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Forage News [2000-07]

Department of Plant and Soil Sciences, University of Kentucky

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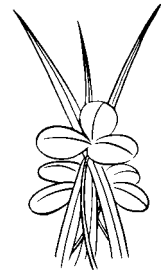
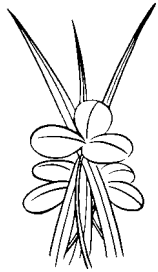
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FORAGE NEWS



In this month's issue:

- Princeton Celebrates 75 Years
 - Update on Max Q Tall Fescue
 - Shade for Grazing Beef Cattle
 - Hay Testing
 - Rain Damage to Forage During Hay Making
 - Upcoming Events
-

July 2000

Garry D. Lacefield and Jimmy C. Henning, Extension Forage Specialists • Christi Forsythe, Secretary

PRINCETON CELEBRATES 75 YEARS

This summer marks the 75th year in the history of the University of Kentucky Research and Education Center at Princeton. The Center was established in 1925 on 400 acres of land that was donated by the people of Caldwell County.

From the beginning, forages have played a major role in the programs of the Center. They were important not only as feed for the mules, dairy cattle and sheep, but especially in soil improvement and nitrogen fixation in crop rotations. The superintendent reported that "alfalfa saved the day" during a severe drought in 1931. Forages for beef cattle have been an integral part of the research programs for most of its 75 years. The Center may be the only place that grass tetany has been induced in research studies.

Forages will be featured at the field day celebrating the 75th anniversary of the Center on July 20th. The forage tour topics will include bermudagrass varieties, round bale silage, forage variety testing and the endophyte in fescue. Come and help us celebrate 75 years of forage research and education. (*Monroe Rasnake*)

UPDATE ON MAX Q TALL FESCUE

In last month's issue of Forage News, we discussed "Friendly or Novel Endophytes" and indicated Max Q was the name trade-marked by Pennington Seed for this new non-toxic endophyte technology. At the Southern Pasture Conference, Dr. Joe Bouton presented an update on work conducted in Georgia by himself, Dr. Carl Hoveland and co-workers. Two questions of particular importance involved animal performance and stand persistence.

Animal Performance - How did cattle perform on Max Q? During 1999, at both Calhoun and Eatonton, average daily gains on endophyte-free and Max Q varieties were over 2 lb. per day for steers and about 2 lb. per day for heifers. In contrast, average daily gains on toxic infected tall fescue varieties were reduced by more than 50%. For other measures of tall fescue toxicity such as elevated body temperature and depressed blood prolactin levels,

Max Q was identical to endophyte-free varieties in not showing any toxicosis. These advantages offer the potential for substantial economic gain to a livestock producer for both endophyte-free and Max Q varieties.

Stand Persistence - How do Max Q stands hold up in pastures? In grazed pastures, stands of endophyte-free, Max Q, and toxic infected tall fescue were holding up well. However, endophyte-free pastures were not able to carry as many animals when compared to the same tall fescue varieties either infected with the toxic endophyte or with Max Q. In separate small plot variety trials in bermudagrass sod grazed closely during the hot dry summers of 1998 and 1999, endophyte-free tall fescue varieties lost 77% more stand than the same varieties infected with the toxic endophyte. This was to be expected and shows the value of toxic endophyte infection for plant survival. However, varieties infected with Max Q demonstrated much better stand retention with only a 12% comparable stand loss for the Jesup variety and a 35% loss for the Georgia 5 variety when compared to the same varieties infected with toxic endophyte. It should be emphasized that these tall fescue stand losses occurred in closely grazed bermudagrass sods during two drought years. These conditions are much more stressful than where Max Q is grown alone without strong bermudagrass competition.

SHADE FOR GRAZING BEEF CATTLE

Editors Note: We received the following via e-mail from Dr. Larry Turner and wanted to pass it along to you.

Our recent research conducted with Dr. Brian Larson in Animal Sciences has demonstrated some benefit for shade in grazing beef systems for cattle on "dirty" fescue. Progressive Farmer has recently done an article on the value of shade based upon our work. Also, Beef magazine will be featuring an article in late June or early July on the same subject. We measured deep body temperature every two minutes using tympanic temperature probes over three week-long periods during the spring and summer of '98, and looked at cow and

calf performance on dirty fescue with and without shade. The results showed benefit to shade in May, but it appears we had inadequate shade during the hottest months. The take-home message is:

- 1) Shade is of benefit in grazing systems, particularly on "dirty" fescue. However, adequate shade is needed to make a difference. Too little shade may actually be detrimental, as cattle will tend to crowd under the shade and overheat.
- 2) Body temperatures can go to 107F and above from the normal of 101.5F when animals are grazing on dirty fescue, even in May. John Johns suggests anytime body temps go above 104F, performance will suffer fairly dramatically.
- 3) The economics are still to be shown. Our results with only 25 sq. ft. per beef cow-calf pair were inconclusive in summer 98. We did not have a trial last summer during the extreme heat. We probably need 40+ ft² per cow to be useful. At that level, the costs and/or labor to move artificial shades may be questionable from an economic standpoint. More research is needed on that issue.

We have some additional resources available for you to use:

A departmental pub outlining the results of the research and recommending shade levels:

<http://www.bae.uky.edu/ext/Pubs/BAE/CattleShade.htm>

A plan in our plan service for constructing artificial shades using pipe frames and shade cloth:

http://www.bae.uky.edu/ext/PlansList/Dairy/main/Dairy_Frame.htm This plan is based upon the shades used at the ARC and at the Dairy unit. A materials list and costs are included. (SOURCE: Dr. Larry Turner, Biosystems & Ag. Engr. Dept., Univ. of KY)

HAY TESTING

How good is your hay? How will animals perform on the hay you plan to feed next winter? What is the value of your hay from a nutrient standpoint? The answers to these and many other "hay quality" questions can be answered through the Kentucky Department of Agriculture Hay Testing Service. A simple toll free call (1-800-248-4628) will put you in contact with the KDA Hay Testing Program. Arrangements will be made for a trained individual to visit your farm and sample your hay. For a nominal fee of \$10.00 per lot, your hay will be tested and a report returned to you. If you would like assistance in balancing rations, it is available from your County Extension Agent and the Kentucky Department of Agriculture.

RAIN DAMAGE TO FORAGE DURING HAY MAKING

Rain that occurs between the time forage is cut and harvested causes both yield and quality losses that reduce the value of the crop as an animal feed and a marketable commodity. Weather-induced losses can be caused by:

- Increased and prolonged plant respiration that reduces soluble carbohydrates and the overall energy content of forage.

- Leaching of soluble carbohydrates, protein, and certain minerals.
- Leaf shattering and loss, removing the highly digestible and high protein portion of the forage.
- Microbial activity that metabolizes soluble carbohydrates, reduces forage energy content, and possibly produces harmful mycotoxins.
- Color bleaching.

How much does rainfall reduce yield? Several research studies have addressed the effects of rainfall on cut alfalfa. In Wisconsin, Collins measured dry matter losses of 22% when alfalfa was exposed to 1-inch of rain after 1 day of curing. Similar hay cured without rain damage lost only 6.3% of the initial potential yield. Losses appear to be greatest after partial drying of the forage has occurred. In this same study, alfalfa exposed to 1.6 inches of rain over several days suffered a 44% loss in dry matter. In Michigan, Rotz and co-workers conducted several different studies to examine the effects of rainfall on field cured alfalfa. The first study reported maximum DM losses of 34%. In a second study, rainfall intensity was kept constant at 0.7-in but spread over periods of 1 to 7 hours. Dry matter losses ranged from 4 to 13 percent with highest losses occurring when the rain was spread over a longer duration. Overall, dry matter losses were much lower than those found in Wisconsin experiments although rainfall amounts (in some cases) were nearly 2 inches. (SOURCE: Mike Rankin and Daniel Undersander, Univ. of Wisconsin, IN *The Forager*, Vol. 24 #2, June 2000)

UPCOMING EVENTS

JUL 16-19	AFGC, Madison, WI
JUL 20	U.K. All Commodity Field Day, Princeton
AUG 6	National Clover Symposium, Jackson, Mississippi
OCT 16-18	Kentucky Grazing School, UKREC, Princeton
2001	
MAR 1	21 st Kentucky Alfalfa Conference, Cave City

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