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Forage News

Keeping Forage-Livestock Producers in Kentucky Informed

Dr. Ray Smith and Krista Lea, editors

July 2020

Featured Forage Publication: Alfalfa High-Quality Hay for Horses

Alfalfa is a widely adapted perennial forage legume and is the most important forage legume grown in the United States. It has the highest yield potential and feeding value of all adapted forage legumes. It produces more protein per acre than any other crop. Although predominantly fed to horses as hay, alfalfa can also be fed chopped (as chaff), cubed, or pelleted. Alfalfa and/or alfalfa grass hay is palatable and is often a hay of preference for horses. Quality alfalfa hay has high protein, energy, vitamins, and minerals. It is highly digestible and usually contains more digestible nutrients than grass hays, such as timothy and orchardgrass. Alfalfa is also a popular horse hay since it is widely available. It is the fourth most widely grown crop in the United States and is the only forage species produced and sold in every state.

This publication describes the factors affecting the nutritional value of alfalfa hay as well as the horse's digestive system and nutritional needs. It also has information on purchasing, storing, and feeding alfalfa hay; and uses science to discuss myths and facts of feeding horses.

~ Authors include UK's Laurie Lawrence and Garry Lacefield and can be downloaded at www.alfalfa.org.



Complete Pasture Renovation

The easiest solution is often not the best solution. I know of many producers who regularly overseed pastures and apply herbicides, but their pastures are still not productive. If a pasture has major issues like fescue toxicity or major weed issues, then you can be wasting your money by trying short term solutions that are not working. The best long term solution can be complete pasture renovation. Below are the basic steps that have proven successful on many farms throughout the southeast.

- Lime and fertilize to soil test recommendations.
- Make sure that toxic fescue has not gone to seed this summer.
- Stop grazing in early July and allow five to six inches of regrowth.

- Spray with glyphosate 4-6 weeks before planting – mid to late-July.
- Allow weeds and toxic tall fescue to regrow.
- Re-spray glyphosate before planting – late August to early September.
- Plant early to mid-September with novel tall fescue, orchardgrass or other perennial grass species.
- Seed with a no-till drill at 20 lbs/acre and no deeper than ¼ to ½ inches deep.
- To achieve better ground cover, set drill at 10 lbs/A, seed twice with the 2nd pass perpendicular to 1st.
- Apply a low rate of N at seeding or in October to enhance stand establishment (40-50 lbs/N/acre).
- For broadleaf weeds, wait until new grass seedlings reach the 4 leaf stage (4-6") before spraying.
- Allow good sod development before grazing. Be patient and wait for the stand to develop.
- If you must graze, wait until plants are 8" tall and flash graze (a large number of animals for a day).
- Ideally, manage with light grazing or a hay harvest next spring. Overgrazing can ruin a new stand.
- To incorporate clover, frost seed the following February after weed issues have been controlled.

Quote of Month "We Never Get Too Old To Learn"

It often occurs that when a person gets older they become set in their ways and less accepting of knowledge. This will handicap the person in dealing with new challenges and utilizing new information, tools and research findings in their life. Some simply give up and live in the past, reliving the good old days. Although

Forage Timely Tips: July

- ✓ Apply 40-60 lb N/A to stimulate summer annual regrowth.
- ✓ Clip pastures late June/early July as needed to maintain vegetative growth and to reduce weed seeds, but don't clip lower than 4".
- ✓ Identify fescue pastures for stockpiling. Choose pastures that are well drained, have a strong sod, and have not been overgrazed.
- ✓ Soil test pastures to determine fertility needs.
- ✓ Using UK variety trial results, select varieties to plant in the fall and order seed.
- ✓ Use a designated sacrifice lot to feed livestock hay and supplements as needed if drought sets in and no forage is available for grazing.

sometimes it can be painful to learn new ways, it will stimulate a persons thinking process and make life more interesting. Order your copy of Forage-Livestock Quote and Concepts, vol. 2, today at <https://forages.ca.uky.edu/content/forage-books>.

Managing Pastures During Dry Times

It may seem ironic to be talking about drought when we have such a wet winter and spring, but parts of KY were dry in late May, early June and they may be dry again after this bout of wet weather. It's important to remember that drought is a part of Kentucky's agricultural landscape. Long-term weather records indicate that we can expect a moderate drought once every five years and a real doozy once every decade or so.

Developing and implementing a drought management plan can significantly reduce the economic and emotional impact of drought on your operation. The time to develop this plan is before it gets dry. The strategies that are used will depend on the resources you have on your farm and your long-term goals. Drought management strategies include:

- Implement rotational grazing.
- Incorporate deep-rooted legumes into pastures.
- Incorporate warm-season perennial grasses into grazing system.
- Incorporate warm-season annual grasses into grazing system.
- Feed hay.
- Utilize commodities to extend pastures.
- Stock for five-year drought.
- Wean or sell calves early.
- Sell cows.

~ Chris Teutsch, excerpt from June Cow Country News.

Is rained on hay any good?

A lot of hay has been cut in recent weeks. The weather was good, but not perfect, as Kentucky weather is notoriously unpredictable. If you got some rain during haymaking, you are not alone. What happens to quality for rained on hay?

The majority of the damage from untimely rains is the loss of soluble nutrients from the hay (the sugars). Even before rain damage, we lose some sugar during plant respiration, that occurs from the time forage is cut until it reaches about 50% moisture content. Rainfall will extend the length of time that the hay is wetter than 50% moisture, leading to more loss of sugars from respiration.

Rainfall also leaches the soluble sugars from hay. The amount of leaching depends on the forage type, the hay moisture content when it rains, the concentration of soluble sugars, and the number, amount and intensity of rainfall event(s). Leaf shatter can also be significant in legumes, especially on nearly dry forage.

Hay that has been rained on during curing will also have greater levels of dirt as well as higher numbers of microorganisms that will cause molding in the bale. Finally, the extra tedding and raking that may be needed to cure the crop can lead to further losses, especially in legume hay.

Research done by Dr. Mike Collins, retired UK forage scientist, gives us some insight into the question of how much quality is lost due to rain. Dr. Collins measured the digestibility of alfalfa and red clover forage which experienced rain at different times after cutting (Table 1). In 1980, one inch of rain that fell soon after clipping had little negative impact on forage digestibility (as measured by IVDMD - a laboratory estimate of the extent of digestion of a forage in the rumen). In a second study, 1.6 inches of rain during curing (after some drying had occurred) caused significant losses in digestibility. Getting 2.4 more inches of rain on almost dry hay caused further damage, truly making some of the forage of little value (for example, 36% digestibility in rain-damaged late-bloom alfalfa). With severely rain damaged hay, it may better to leave it on the field, chop it up with a rotary mower to speed decomposition and minimize shading of the next crop.

Similar research at the University of Arkansas found dry matter losses were below 2% for second cutting orchardgrass with up to 3 inches of simulated rainfall when the forage was 67.4% moisture (moisture level just after cutting). Dry matter losses quadrupled to 8% when the same amount of water fell on forage at 15.3% moisture (moisture level desired for making dry hay).

In the end, deciding what to do with rain-damaged hay is a judgment call. Many factors come into play such as when the rainfall occurs during curing, the amount and intensity, and how dry the crop was when rained on. I find it helpful to know that rain immediately after cutting can do minimal damage.

~Jimmy Henning, excerpt from June 18 Farmer's Pride.

Upcoming Events (see website for details)

AUG 6—W. KY KFGC Field Day—Calloway Co.

SEPT 8-9—KY Grazing School, Versailles, KY

OCT 27,28,29—KY Grazing Conferences, Winchester, Elizabethtown and Western KY

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Bonus content on pages 3 and 4.

KFGC Members receive 25% discount for On-Pasture

On Pasture is an online magazine for graziers. Each week we publish 5 to 7 articles, translating research and experience into practices farmers and ranchers can use right away. As a subscriber

		IVDMD (% DM)				
		1980		1981		
	Maturity	No Rain	1.0 in after clipping	No Rain	1.6 in during curing	2.4 in on dry hay
Alfalfa	Bud	67.6	65.2	72.7	57.2	49.3
	Late Bloom	60.1	58.8	62.3	39.2	36.0
Red Clover	Late Bud	74.6	72.1	68.3	47.2	43.4
	Late Bloom	67.1	62.6	62.1	48.6	43.7

see blue.

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Think about Horse Hay Needs Now

Whether you own a horse or are selling to horse owners this recent press article will be of interest to you.

In the midst of a bountiful first cutting of hay, a University of Kentucky equine specialist reminds horse owners to start thinking about how much hay they need in the future. "The photos I'm seeing look great," said Bob Coleman, extension equine specialist with the UK College of Agriculture, Food and Environment. "There is some good-looking hay out there, but growing conditions and weather could change things here at home or across the country and that will move hay either across the state, to a neighboring state or wherever the need may be at the time."

Feeding horses is expensive. Coleman encourages producers to plan for how much hay they may need this winter, while growing conditions are ideal. "Do the math and figure out how much your horses need," Coleman said. "When planning your hay budget, consider your horse's weight and plan for feeding 2% of their weight per day in hay." For example, a 1,200-pound horse will need 24 pounds of hay per day.

"How many days do you think you will need to feed at that rate?" Coleman asked. "Will you have pasture to use, thereby reducing your hay needs, or will you have horses in the barn that get hay each day?" For example, if owners will need to feed for 180 days, then they will need to multiply 24 pounds by 180 to get the total amount of hay they need. The more horses they are feeding, the more hay they will need.

Another thing to consider is how owners plan to feed hay. Using a feeder may help reduce wasted feed. "Feeders can reduce waste, but they won't eliminate it," Coleman said. "Make sure you figure in an amount for wasted, perhaps about 10%. Not using a feeder can cause a hay waste of up to 50%." Storage is an important consideration. Store hay in a covered, well-drained area to reduce waste.

"Thinking back to our example of a 1,200-pound horse and figuring in all potential waste considerations, that horse will need approximately 2.6 tons of hay or 104 50-pound bales of hay in a year," he said.

Many owners have more than one horse, with different weights. For those scenarios, Coleman suggests either doing individual calculations for each horse or using an average body weight for all horses.

Equine managers should have a nutrient analysis done on their hay. That will help horse owners know whether or not they need to supplement the forage to meet their horses' needs. The Kentucky Department of Agriculture offers a Forage Testing Program. Producers can find more information about sample submission, which has recently changed, and program costs at <https://www.kyagr.com/marketing/forage-program.html>.

UK Cooperative Extension Service has an office in each Kentucky county, with agents who can help with equine-related questions and much more. To find a local office, visit the directory online at <http://extension.ca.uky.edu/county>.

~ Aimee Nelson, UK Ag Communications

Potato Leafhopper Management in Alfalfa

Potato leafhopper, a small bright green insect which migrates annually from the gulf coast to Kentucky on wind currents (Figure 1), can cause significant injury to alfalfa if left unmanaged. It does not normally impact the first cutting of established alfalfa stands. Infestations in later cuttings can stunt growth and reduce yields. The most common symptom of leafhopper damage is yellowing of the leaves, commonly referred to as "hopper burn" (Figure 1). Although nutrient deficiencies can also cause yellowing of the leaves, damage from leafhoppers can be distinguished by a characteristic inverted yellow "V" at leaf tip (Figure 1).

Scouting and Economic Thresholds

Determining leafhopper populations requires the use of a sweep net with a 16-inch opening and a 3-foot handle. Sampling is accomplished by quickly walking through the stand as 10 sweeps are collected in a back and forth motion that grazes the top of the alfalfa canopy. Adult and nymph leafhoppers should be immediately counted. Sampling should be conducted in three to five areas of the field and then averaged. Economic thresholds for the application of insecticides can be found in Table 1. In general, if the number of leafhoppers collected in 10 sweeps equals the height of the alfalfa plant in inches, the economic threshold has been reached. For stands that are under high levels of stress, the economic threshold levels are lower. Conversely, stands that are vigorously growing and under lower levels of stress possess higher economic thresholds. If potato leafhopper resistant cultivars were used, economic thresholds are three times higher than those outlined in Table 1. If the alfalfa stand is 7 to 10 days from harvest, treatment is NOT recommended. Following harvest, regrowth should be closely monitored for reinfestation. Insecticide recommendations can be found in Table 2. *For a more information on the management of insects in alfalfa, contact your local extension office or visit <https://entomology.ca.uky.edu/fieldcrop>.* Potato Leafhoppers (<https://entomology.ca.uky.edu/ef115>) ~ Chris Teutsch and Raul Villanueva

Table 1. Economic thresholds for the control of potato leafhopper in non-potato leafhopper resistant alfalfa.			
Alfalfa Height	Alfalfa Stress Level		
	High	Medium	Low
inches	number of potato leafhoppers per 10 sweeps		
6	3	6	9
8	4	8	12
10	5	10	15
12	6	12	18
14	7	14	21
16	8	16	24
18	9	18	27
20+	10	20	30

R.B. Hammond, A. Michel, J.B. Eisley, and M. Sulc. 2014. *Potato Leafhopper on Alfalfa*. ENT-133, Ohio State University Extension, Columbus.

Table 2. Insecticide recommendations for the control of potato leafhopper in alfalfa. Always follow label recommendations.	
Potato leafhopper Insecticides	Harvest or Graze Interval (days) and REI (hours)
Carbaryl-Sevin 80 S, etc. Sevin 4F, etc.	May temporarily bleach tender foliage. 7 / (12 hrs)
Methomyl-Lannate SP	7 / (48 hrs)
Chlorpyrifos-Lorsban 4E, Chlorpyrifos 4E	Some temporary yellowing may occur. 1 pt - 14 d / (24); more than 1 pt - 21d
Dimethoate-Dimethoate 400, Dimethoate 2.67, Dimate 4 EC,	10 / (2 days)
Phosmet-Imidan 70 W	7 / (5 days)
B-Cyfluthrin-Baythroid XL	7/ (12 hrs)
g-Cyhalothrin-Bolton, Declare, Proaxis 0.5	Apply only to planted pure stands. 1 day forage, 7
I-Cyhalothrin-Warrior II	1 d -forage, 7d – hay / (24 hrs)
Z-Cypermethrin-Mustang Maxx	3 / (12 hrs)
Permethrin-Ambush, Pounce 25 WP, etc.	Do not apply to intentionally mixed stands of grasses or legumes (more than 4 fl oz/a - 14 d) / (12 hrs)
Pyrethrins-PyGanic	0 / (12 hrs)
Idoxcarb-Steward 1.25 SC	7 / (12 hrs)
Azadirachtin (26)-Aza-Direct, etc.	0 days (4 hrs)
Chlorpyrifos + I-cyhalothrin-Cobalt EC	7 / (24 hrs)
Z-cypermethrin + chlorpyrifos-Stallion	7/ (24 hrs)
I-Cyhalpthrin + Chlorantraniliprole - Besiege	1-forage, 7-hay / (24 hrs)

Adapted from L. Townsend. 2017. *INSECTICIDE RECOMMENDATIONS FOR ALFALFA, CLOVER, AND PASTURES – 2017*. ENT-17, University of Kentucky Extension, Lexington. (<http://pest.ca.uky.edu/EXT/Recs/ENT17-Alfalfa.pdf>)



Adult potato leafhopper (left), characteristic leaf burn (middle), and inverted yellow “V” damage at leaf tip (right).

