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Forage News [2021-02]

Department of Plant and Soil Sciences, University of Kentucky

Forage News

Keeping Forage-Livestock Producers in Kentucky Informed
Dr. Ray Smith and Krista Lea, editors
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Kentucky Alfalfa Conference Goes Virtual in 2021

Like many events, the Kentucky Alfalfa Conference has moved to an online only format for 2021. Although online, the program will be high quality as always and will provide ample time for discussion and questions. Presentations will be spread over the evenings of March 2,3,4. Topics and speakers include:

- Measuring forage quality: Sampling and Interpretation-Chris Teutsch, UK Grain and Forage Center of Excellence
- Using forage quality to market hay-Tom Keene, University of Kentucky
- What does past research tell us about drying rate in alfalfa?-Jordyn Bush, University of Kentucky
- Adjusting hay equipment to minimize field losses-New Holland Representative
- New data on maturity differences in Orchardgrass and Alfalfa – Implications on forage quality-Ray Smith
- When weather doesn't cooperate: Which fields do I cut first?-Farmer Panel: Dennis Wright-Logan County, Brad Hines-Hart County and Clayton Geralds-Hart County
- Option for managing thinning alfalfa stands-Jimmy Henning

No cost for attending, and proceedings will be available online soon after the event. For more information or to register, visit https://forages.ca.uky.edu/Events.

Novel Tall Fescue Renovation Workshop

The University of Kentucky and the Alliance for Grassland Renewal is hosting an in-person workshop in Lexington, KY on March 25 in addition to a three-night virtual workshop on February 23-25.

Both workshops will include discussions on tall fescue toxicosis causes, symptoms and management, as well as establishment and first year management of novel endophyte tall fescue varieties and variety selection and quality control. Other topics include on farm economics, producer highlights, product updates from seed companies and cost share programs available to producers.

Cost for attending the virtual workshop is $30 and includes a PDF of educational materials and access to the recorded presentations after the live event. In-person workshop is $65 and includes lunch and printed materials. Covid restrictions will be in place and masks and social distancing will be required.

Continuing education credits for the Certified Crop Advisor (CCA) program and Veterinary CE (AAVSB RACE) have been applied for. An additional, in-person workshop will be held in Mt. Vernon, MO on March 23rd. To learn more or to register for one of the workshops, please visit www.grasslandrenewal.org/workshops or click on the link at the UK Forage Website under events. Call 859-257-0597 for other registration options.

Pub of the Month: Baling Forage Crops for Silage, AGR-173

Stored forage is needed in Kentucky for winter feeding. Making round bale silage is a helpful option in situations where hay curing is difficult due to poor curing conditions. It is possible to make high quality silage or baleage using long (unchopped) forage crops baled with large round balers, although balers may need modification to handle wet material. This and other publications can be found on the forage website at https://forages.ca.uky.edu/foragepublications.

Understanding Baleage Terms and Observations

Baleage is a beneficial option for making high quality


AGR-173
Baling Forage Crops for Silage
Jimmy Henning, Chris Teutsch, and S. Ray Smith, Plant and Soil Sciences
University of Kentucky College of Agriculture, Food and Environment Cooperative Extension Service

stored forage in Kentucky. Baleage is the ensiling of wilted forage in round bales wrapped in UV-resistant, stretch wrap plastic. The technology is well proven but not without its challenges. The primary challenge is achieving a moisture content (MC) in the target range of 40 to 60%. Baleage is not ideal for ensiling for many reasons, but especially because the fermentable carbohydrates are on the inside of cells and must diffuse out to come in contact with the fermenting bacteria on the surface of the plant. For this reason, fermentation reports will often flag baleage samples as high risk because they will have low lactic acid values and pH above 5.0 compared to chopped haylages at similar moisture levels.

An on-farm research study in Kentucky over the past three years collected data on the fermentation characteristics of over 100 lots of baleage with MC

ranging from 20 to 80%. As a result of studying these samples and the associated production practices, what follows is a guide to interpreting baleage fermentation reports.

Interpreting the terms on a fermentation report

- Moisture/Dry Matter – The moisture content of the forage as tested. The MC of baleage should fall between 40 and 60 percent to be conducive to fermentation and to inhibit the growth of Clostridial bacterial.
- Crude Protein – The estimate of the protein value of baleage, calculated by measuring nitrogen (N) content and multiplying by 6.25.
- Lactic Acid – The product of anaerobic fermentation of soluble sugars and carbohydrates by lactic acid bacteria such as *Lactobacillus plantarum*. Lactic acid values of 3% or greater are desired in baleage (DM basis).
- Acetic Acid – Concentrations of acetic acid should be between 1 and 4% (DM basis) and ideally no more than half of the lactic acid present.
- Propionic Acid – Propionic acid levels should be less than 0.5 to 1% (DM basis). High levels indicate that insufficient sugar was available for fermentation.
- Butyric Acid – Butyric acid should be no more than 0.5% (DM basis) and ideally less. Cattle intake has been shown to be depressed by as little as 0.3% butyric acid.
- pH – Ideally baleage should have a pH of 5.0 or below to inhibit secondary fermentation by Clostridial bacteria.
- Ash - is the fraction of the forage that is inorganic minerals. Standing forage is about 8 to 10 % ash (DM basis). Elevated ash content (>11%) indicates that the baleage has been contaminated with dirt.

Observations are important

To assess the quality of baleage fermentation, your observations can tell you a lot. Good baleage will not have an off odor, while butyric acid baleages can have a very putrid odor. Bales that squat or that have effluent seeping out are likely excessively wet and have undergone undesirable fermentation. Finally, bales that have holes in the plastic, particularly those formed soon after baling will lead to poor fermentation in that area and even botulism. To assess the damage caused by holes, it may be necessary to take multiple samples at and around the damaged area. It is far safer to discard bales where the holes have allowed significant air infiltration. The worst case of botulism I ever encountered came from feeding from a row of bales wrapped with an inline applicator that had a significant gash in the plastic mid-row. Cows did not experience a problem until they reached the compromised baleage.

Baleage is a valuable option to allow harvest of high quality feed while avoiding rain damage. Even though ensiling parameters for baleage are generally less desirable than chopped haylages at the same moisture content, a fermentation analysis plus careful observation can be very helpful. Baleage with MC between 40 and 60%, cut at early maturing, baled tight and wrapped with six layers of plastic will generally ferment well enough to be stable through one feeding season. High moisture, elevated butyric acid levels, ammonia N above 15% (as percent of total N), ash content above 11%, bad odors and holes in plastic are all indicators that baleage has a high probability of causing feeding problems, even botulism. ~ Dr. Jimmy Henning, for Hay and Forage Grower

Forage Timely Tips: February

- ✓ Continue grazing stockpiled tall fescue if available.
- ✓ Assess grass stands. If thin, consider adding legumes.
- ✓ Begin frost seeding with at least 6-8 lb/A red and 1-2 lb/A white clover on closely grazed pastures.
- ✓ On pastures with lower fertility, consider adding 10-15 lb/A annual lespedeza to the above recommendation.
- ✓ Consider applying nitrogen in late February on some pastures to promote early growth.
- ✓ Sign up for shared use drills for spring renovation.
- ✓ Service and calibrate no-till drills
- ✓ Apply lime and fertilizer according to soil test if not done in fall.

Clovers improve pasture quality, help alleviate fescue toxicosis, and bring nitrogen into grazing systems. Red and white clover can be frost seeded on closely grazed sod in February.
Photo by: Jimmy Henning

New Videos Available From Master Grazer Program

The UK Master Grazer Program has produced a series of videos to assist producers. New videos include Calibrating a Spinner Seeder (https://youtu.be/E0wSBYIJDbw), Nutritional Importance of Forage Quality (https://youtu.be/jtN1yVfNzPM) and the Value of Improved Clover Varieties (https://youtu.be/1IgWy6E1uok). These videos and more resources are available on the KY Master Grazer website at https://grazer.ca.uky.edu/ or google "KY Master Grazer."

Upcoming Events (see Forage website for details)

FEB 1 - Indiana Pasture Weed Control Virtual Field Day, Virtual (evening). Register: www.purdueag.tv
FEB 23-25—Novel Tall Fescue Renovation Workshop, Virtual (evenings)
MAR 2-4 —Alfalfa and Stored Forages Conference, Virtual (evenings)
MAR 25—Novel Tall Fescue Renovation Workshop, In-person, Bluegrass Stockyards, Lexington, KY

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