



# Forage News

## Keeping Forage-Livestock Producers in Kentucky Informed

Dr. Ray Smith and Krista Lea, editors

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### Pub of the Month: Forage Variety Trials for 2022

The 2022 UK Forage Variety Trials reports are now available on the Forages Extension website. Reports cover species such as tall fescue, orchardgrass, alfalfa, red and white clover, summer annual grasses and more and include yield, seedling vigor and persistence. And for an overview of the best varieties from 20 years of UK testing, refer to the 2022 Long-Term Summary of Kentucky Forage Variety Trials (PR-826) at this webpage. [https://forages.ca.uky.edu/variety\\_trials](https://forages.ca.uky.edu/variety_trials)

### KY Alfalfa and Stored Forage Conference

If you produce hay for sale or for your own livestock, make plans to attend the KY Alfalfa and Stored Forage Conference in Cave City, KY Feb. 21, 2022. Simply go to the Forage Website under events to register or call 513-470-8171. The theme of this year's conference is **Hay Production, Marketing and Mechanization**. The topics and speakers include:

- National Producer and Consumer Survey: Increasing Alfalfa Hay Sales to Horse Owners-Krista Lea, UK
- Hay Production in the Deep South: Bermudagrass and Alfalfa-A Perfect Combination! – Dr. Jennifer Tucker, University of Georgia
- Options for Hay Mechanization: Producer Perspective-Dennis Wright
- Hay Mechanization: Industry Overview – Noah Pendry, CNH Industrial (New Holland)
- Fall Armyworm Research -Dr. Raul Villanueva, UK
- Attacking the Yield Plateau: Assessing the Nutrient Status of Kentucky Alfalfa Stands – Will Fleming, UK
- One Big Idea that has Helped Improve My Haying Operation-Winners of the KDA Hay Contest
- Update on Options for managing thinning alfalfa stands-Dr. Jimmy Henning, UK

### \*\*\*New Forage Publication\*\*\*

#### Frost Seeding Clover: A Recipe for Success

Legumes are an essential part of a strong and healthy grassland ecosystems. They form a symbiotic relationship with Rhizobium bacteria in which the bacteria fix nitrogen from the air into a plant available form and share it with the legume. Clover also increases forage quality and quantity and helps to manage tall fescue toxicosis. In the past, the positive impact of clover on tall fescue toxicosis has always been thought to simply be a dilution effect, but [new research from the USDA's Forage Animal Production Unit in Lexington](#) shows that compounds found in red clover can reverse vasoconstriction that is caused by the ergot alkaloids in

### Forage Timely Tips: January

- ✓ Continue strip-grazing of stockpiled tall fescue for maximum utilization.
- ✓ Remove animals from very wet pastures to limit pugging and soil compaction.
- ✓ Feed your best hay to animals with highest nutritional needs.
- ✓ Supplement poor quality hay as indicated by forage testing.
- ✓ Feed hay in areas where mud is less of a problem.
- ✓ Feed hay in poor pastures to increase soil fertility and enhance organic matter.
- ✓ Consider "bale grazing" - set out hay when the ground is dry or frozen. Use temporary fencing to allocate bales as needed.
- ✓ Use variety trial results to select seed for spring renovation.
- ✓ Prepare for pasture renovation by purchasing seeds, inoculant, etc. and getting equipment ready.

toxic tall fescue. The primary compound found in red clover is a vasodilator called Biochanin A.

Clover stands in pastures thin overtime due to various factors and require reseeding every three to four years. There are several techniques for reintroducing clover into pastures including no-till seeding, minimum tillage, and frost seeding. Of these techniques, frost seeding requires the least amount of equipment and is the simplest to implement. Frost seeding is accomplished by broadcasting clover seed onto existing pastures or hayfields mid to late winter and allowing the freezing and thawing cycles to incorporate the seed into the soil. This method works best with red and white clover and annual lespedeza. It is NOT recommended for seeding grasses or alfalfa. This publication covers the important factors for successful frost seeding. Find this and related publications at the UK Forage Website under the "establishment" tab. <https://forages.ca.uky.edu/establishment>

#### Frost Seeding at a Glance (from the new pub.)

- Legumes are an essential part of sustainable grassland ecosystems.
- Overseeding may be required to maintain and thicken stands.
- Frost seeding is the simplest method for reintroducing clover back into pastures.

- Control broadleaf weeds fall prior to frost seeding.
- Soil test and apply any needed lime or fertilizer before frost seeding.
- Suppress the existing sod and reduce residue with hard grazing in the fall and winter.
- Choose well adapted varieties of red and white clover using the UK forage variety testing data.
- Calibrate seeder and check spread pattern.
- Broadcast 6-8 lb/A of red clover and 1-2 lb/A of white clover that has been inoculated in mid-February (no later than early March).
- Control competition from existing grasses by grazing pastures in short intervals until clover seedlings become tall enough to be grazed off.
- Put pasture back into your regular rotation once seedlings reach a height of 6-8 inches.

#### Follow these tips for Grass-finished beef

Growth in the grass-finished beef sector has grown exponentially in the past decade. The desire for local foods by more consumers and the pandemic added a giant nudge to the grass-finished growth curve.

Some beef producers have experienced resounding success and profitability in the grass-finished beef space. Others have not or are still in an adjustment period. To be sure, raising grass-finished beef is not the same as taking care of a cow-calf herd. Maintenance isn't good enough — you need growth, and fast.

Gary Bates, the director of the University of Tennessee's Beef and Forage Center, offers three important tips for farmers who have or want to develop a grass-finished beef enterprise. They are:

1. Minimize the use of Kentucky 31 (KY-31) tall fescue. The endophyte in KY-31 tall fescue produces alkaloids that negatively affect grazing cattle, including reduced weight gain in growing calves.

"Research has shown that 500- to 600-pound steers only gain 1 pound per day on infected tall fescue compared to 2 pounds per day when on orchardgrass or nontoxic tall fescue," Bates notes. "This is a dramatic difference if you are trying to finish cattle on pasture."

Bates says that one of the first steps to improve cattle weight gain is to provide a nontoxic forage species for growing cattle. The list of alternatives to KY-31 includes orchardgrass, annual ryegrass, wheat, or novel endophyte tall fescue species.

2. Maintain red and white clover in every grazing pasture. Adding legumes to grass pastures will enhance calf weight gains. Legumes will boost the protein and energy content of a pasture, which will result in improved performance. Bates cites research showing that adding clovers can increase the weight gain by 0.25 to 0.5 pounds per day. He suggests seeding 2 pounds of white clover and 4 pounds of red clover per acre in late winter or early spring.

3. Provide plenty of available forage. "Grazing cattle have a remarkable ability to select a high-quality diet," Bates asserts. "If there is enough forage available in a pasture, an animal might consume a diet that is several percentage units higher in protein and energy than the average of what is available."

Leaves have higher energy and protein than stems, and because grazing animals prefer the leaves of grasses and legumes, letting the animals have selectivity will result in a higher quality diet and better weight gain.

"This means that you shouldn't force animals to graze all of the forage in a pasture, but you should let them graze the high-quality portion of the plants, then move them to another field where more forage is available," Bates says. "You can let cows come in and clean up the field that has been picked over. This principle holds true regardless of the species you are grazing," he adds.

Producing high-quality beef on pasture requires different forage strategies than that for the cow herd. At the top of the list is to minimize the use of KY-31, utilize legumes in all pastures, and don't overgraze or overstock a pasture to ensure plenty of available forage, which allows the animals to select a high-quality diet. ~ Mike Rankin, Hay and Forage Grower. Go to [hayandforage.com/](http://hayandforage.com/) for more articles or to receive your free copy.



#### Creative Hay Mixture Yields Winning Results

As a horseman specializing in challenging horses, Reed Edwards is used to coming up with creative solutions. It is no surprise he applied the same approach to forages.

"I'm used to doing oddball stuff and I'm somewhat adventurous," says the Laurens, South Carolina, horseman and hay producer. His choice of an alfalfa and novel endophyte fescue mix was based on more than a whim, however. "I did my research and thought I could get it to work. It has done nicely."

That's an understatement. A hay sample from the 10-acre field won its category, (mixed/annual grass/other hay), in the 2022 Southeastern Hay Contest, coming in with a Relative Forage Quality (RFQ) of 243, 25% crude protein and 70% TDN. (cont. page 3)

#### Upcoming Events (see Forage website

for details and to register, click on EVENTS)

Jan. 8-10—AFGC Conference, Winston-Salem, NC

Jan. 25—Horse/Tall Fescue Workshop, Lexington

Feb. 6—Pasture Please Equine Conf., Lexington

February 21 —KY Alfalfa and Stored Forage Conf. Cave City, KY

February 20-21—Heart of America Grazing Conf. Ferdinand, IN

April 11-KY Fencing School, Allen Co.

April 13-KY Fencing School, Madison Co.

April 25-26-KY Grazing School, Princeton

May 14-19, 2023—International Grassland Congress, Covington, KY

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see blue.

Edwards knew he wanted a grass-legume mix and he had experience with leafy forages. His lespedeza hay is in high demand with sheep and goat producers. He also knew he didn't want to no till alfalfa into a bermudagrass sod. Although it has worked for other growers, in 2016 he tried the combination and says, "The alfalfa was shading out the bermuda and it was too cool for the bermuda to produce significantly." He adds, "I don't do bermuda well. The fertility requirements are high, it is susceptible to stem maggots and there is a lot of competition from other growers with bermudagrass hay."

However, he says, "I had developed a liking to having grass in alfalfa because of the curing. It adds a little bit of spring and lets the air flow through." University of Georgia state forage Extension specialist Lisa Baxter agrees. "The grass and legumes lay differently in the swath or windrow and prop each other up. You get a fluffier windrow and there is more air flow. It helps it dry down."

Edwards had experimented with timothy and prairie brome in an alfalfa field, but says, "Timothy is an annual in this area. One cutting and it was done. Prairie brome was a reseeding annual, kind of like ryegrass and I could get two cuttings from it. I wanted a perennial, though, rather than to guess and hope it reseeds. Tall fescue is the most adapted cool season perennial in this area and by that time, I had put fescue in with alfalfa. I had a couple of years of grazing from it and liked what I saw with palatability and performance."

Next, Edwards put his analytical mind to work in choosing varieties. With alfalfa, it is Bulldog 505, developed at the University of Georgia. "There are very few varieties with a 5 winter-dormancy. There are either cooler season varieties or they're developed for Arizona or Florida." He also says, "It was developed very close by, 80 miles, and developed under grazing pressure. I really liked it and wanted a grazing tolerant variety. I like to have the option to graze, both to feed my livestock and as a management tool."

Estancia Tall Fescue, produced by Mountain View Seeds, was his choice for fescue. "It has very good palatability and has a reputation among the novel endophyte varieties as persistent." The patented novel endophyte in Estancia is ArkShield. Every lot sold is tested for viability and the presence of toxic alkaloids according to standards set by the Alliance for Grassland Renewal. The endophyte is safe and aids in the persistence of the grass. Additional information on novel endophytes is available at [grasslandrenewal.org](http://grasslandrenewal.org)

When Edwards got ready to plant, there was no last-minute dash to apply fertilizer. He takes a soil sample at planting, and compliments of litter from area broiler houses and careful management, the organic matter was 4.7 and the pH was 6.9. Four years after planting, the potash, phosphorus and calcium are still high and the magnesium is listed as sufficient. The high organic matter is a figure Edwards is particularly happy to see. "A percentage point of organic matter holds a half an inch of rain. In the middle of a drought, a half an inch will save you." The only other pre-planting preparation he did was a two-quart spray per acre of glyphosate in mid-September, before planting in mid-October 2018. He had disced and smoothed the field in 2016, before sprigging Bermudagrass, which had almost disappeared.

Next, he mixed the alfalfa and fescue seed together in a 2:1 ratio (20 lbs. of alfalfa and 10 lbs. of fescue per acre), then planted using the small seed box of a no till drill. "I planted it as close to a quarter inch of depth as I could," he notes. "It rained nicely after, and I got a very nice stand. The alfalfa came up first. I had to look for the grass with the first cutting. The fescue comes on more as time goes on which is interesting, since it is a cool season forage, too."

Pest control started two to three weeks after emergence with a spray for mole crickets. "They will wreck-havoc on newly emerged alfalfa plantings. One of my big dislikes with alfalfa is how much I have to spray," he comments. "I'm spoiled. I've had lespedeza since 2007 and never used an insecticide." Each year, in mid-March he sprays for alfalfa weevils, then after he cuts hay in July, August and September he sprays for leaf hoppers. Those sprays also take care of army worms. In the spring after planting, he also sprayed with Prowl H20 (pendimethalin) for weed control.

He tries to hold off on the first hay cutting until the first of May. "It is recommended you let alfalfa go a little farther in bloom for the first cutting but it likes to be ready in mid-April. Most of the time I graze it first." He then stays on a monthly schedule, unless drought or deer damage interferes with growth, then he mows if needed. He tries to cut when alfalfa is 24" tall and fescue is 18", then in late summer he'll cut when fescue is 10 to 12" tall.

He says the fescue needs to rest in the summer when it is hot. "With cool season bunch grasses the regrowth is in the crown. The key is high skirts on the mower-conditioner. The crown of fescue is 5" tall and the mower is skating right over it. That leaves the growing point intact." He says alfalfa likes the higher cutting height as well. "If you leave a little more leaf on the plant it grows back faster."

As for the award-winning quality of the mix, that's no accident. "We got a nice early cutting time when it was just beginning to bloom. The plants were in their prime." That still leaves the challenge of retaining the nutritious leaves of the alfalfa plant. "They are easy to dry and easy to lose. I use humidity to soften the leaves so I can retain them." While he occasionally uses a humidity meter, now that he has experience with the forages he relies more on another of his horsemanship skills, feel, to know when to bale. "I bale about the time the sun goes down, when the humidity is up to around 75% and the moisture is around 16%. I usually come in very close."

The first cutting usually yields around 500 lbs. an acre, or 50 70 lb. square bales. The second cutting is around 40 to 45 bales an acre and the third around 35 bales an acre, then drops to 20 to 25 bales an acre in the fall. "After the first of October it is really hard to dry it because of the shorter days, then I graze it sporadically for three weeks."

Even though alfalfa is a short-lived perennial, Edwards got 4.5 years out of one of his fields. He's looking for more with this one. With a combination of fact-based management and feel, he says, "One of my friends says I talk about my hay like her artist friends talk about their art. Some say I have it down to a science. Others say it is an art. At this point I think I see the art side more." With his mixture of alfalfa and novel endophyte fescue, make that fine art. Read the full article at <https://grasslandrenewal.org/2022/12/15/creative-mix-yields-winning-results/>. ~ Becky Mills