous to cattle? Of the more than 2000 species of blue-green algae identified, at least 80 are known to produce toxins (poisons) that can affect animals and humans (see Table 1 for the most common toxins). Blue-green algae toxins are released when algal cells are damaged and die in the water (for instance, after water is treated with an algaecide such as copper sulfate), or when ingested water reaches the animal’s digestive tract and algal cells are disrupted, releasing the toxins. The most common species of blue-green algae in North America associated with livestock poisoning are *Anabaena* (also known as *Dolichospermum*, *Aphanizomenon*, *Oscillatoria*, and *Microcystis*). *Microcystis* is the most common bloom-forming genus, and blooms are typically a greenish, thick, paint-like (sometimes granular) material that accumulates along shores. If an algal bloom is noticed, testing of water samples with the algae is recommended because it is impossible to tell visually if a water source contains blue-green algae or not, or to determine which specific species is present without laboratory identification. Be aware that just having a blue-green algae bloom present in a pond does not automatically mean toxins are being produced but it is best to assume the water could be dangerous if used for livestock drinking water.

What are the most common signs of poisoning in cattle from blue-green algae? Livestock are most at risk when drinking contaminated water or licking algae from their hair coat. Most cattle exposed to blue-green algae toxins die quickly and are often found dead very near the water source. Cyanobacterial toxins (“cyanotoxins”) primarily harm the liver and/or nervous system and have been implicated in both

![Figure 1: Pond in Scott County - Photo courtesy of Dr. Michelle Arnold, University of Kentucky](https://www.epa.gov/sites/production/files/2016-06/documents/water-utility-managers-guide-cyanotoxins.pdf)
human and animal illnesses and deaths worldwide. Some algae produce potent neurotoxins (toxins affecting the nervous system), most often the toxin Anatoxin-A, that may cause cattle to exhibit muscle tremors, difficulty breathing, wobbly gait, seizures, profuse slobbering, diarrhea, and rapid death within minutes to hours. Other algae types produce hepatotoxins (toxins affecting the liver), most commonly the microcystin toxin, that can cause sudden death or a more delayed onset of death after signs of liver failure develop, including lethargy, diarrhea, and weakness. Cattle that survive the acute stages of liver damage may develop photosensitization, a skin condition in which white (light or non-pigmented) areas of skin along the back, face, sides of udders, muzzle, underside of tongue, lips, eyelids, and ears will become red and swollen then will become crusty and peel. The only treatment for exposure to any cyanotoxin is supportive care and medications to alleviate the symptoms.

**Are humans affected by these toxins, too?** Human poisoning associated with cyanotoxins most commonly occur after exposure through drinking contaminated water or after participating in water recreational activities. Exposure can result in a number of symptoms in people including skin rashes; eye, nose, mouth, or throat irritation; allergic reactions; headache and malaise; and gastrointestinal upset including abdominal pain, nausea, vomiting, and diarrhea. In humans, it is believed the toxin must be ingested for fatalities to occur. For protection of human health from exposure to the algae and any of the toxins, many states use the World Health Organization (WHO) guideline level of 100,000 algal cells/ml water or a microcystin toxin level of 6 parts per billion (ppb) for a Recreation Advisory and beaches will be closed if the microcystin toxin level reaches 20 ppb. For more information, visit the EPA website to view “A Water Utility Manager’s Guide to Cyanotoxins” at [https://www.epa.gov/sites/production/files/2016-06/documents/water-utility-managers-guide-cyanotoxins.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/water-utility-managers-guide-cyanotoxins.pdf).

**How do I test water for blue-green algae toxins?** Unfortunately, testing water for the actual toxin is problematic because toxins are not uniformly distributed in the water source, testing can be quite expensive, and there are many blue-green algae toxins for which no diagnostic tests exist. The Kansas State Veterinary Diagnostic Laboratory accepts water samples for blue-green algae identification by microscopy and will also test for the amount of microcystin, the most common toxin. When sampling water, make sure to wear gloves and collect at least 500 mls (16 ounces) of water approximately one inch below the water surface. Samples should be refrigerated before and during shipping but do not freeze. Please visit their website [http://ksvd.org](http://ksvd.org) and search under “algae” for further information regarding sampling, shipping and pricing. The Indiana Department of Environmental Management released a “Blue-Green Algae Sampling Resource List” in 2014 of companies that provide blue-green algae sampling and analysis services. The list can be found at [http://www.in.gov/idem/algae/files/bluegreen_sampling_services.pdf](http://www.in.gov/idem/algae/files/bluegreen_sampling_services.pdf). Many algal blooms in Kentucky are composed of harmless green algae which may look like underwater moss, stringy mats or floating scum. There are a couple of simple field tests a pond owner can do to quickly assess the likelihood of blue-green algae in the water. The instructions from the Kansas Department of Health and Environment for the “Jar and Stick
**How do I prevent poisoning from Blue-Green Algae?**

For livestock and pets:

- Always assume that a blue-green algal bloom is toxic.
- Provide constant access to clean, clear fresh water and fence off or otherwise prevent access to stagnant, scum-covered ponds. Fencing off surface water sources and providing alternative clean water sources is the best option for healthy cattle for many reasons, not just HABs.
- Do not allow animals to contaminate the water with feces and urine. Prevent fertilizer or manure runoff from entering water sources. Phosphorous is particularly important in fueling cyanobacteria growth (see Figure 2).

If a water source is treated with an algaecide such as copper sulfate, prevent animal access to the water for at least a week or longer to allow degradation of any released toxins in the water. It is best to wait until the pond is no longer stagnant and test the water before allowing animals to drink from it.

- Creating and maintaining natural buffers such as grass strips, trees and shrubs between farmland, housing developments and waterways can help filter out excess nitrogen and phosphorus before they reach the water.

**Humans:**

- Do not swim or allow children or pets to swim in water with scum layers or blooms. Avoid jet-skiing, windsurfing, tubing, or water-skiing over scum or blooms.
- Do not use untreated water for drinking, cleaning food, or washing camping gear.
- Do not boil water to remove blue-green algae; this will not remove algal toxins.
- If you come into contact with a bloom, wash your skin and hair thoroughly. If your pet comes into contact with a bloom, wash it thoroughly with clean water to prevent blue-green algae ingestion when your animal licks itself.
- Do not eat fish or shellfish caught or harvested in a bloom area.
- Respect any water body closures by public health authorities.

**Game Day Sloppy Joes**

1 pound ground chuck  
⅞ cup onion, chopped  
½ cup celery, chopped  
1 (15 ounces) can tomato sauce  
2 tablespoons quick cooking oats  
1 teaspoon seasoned salt  
1 teaspoon Worcestershire sauce  
½ teaspoon chili powder  
¼ teaspoon pepper  
Dash hot sauce  
12 hamburger buns

In skillet, cook ground chuck, onion and celery over medium/high heat until meat is browned and onion is tender. Drain off excess fat.  
Stir in tomato sauce, oats, seasoned salt, Worcestershire sauce, chili powder, pepper, and hot sauce.  
Simmer, uncovered, on a low temperature for 30 minutes. Stir often.  
Spoon about ⅓ cup of the sloppy Joe mixture onto each bun.  
Makes 12 servings. Serving Size: ⅓ cup sloppy joe sauce on 1 bun.  
Nutritional facts per serving: 220 calories; 89 total fat; 25g saturated fat; 125mg cholesterol; 590mg sodium; 26g carbohydrate; 8g fiber; 5g sugar; 12g protein; 0% Daily Value of vitamin D; 6% Daily Value of calcium; 15% Daily Value of iron; 6% Daily Value of potassium.  
Source: Sarah Brandl, Extension Specialist, University of Kentucky Cooperative Extension Service

**Figure 2:** Cattle contribute excess nutrients to surface water by urinating and defecating in or around ponds and streams. Excess nutrients can also enter waterways as runoff from fertilized fields or manure laden pastures. Source: Donnie Stamper, Biosystems & Ag Engineering, UK

Tests” may be found at [http://www.kdheks.gov/algae-illness/download/Jar_Test.pdf](http://www.kdheks.gov/algae-illness/download/Jar_Test.pdf). Remember these field tests are not even close to 100% accurate so follow-up testing is recommended to definitively determine what algae species are present.

Source: Michelle Arnold, DVM-Ruminant Extension Veterinarian (UKVDL)
Cattle Cycle Dynamic

As covered by David Anderson, there were no big surprises in the recent July 1 Cattle Inventory report. The beef cow herd was estimated to be the same as a year ago while the number of heifers held back for replacements was lower than a year ago. These estimates were in line with what was expected following the January report.

There has been plenty written about the current cattle cycle topping out and this report was another piece of evidence supporting that story. The July report marked the fourth consecutive January or July report that showed less than one percent growth compared to the previous year. While still not a decline, these modest or flat growth numbers are a contrast to the rapid growth from 2015-2017.

This is a natural time to look at the longer-view state of the cattle and beef cycle. The July story from 2017 to 2018 was larger calf crop but fewer heifers retained. The story from 2018-2019 is a small decline in the calf crop and even fewer heifers retained. The estimated 2019 calf crop of 36.3 million head would be the first calf crop decline (albeit a small decline) when compared to the previous year since 2014.

Cattle on feed are at record large levels that would be expected at the peak of a cycle. However, dressed weights have moderated over the past few years and especially in the past few months which has softened some of the impacts of larger cattle inventories on total beef production. June marked the ninth consecutive month that federally inspected steer dressed weights were lower than the previous 5-year monthly average. This is pretty rare given that dressed weights have been increasing for decades but not too unusual when in the context of the current cycle. The same streak of declines occurred in 1996-1997 which was the peak of the 1990-2004 cattle cycle and there was also a similar period in 1984 which was near the peak of the 1979-1990 cycle.

While it is fairly clear that the cattle numbers have leveled out (at least for now), the story is different for beef. The natural lags in the cattle and beef sector cause beef production to peak later than cattle do. Beef production will continue to be bigger for the next few years while these supplies work through the beef supply chain.

Source: Josh Maples, Assistant Professor & Extension Economist, Department of Agricultural Economics, Mississippi State University

Lender Relationships

Agriculture, from row crops to poultry, is a capital intensive industry. Add to that, the fact that net farm incomes across the state have taken a hit over the last couple of years, and the importance of the lender relationship is obvious. A great relationship between farmers and their lenders is critical to the success of the operation. Banks and lenders are aware that the farm economy is struggling. Some banks have become hesitant to lend to farmers, regardless of their financial stability. Now, more than ever, it is important for the farmers to have a good relationship with their lenders. The lender should be a key member of the business team. There are several keys to building the lender relationship including treating the lender as a partner and being open, meeting in person, not letting emotions take over, providing complete information, asking for lender input, and looking at all of the options the bank has to offer.
Farmers and lenders need to have a strong and trustworthy relationship in order for the farm business to thrive and overcome financial stress. The lender needs to be treated as a partner and have the same goals for the operation. Lenders should want to see the operation succeed and grow. Farmers need to be open with their lenders and make sure everything is communicated clearly. The lender should hear about, not only the successes of the operation, but also any problems that arise. It is better for the lender to hear about the problem directly, rather than from another member of the team. Open and honest discussions between farmers and lenders will go a long way in developing a positive relationship.

Another factor to improve this relationship is to meet in person. So much can be learned, by both the farmer and the lender, with face-to-face interaction. In this technology driven world, it is easy to communicate via other options, but face-to-face interaction takes a bit more effort and should prove that the relationship is valued. Farm visits actually allow the lender to learn more about the operation than can be learned over the phone or through an email. The hard work and strengths of the operation will be evident and this should provide positive reassurance to the lender.

It is important for farmers to not take the everyday frustrations of farming out on the lender. The markets may be down or rain may have caused replanting, but the lender is trying to survive in the same environment. The emotions of all of the hard work of farming should be “checked at the door” during lender conversations. It is important for farmers to be respectful and stay focused on the goals rather than letting frustration and emotions drive the conversation.

Just as important as being open and communicating clearly, is making sure complete information is provided. Farmers need to ensure that accurate and complete information is given to the lender. The lender needs the full financial picture in order to meet the needs of the operation. At the end of the year, the lender will be able to see the accuracy of the information. Trying to hide additional liabilities is only going to hurt the relationship in the end. If farmers can provide the lenders a budget or projection in addition to complete financial statements, credibility with the bank will be built.

The lenders are not only a source of borrowed money, but can also be a source of constructive input to the farming operation. Asking lenders to give guidance and insight on how to ensure the success of the operation will strengthen the relationship.

Farmers should be open to the different debt financing options the bank may have to offer. In the lender relationship, it is important to advocate for the needs of the operation but also to understand what solutions are available. The farmer should demonstrate that they care about the money the bank is lending as the banks aren’t designed to shoulder huge levels of risk. The presentation of effective and well thought out plans for the borrowed money is important to the lenders.

The relationship between farmers and trusted lenders is one key for reaching goals. Farmers should make an effort to work closely with lenders and be willing to fully disclose the financial situation of the operation. Just as growing an excellent crop takes hard work on the farmer’s part, building a strong and trustworthy relationship with the lender requires dedication and hard work from both the farmer and the lender.

Source: Lauren Turley, Area Extension Specialist in Farm Business Management, Ohio Valley Farm Analysis Group
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Mark your calendars now!
► Labor Day— Office Closed
   September 2, 2019
 ► Rinse & Return
   September 9, 2019 • 9—11am
   Boone County Extension office
 ► Drones: A New Tool for the Farm Toolbox
   October 3 • 6:00pm
   Extension Enrichment Center
 ► Artificial Insemination School
   October 8, 9 & 10 • 9am—3pm
   Boone County Fairgrounds
 ► Trusts 101
   October 15 • 1:30pm OR 6:30pm
   Extension Enrichment Center
 ► Beef Nutrition
   Sponsored by Fagaly Feed
   October 16 • 6pm
   Extension Enrichment Center
 ► Learn the Art of Taxidermy
   October 29 • 6pm
   Extension Enrichment Center
 ► Happy Halloween!!
   October 31

Farm Frenzy is an educational program about how agriculture is related to food and fiber production. There will be live animals to see, growing plants, fruits and vegetables to sample, farm equipment to observe, farmers to talk with, and much more. Farm Frenzy will be presented at the Boone County Extension Enrichment Center, 1824 Patrick Dr., Burlington.

You can receive this newsletter by email rather than postal mail. Please email us at boone.ext@uky.edu with your request.

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