When Should We Mow Pastures?

The spring of 2018 was the latest I can remember feeding hay to cattle and many producers were searching at the last minute to find some extra hay. Pastures were very slow growing this spring until it finally warmed up in early May. On my farm, common orchardgrass typically starts heading out in late April and it was two weeks later this year. The late arriving spring brought many challenges around farms and the rush to get crops in the ground and to make hay has put mowing pastures on the back burner. However, now may be a great time to mow pastures.

Our perennial grasses go through two stages during the growing season: the reproductive stage and then the vegetative stage. When grass starts growing in the spring, its’ main objective is to reproduce, resulting in a seed head. The net movement of energy is up. Once it has produced a seed head, it will transition from the reproductive stage to the vegetative stage and hopefully the net movement of energy will be down. At that point, the plant wants to store enough energy in the roots or base of the plant to survive through the winter. It is at that point of transition that it is a great time to mow pastures. Once the plant has set a seed head, the quality of the grass, especially the stem and seed head is low. Removing the stem and seed head will even stimulate new growth. At this point, new growth will be leaves which will be high in quality for livestock and the leaves will capture sunlight and provide energy for the plant. While grass has been headed out for a while, mowing pastures soon to remove seed heads is a great option if needed in our pastures.

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We need to keep in mind the three big grazing principles to make pasture management successful; avoiding seed heads, residual management and rest periods. I have started to cover the first principle, but as I transition to residual management, cutting height can play a big role with how close animals will graze and what type of forage will be favored. I have consistently noticed over the years that after I mow a pasture, especially with a sickle bar mower that my cattle will readily graze the new growth, but grazing intensity will slow if they need to graze into the previously mowed stubble, especially in pastures with thick stemmed grass like fescue and orchardgrass. We have some ability to influence how close cattle graze. In addition, cutting height can influence what type of grass will grow. For example, orchardgrass stores its energy in the base of the plant above ground. If we mow or graze too close, we may eventually kill off that plant and possibly favor growth of fescue, bluegrass, and weeds. If we graze or mow higher, we favor orchardgrass growth and allow all the grasses to continue leaf development without the roots ceasing growth to produce new leaves.

Finally, it is critical to give the plants a chance to rest after being mowed or grazed. This will allow the plants to store energy in the roots or base as the leaves grow.

Now that we have addressed the needs of the grasses, how about our other problem with pastures: weeds. My colleagues Mark Landefeld, Ted Wiseman, and Jeff McCutcheon are in the fourth year of trying to determine when is the best time to mow pastures to control weeds. We have research plots at the Eastern Agricultural Research Station near Caldwell that are mowed at different times. Some plots get mowed one time a year in June, July, August or September; some plots all four times (each month); the control plots (not at all); and we have plots that are mowed in June and August; or July and September. The results of the 2017 study suggests that mowing in June and August works as good as mowing every month to control weeds, and the June mowing will remove the seed heads. With the late start of the season we have had this year, this strategy may be an option depending on your weed pressure.

For many of us, we are lucky to be able to mow pastures once a year but consider the needs and your priorities for your pastures. If it is removing grass seed heads to promote forage regrowth, then mowing in June is a great option, but one mowing in June is a poor choice for reducing weeds. If perennial weeds are a problem, consider mowing them just before their seed heads become viable. Plot data appears to show that if you can mow twice; once to remove seed heads and one to suppress persistent weed problems, the June and August option, is best.
With all of the other activities we have to accomplish on our farms, sometimes mowing pastures falls down on the list of things to do. If we can evaluate the needs such as seed head removal and weed control, maybe we can better time our pasture mowings.

Source: Chris Penrose, OSU Extension Educator, Agriculture and Natural Resources, Morgan County (originally published in the Ohio Farmer on-line)

**Short Pastures and Supplementation Considerations**

Several county Ag Agents have reported producers asking what to do supplement-wise for grazing livestock with the slow pasture growth this spring. A lot of this is related to the fact that we are roughly 100 growing degree days less this year than the same time frame a year ago. Combine this with the wet weather leading to muddy feeding conditions, producers were happy to see cows begin to pick grass. Low hay stocks also contributed to producers pulling hay away a bit prematurely. Cooler temperatures has resulted in slow pasture forage growth and cows are nipping it off faster than it is growing. This situation has led to several questions regarding supplementing grazing cattle under these conditions and I'll try to share a few things to consider.

No free lunch - Grazing energy expenditure based on research is significantly greater than the energy required to walk, stand, and other activities. A cow grazing an acre would expend more energy than simply walking that same distance. The energy to raise the head, prehend forage, chew and swallow are all energetic costs.

Low forage availability - The National Research Council (NRC) beef cattle nutrient recommendations publication has reviewed the scientific literature related to grazing energy expenditure. Models have been developed to account for energy expended during grazing in relation to forage dry matter availability (see previous Grazing News article [https://grazer.ca.uky.edu/content/when-start-feeding-hay](https://grazer.ca.uky.edu/content/when-start-feeding-hay)). When forage dry matter (DM) availability falls below 2,000 lb per acre or approximately less than 6 inches in height with 90% ground cover, dry matter intake may be reduced which will negatively impact performance. Maintaining pasture sward to be greater than 3-4 inches in height should ensure there is at least 1,000-1,200 lbs DM/acre pasture forage availability. At 1,000-1,200 lbs DM/acre, research indicates DM intakes will be about 90% of normal.

Providing Free-choice Supplements when pasture is limited – Offering free-choice supplements during low forage availability is a situation that in many instances can lead to digestive and metabolic disorders. When forages are limited, over consumption of free-choice supplements can occur. The name is important "supplement" not "replacement". In many free-choice supplement toxicity cases, it has almost always occurred when forage availability was limited. This same over-consumption can occur with liquids such as molasses and distillers condensed syrup. Use free-choice supplements when forage availability is not severely limited for best results.

Hay - Hay would be the preferred "replacement" to pasture forages. Even though the lower sugar content and other factors such as rot and mold will make it less palatable to grazing livestock, hay is the most logical substitute. Having access to higher quality hay will provide some replacement of pasture forages. Granted the intakes may be low as they seek pasture forage. Low hay intakes of 5-10 lbs of hay intake can replace 25-50 lbs of fresh forage intake. Enticing hay intake could be done by adding liquid molasses to bales while also boosting nutrient content slightly.

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Supplements - Limit-fed supplements can be used to provide nutrients to cattle grazing pastures that are short, but won't lower their forage DM intakes when forage is limited a great deal. Two intake regulation systems are involved, metabolic and gut fill. Gut fill will often be driving the cattle to graze even though nutritionally they may not need the nutrients. For instance a supplement that is mostly soyhulls, wheat middlings and some corn gluten feed would likely have about 78-80% TDN. Lush, lowly lignified pasture will contain about 65-70% TDN. The math suggests that for an energy exchange, 1 lb of supplement as mentioned would provide the energy of about 1.15 lb of pasture forage DM or lower forage DM needed by about 15%. As forage becomes more mature, lower in quality, the exchange becomes more significant. Consider mature pasture forage that is 58% TDN. It would take 1 lb of supplement would replace about 1.34 lbs of pasture DM. This is a bit simplified, but it should illustrate that the rumen fill sensors could still signal cattle to eat more even though pasture forage intake could be reduced 15-30% while still meeting nutrient needs with supplementation. On another note related to item 3 above is supplementation can provide energy that the cattle need due to the increased physical activity while attempting to fill the rumen with pasture forage. Early spring conditions with lactating cows and low pasture availability can lead to excessive Body Condition loss as the cows activity levels are high. Hilly terrain and steep terrain increases the energy expended.

BCS - Don't let spring calving cows lose more than 1 body condition score from calving to breeding IF they calved in a BCS of 5. If they calved at a condition less than 5, they should be maintained and not lose additional condition to ensure optimal breeding opportunity. Thin cows at calving that continue to decline in body condition are at a much higher risk to not rebreed.

Economics - Some of the supplements being mentioned by agents as a replacement for pasture forage are in a "form" of convenience. One pays for this convenience. For instance, a cube that may cost $300/ton that can be poured on the ground with minimal feed loss may be the feed of choice of some. But consider this, a soyhull:corn gluten mix may only cost $200/ton. That means one could effectively waste 1/3 of the feed on the ground, which is highly unlikely, and still break even. Be certain to do your homework on supplements and the nutrient content to purchase nutrients wisely. Some may contain adequate mineral that removing the free-choice mineral supplement will offset the higher feed cost. Supplements may contain higher levels of “roughage” products such as cottonseed hulls, peanut hulls, rice hulls and other low energy feedstuffs to prevent digestive upsets. Find out the nutrient content and suggested feeding rates and compare these to alternative nutrient dense feedstuffs.

As the temperatures increase pasture forages will rebound quickly. Adequate soil moisture will aid in pasture forage growth and this will be a short-lived challenge. However, these same basic principles can apply during forage dormancy induced by heat and low precipitation periods. As mentioned by one of our agents working with a client this spring, don't overlook the potential for consumption of toxic weeds when forage availability is limited. Happy forage managing this spring/summer.

Jeff Lehmkuhler, Extension Beef Cattle Specialist, University of Kentucky
Start Now to Prevent Anaplasmosis This Fall

*Anaplasma marginale* is an organism that lives in red blood cells and causes the only major “tick-borne” disease in the US affecting cattle production. Although ticks are important for this organism to survive year after year, transmission is by any transfer of infected red blood cells from infected to susceptible cattle. This includes biting insects (mosquitoes, horse flies, stable flies) and/or using blood contaminated instruments such as dehorners, ear taggers, castration tools, and implant guns. Probably the most common way it is transmitted is using the same needle on multiple animals when administering vaccines to the herd.

The disease usually affects adult cattle in the fall of the year with the majority of cases submitted to the UK Veterinary Diagnostic Lab (UKVDL) starting in late September and continuing through the first 1-2 weeks of November. This organism causes anemia in adult cattle which means there is a very low number of red blood cells in the bloodstream. Lack of red blood cells results in a lack of oxygen to the vital organs in the body.

Infected cattle will show signs of weakness, lagging behind, staggering, rapid breathing and sometimes foaming from the mouth. Affected cattle quit eating and usually there is rapid weight loss noticed by the owner. Cattle may become mean and aggressive due to lack of oxygen to the brain. Death can be rapid, especially with exercise, or cattle may be simply found dead with no symptoms. Typically, several adult animals in a herd will die within a 1-2 week period of time. Younger cattle, especially less than 6 months old, rarely exhibit signs of disease due to active production of new red blood cells (RBCs) in growing calves. Anaplasmosis in animals from 6 months to 2 years of age may be misdiagnosed as pneumonia because symptoms include fever and increased respiratory rate.

If an animal (regardless of age) becomes infected and survives, that animal will become a carrier for life. Once they become carriers, they are never sick from the disease again but serve as a reservoir for infection of other, naïve animals. Infected bulls that survive may become infertile for up to a year. Pregnant cows that survive almost always abort the calf they were carrying at the time of infection.

Treatment with tetracycline is essential if showing clinical signs of disease. No injectable antibiotic is formally approved for treatment so any form is “extra label” and must be done under veterinary direction. A single intramuscular injection of long acting oxytetracycline at 22 mg/kg of body weight (or 10 mg/lb BW IM) will often stop progression of clinical cases. Severely affected cattle may die due to stress associated with going through the chute. In an outbreak situation, it is recommended to treat all adult cattle in the herd with injectable oxytetracycline, then begin feeding chlortetracycline (CTC) at the high end of the control dose (2mg CTC/lb body weight/head/day) throughout the rest of the vector (fly) season.

So why start in spring to control anaplasmosis if cases of disease are in the fall of the year? Effective control begins in the spring by feeding chlortetracycline (CTC) throughout the vector (fly) season to the herd. Many producers find it easiest to offer CTC in free choice mineral rather than hand feeding CTC daily with Aureomycin®. However, with the advent of the Veterinary Feed Directive (VFD), what once was
a quick trip to the feed supply store has become a far more complicated process to get medicated mineral. In order to obtain CTC, a producer must have a written VFD from a licensed veterinarian to present to the feed store before purchase of the product. Complicated rules governing the use of “free choice” products have created confusion on how to legally prescribe and utilize them. FDA updated or “clarified” the VFD regulations in February 2018 in a document entitled: “Questions and Answers: FDA Approved Free-Choice Feeding Options for Anaplasmosis Control in Cattle.” (The complete document may be found at https://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/ucm589933.htm). FDA states that “once a veterinarian has determined that anaplasmosis infection exists within a herd, whether or not clinical signs are apparent yet, he/she may write a VFD to direct the use of CTC for controlling the progression of the disease in that herd.” FDA leaves how to make this determination to the discretion of the veterinarian. How long to use the product is also left to the veterinarian’s discretion. A VFD order can be issued for a maximum of 180 day duration of feeding; if needed for a longer period of time, a new VFD order must be written. On the actual VFD form for Chlortetracycline, the veterinarian can only choose the #5 option for a free choice product. The FDA has approved several proprietary (unpublished) formulations for the use of CTC in free-choice medicated feeds for anaplasmosis control. Proprietary formulations can only be manufactured at a licensed feed mill but the publicly available formulation may be manufactured at any feed mill. For example, the 8000g/ton preparation is an ADM product called “MoorMan’s Special Range Minerals AU 168XFE”. It is legal for free choice consumption, requires a VFD, and will control anaplasmosis when consumed consistently. The 6000g/ton formulation is considered a publicly available recipe for a free-choice medicated mineral but specifications must be followed exactly as stated in the regulation to be legal. If there is any deviation from the formula (except for an approved change of vitamin and trace mineral premix), then it cannot be fed free choice. An example of this formulation is Burkmann CTC 6000 FC Mineral; again this is legal as a free choice mineral, requires a VFD, and effective if consumed consistently. There are many other products commercially available; consult a nutritionist or veterinarian for further recommendations.

Beef and Non-lactating Dairy Cattle: As an aid in control of active infection of anaplasmosis caused by Anaplasma marginale susceptible to chlortetracycline when delivered in a free-choice feed.

Drug Concentration:

- 8000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day)  
  [Must use a FDA-approved proprietary formulation.]
- 6000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day)  
  [Must use a FDA-approved proprietary formulation or formulation in 21 CFR 558.128(e)(6).]
- 5000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day)  
  [Must use a FDA-approved proprietary formulation.]
- 700 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day)  
  [Must use a FDA-approved proprietary formulation.]

Duration of Feeding: ____________ days

Remember, oral CTC is worthless if the animals are not consuming sufficient amounts of medicated feed so producers should monitor intakes. Even when feeding CTC throughout the vector season, some individual animals may become infected and die if they do not enough CTC. Extra-label use of feed additives is illegal and strictly prohibited by producers, veterinarians or nutritionists.
Another method of control is through vaccination. Kentucky is among the list of states approved by the USDA for sale of the anaplasmosis vaccine marketed by University Products LLC of Baton Rouge, La. The vaccine has been used in cows in all stages of pregnancy with no problems being reported. The vaccine recommendations include a 2 dose regimen given 4 weeks apart with annual revaccination required. The primary or initial dose should be given to all bred heifers and young bulls. Bear in mind the vaccine does not prevent infection, it controls clinical disease. In other words, vaccinated animals may become infected and become carriers but will not get sick and/or die. Information may be found at: http://www.anaplasmosis.com/home.html

The UKVDL and the Breathitt Lab recommend the Anaplasmosis cELISA test on serum to detect antibodies indicating infection and carrier status. Blood should be collected in serum (red top) tubes and serum removed by spinning the collection tube down and transferring the serum to a new labeled tube. Transport specimens to the lab as soon as possible after collection (overnight ship with cold packs). It is also recommended that a blood sample (purple top tube) be submitted for a CBC with differential in clinical cases (when the animal is sick) in order to assess the degree of anemia and regeneration and possible identification of the organism in the red cells. Please visit the UKVDL web site for additional information at http://vl.uky.edu or the Breathitt Center web site at https://breathitt.murraystate.edu/feeschedule/. Always consult your veterinarian for the best program for your herd.

Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL), University of Kentucky

May WASDE Suggests Better Prices for 2018-19

The May WASDE provides the initial supply and use projections for new-crop corn, soybeans, and wheat. At this point, USDA relies on farmer surveys and trend yields to project production. The initial forecast does tell a story of how the grains and oilseed markets may have improved prices from last year.

A combination of reduced area and trend yields could reduce the size of the U.S. corn crop by 564 million bushels from last year. The corn market could also benefit from reduced carry-in from last year, which would also reduce the corn supply in 2018-19. USDA is projecting corn use at 14.6 billion bushels, which is slightly less than the use in 2017-18. The bottom-line for corn is that ending stocks could be trimmed by 500 million bushels, and that has the potential to support higher corn prices. USDA is projecting a U.S. farm price of $3.80 per bushel, which would be a $0.40/bushel increase from last year if realized (Table 1).

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<tr>
<th>Table 1. Consolidated Corn, Soybean and Wheat Balance Sheets for the 2018-19 Marketing-Year.</th>
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<tr>
<td>Change from 2017-18</td>
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<tr>
<td><strong>Beginning Stocks</strong></td>
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<td><strong>Production</strong></td>
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<td><strong>Imports</strong></td>
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<td><strong>Total Supply</strong></td>
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<td><strong>Total Use</strong></td>
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<td><strong>Ending Stocks</strong></td>
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<td><strong>Days of Stocks</strong></td>
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<td><strong>U.S. Average Farm Price</strong></td>
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Source: May 2018 WASDE - USDA WAOB.

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USDA provides a slightly different story for soybeans. The 2018 soybean crop is projected to be 112 million bushels smaller than last year due to the assumption of reduced harvested area and trend yields. The smaller soybean crop would reduce the effect of a large carry-in of 530 million bushels. A key assumption in soybeans is that exports will increase by 225 million bushels from 2017-18. The assumption of strong use is a driving factor in the projected reduction in stocks to 415 million bushels. If realized, the U.S. farm price for soybeans could be $10 per bushel.

USDA is also projecting higher wheat prices from 2017-18. The reduced carry-in from 2017 coupled with similar production in 2018 will continue to whittle away at wheat stocks. The key assumptions in wheat use are in feed use, which may be too high. USDA was cautious in projected exports with only a 15 million bushel increase from the current marketing year. If realized, wheat has the potential to draw stocks below a 50% stocks-to-use. The U.S. wheat farm price is projected at $5 per bushel (Table 1).

These initial projections will be fine-tuned throughout the summer. As always, weather impacts on yield potential could provide pricing opportunities for the three crops and managers should be prepared to price crops on market rallies. The current story from USDA shows how a year with more normal yields could allow stocks to decline and provide opportunities for higher prices.

Source: Todd Davis, Asst. Extension Professor, Grain Marketing, University of Kentucky

**Mark your calendars now!**

- **Master Grazer Field Day**
  July 10, 2018
  6:00 pm
  Shady Meadow Farm
  3362 Dobbs Ln.,
  California, KY  41007

- **Eden Shale Field Day**
  July 11, 2018
  4:00 pm
  Eden Shale Farm, 245 Eden Shale Road, Owenton, KY  40359

- **Northern Kentucky Horse Network All Breeds Horse Show**
  July 28, 2018
  Alexandria Fairgrounds

- **Boone County Fair**
  August 6-11, 2018
  Boone County Fairgrounds

Michelle Simon,
Boone County Extension Agent for Agriculture Education

Rex McBride,
Boone County Extension Agent for Natural Resources & Environmental Education

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**Program includes:**
- Weed identification & Control
- Options for Grass/Legume Pastures
- Managing KY31 Endophyte Tall Fescue Pastures
- Endophyte Tall Fescue Sample Results of Shady Meadows Farm
- Developing & Managing a Rotational Grazing System
- Fencing, Water, Fertility & Grazing Management

**Guest Speakers:**
- Dr. J.D. Green, UK Extension Weed Specialist
- Dr. Jimmy Henning, UK Extension Forage Specialist

**Register by July 9th**
Please Call
Campbell County Extension Office
859-572-2600
or online
www.campbell.ca.uky.edu

**Looking Ahead...**

**Master Grazer Field Day**
Management Strategies for Forage Production

**July 10, 2018 • 6:00PM**

Shady Meadows Farm
Gene & Nancy Dobbs, 3362 Dobbs Ln., California, KY  41007
Rib-Eye Steak Dinner @ 6pm