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## Forage News [2010-11]

University of Kentucky Department of Plant and Soil Sciences

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# FORAGE NEWS

For more forage information, visit our UK Forage Extension Website at: <http://www.uky.edu/Ag/Forage>

## November 2010

*Garry D. Lacefield and S. Ray Smith, Extension Forage Specialists • Christi Forsythe, Secretary*

### DR. NORMAN TAYLOR 1926-2010

Dr. Norman Taylor passed away on October 25, 2010. A memorial service was held on Friday, October 29 at Maxwell Presbyterian Church in Lexington. Dr. Taylor has spent over fifty years at the University of Kentucky working to improve "Clover" with emphasis on Red Clover. He has been recognized at the State, National and International levels for his many contributions to the advancement of "clovers". Varieties released by Dr. Taylor are common on farms throughout Kentucky and the USA, as well as in other countries.

Our deepest sympathy to Evelyn, his wife of 59 years, and family.

### REGISTRATION NOW OPEN FOR GRAZING CONFERENCE

The 10<sup>th</sup> Annual Heart of America Grazing Conference is returning to Kentucky. It will be held January 25 & 26 at the Holiday Inn Hurstbourne in Louisville. The Conference rotates among five states (Illinois, Missouri, Indiana, Ohio and Kentucky).

The program will feature leading speakers from all five states concerning topics of interest to all producers interested in grazing. In addition to informative presentations, a silent auction and trade show will be featured. The program gets underway January 25 at 2:00 p.m. EST with exhibit set-up. Registration begins at 3:00 p.m.

Registration is \$35.00/day/person until January 15. After that date it will go up to \$65.00. It includes two meals, refreshments, proceedings and other conference-related information. Complete program and registration information is available at our website [www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage) or by contacting Christi Forsythe at [cforsyth@uky.edu](mailto:cforsyth@uky.edu) or 270-365-7541, Ext. 221.

### FORAGE SPOKESMAN CONTEST AND KFGC AWARD NOMINATIONS - DEADLINE DEC. 3

Nominations are being received for the KFGC Awards and Forage Spokesman contest. Awards will be given to deserving individuals representing producers, industry, public (State & County). To nominate a deserving individual, send a one-page summary about him/her stating why he/she should be considered for this award to Garry Lacefield at [glacefie@uky.edu](mailto:glacefie@uky.edu). We also need nominations for our Forages Spokesman Contest to be held in conjunction with the 31<sup>st</sup> Kentucky Alfalfa Conference February 24, 2011 in Lexington, KY. To nominate a producer, send a half-page nomination to Dr. Ray Smith, [raysmith1@uky.edu](mailto:raysmith1@uky.edu) or mail to Plant and Soil Science Dept., N222E Ag. Science N, University of Kentucky, Lexington, KY 40546-0091.

### EFFECTS OF ERGOT-ENDOPHYTE-INFECTED FESCUE SEED ON PHYSIOLOGICAL PARAMETERS IN MATURE FEMALE MEAT GOATS

**Abstract** - The objectives of the study were to determine if consumption of endophyte-infected (E+) ground tall fescue seed would affect dry matter intake (DMI) and average daily gain (ADG) in female meat goats. During a 4 week study, 18 goats were assigned to treatment groups (n=6); endophyte-free KY-31 (E-), endophyte-free STF-43 (E43-), or E+ seed. Goats were fed a ration consisting of a 2:1:1 ratio of alfalfa pellets, a commercial sweet feed, and 1 of 3 types

of fescue seed. Orts were collected and weighed daily on a DM basis, while body weight (BW) was collected weekly. Dry matter intake (DMI) was affected by age ( $P \leq 0.01$ ) and a treatment x week interaction ( $P \leq 0.05$ ) occurred week 1 of study, with E43- having greater DMI than E-, and E+ being intermediate. Seed intake was affected ( $P \leq 0.02$ ) in E+ throughout the study and in E- weeks 1 and 4 of study. Treatment ( $P \leq 0.03$ ), treatment x week ( $P \leq 0.01$ ), and age ( $P \leq 0.007$ ) also had an effect on seed intake for E+ and E- treatments. Intake of alfalfa pellets and sweet feed did not differ ( $P \leq 0.56$ ) among treatments. No difference in ADG among treatments ( $P \leq 0.22$ ) occurred. Treatment affected total DMI and seed DMI. However, goats may handle ergot alkaloids differently than other species and more research is required to evaluate these potential differences. (Source: A.R. Boyer, T.L. Mays, G. W. Webb, M.A. Brown, and E.L. Walker IN AFGC Proceedings, Springfield, MO, June 2010)

### CHAPARRAL® HERBICIDE APPLICATION FOR SUPPRESSION OF SEEDHEAD EMERGENCE IN TALL FESCUE PASTURES AND POSSIBLE ALLEVIATION OF FESCUE TOXICOSIS

**Abstract** - Chaparral® herbicide has shown in small-plot experiments to suppress seed head emergence in tall fescue. A two-yr grazing experiment is being conducted with steers grazed on endophyte-infected tall fescue pastures that are either treated or untreated with Chaparral® herbicide. The objective of the experiment is to determine if suppression of seed head emergence and maturity can increase average daily gain (ADG) and alleviate fescue toxicosis. In 2009, herbicide treatments were assigned to six, 7.5-acre pastures of toxic tall fescue pastures in a randomized complete block design with 3 replications. Pastures were grazed from 9 April to 1 July, 2009 with 48 steers (8 per pasture). Seed head concentrations were practically void in treated pastures, whereas untreated pastures had 94 seed heads/yd<sup>2</sup>. Ergot alkaloid (ergovaline plus ergovalanine) concentrations were 4-fold greater in seed than in leaf blades and sheaths. Whole tillers and leaf blades in treated pastures had higher ( $P < 0.10$ ) crude protein (CP) and water soluble carbohydrates (WSC) than those in untreated pastures. Average daily gain of steers grazing treated pastures was higher ( $P < 0.05$ ) than those grazing untreated pastures. Steers on treated pastures also had lower rectal temperatures and greater serum prolactin concentrations. Results in 2008 indicated that Chaparral® herbicide treatment suppressed seed head emergence and maturity of tall fescue pastures to increase weight gain and reduce the severity of fescue toxicosis, if not alleviate the malady. The grazing experiment is being repeated in 2010 to verify results of the first year. (Source: G. E. Aiken, W. W. Witt, and I. A. Kagan IN AFGC Proceedings, Springfield, MO, June 2010)

### SCIENCE SHOWS BEEF PRODUCTION IS EARTH FRIENDLY

Recent studies from the scientific community have complimentary findings toward beef production with regard to its environmental impact.

Washington State University animal scientist Jude Capper says, "Comparing the environmental impact of the US beef industry in 1977 to 2007, improvements in nutrition, management, growth rate and

slaughter weights, have significantly reduced the environmental impact of modern beef production and improved its sustainability."

He added, "These findings challenge the common misconception that historical methods of livestock production are more environmentally sustainable than modern beef production... Contrary to the negative image often associated with modern farming, fulfilling the U.S. population's requirement for high-quality, nutrient-rich protein while improving environmental stewardship can only be achieved by using contemporary agricultural technologies and practices."

Specifically from his research, Capper found that in 2007, there were 13% fewer animals slaughtered than in 1977 (33.8 million vs. 38.7 million), but those animals produced 13% more beef (26.3 billion lbs. of beef versus 23.3 billion lbs. in 1977). By producing more beef with fewer resources, Capper calculates that the total carbon footprint for beef production was reduced by 18% from 1977 to 2007.

When compared to beef production in 1977, each pound of beef produced in modern systems used:

- \* 10% less feed energy;
- \* 20 percent less feedstuffs
- \* 30% less land
- \* 14% less water
- \* 9% less fossil fuel energy
- \* 18% decrease in total carbon emissions (methane, nitrous oxide and carbon dioxide)

"As the global and national population increases, consumer demand for beef is going to continue to increase," Capper says. "The vital role of improved productivity and efficiency in reducing environmental impact must be conveyed to government, food retailers and consumers."

This project was supported by the Beef Checkoff Program through a research grant from state beef councils in Iowa, Kansas, Nebraska, South Dakota and Washington. (SOURCE: GLCI News, Vol. 15, No. 5, September/October 2010)

### USE OF NOVEL ENDOPHYTE FESCUE FOR COWS

**Abstract** - Replacing toxic *Neotyphodium coenophialum*-infected tall fescue (E+) with a non-toxic endophyte-infected fescue (NE+) has improved cow performance, but producer acceptance has been slow. Our objective was to compare performance by spring (S) and fall-calving (F) cows grazing either E+ or NE+ at different percentages of the total pasture area. Gelbvieh x Angus crossbred cows (n = 178) were stratified by weight and age within calving season and allocated randomly to 1 of 14 groups representing 5 treatments: 1) F on 100% E+ (F100; 3 replications); 2) S on 100% E+ (S100; 3 replications); 3) F on 75% E+ and 25% NE+ (F75; 3 replications); 4) S on 75% E+ and 25% NE+ (S75; 3 replications); and 5) S on 100% NE+ (SNE100; 2 replications). Cow weight and BCS at breeding, at the end of breeding, at weaning, and calving rates were greater ( $P < 0.05$ ) from F vs. S. A calving season by NE+ % interaction ( $P < 0.05$ ) was detected for calving rates; calving rates were improved dramatically for S75 vs. S100 but not for F75 vs. F100. Cow weight was greater ( $P = 0.05$ ) from SNE100 vs. S75. Calf gain, actual weaning weight, ADG, adjusted weaning weight, sale price (\$/lb), and calf value at weaning were greater ( $P < 0.05$ ) from F vs. S and from SNE100 vs. S75 except for sale price which was greater ( $P < 0.05$ ) from S75 vs. SNE100. Therefore, a fall-calving season may be more desirable for cows grazing E+, resulting in greater calving rates, cow weight, and BCS at critical times, and heavier calves at weaning. Limited access to NE+ may improve cow weight at weaning, calf weight through weaning, and may increase calving rates of spring-calving cows. (Source: J. Caldwell, K. Coffey, C. West, D. Philipp, J. Jennings, D. Hubbell, III, J. Tucker, A. Young, T. Hess, D. Kreider, M. Looper, M. Popp, M. Savin, E. Kegley, and C. Rosenkrans, Jr. IN AFGC Proceedings, Springfield, MO, June 2010)

### EVALUATION OF ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM*) IN TWO FALL GRAZING SYSTEMS ON FORAGE QUALITY AND STOCKER CALF PERFORMANCE IN NORTHERN MINNESOTA

**Abstract** - Effects of fall grazing stockpiled and windrowed annual ryegrass on forage quality and beef heifer performance were evaluated. One renovated, five-acre pasture was seeded with annual ryegrass (*Lolium multiflorum*) in late June and treated with herbicide in August for weed control. In late September, stockpiled forage from

one-half of the pasture was cut into single windrows while the other half was left standing. Weaned Angus beef heifers (n = 48; 411 ± 16 lb initial BW) were randomly assigned to one of two grazing treatments (3 replications per treatment; 8 heifers per replication): 1) stockpiled annual ryegrass (STO), and 2) windrowed annual ryegrass (WIN). Forage samples were collected to determine change in forage quality over time and weekly DM loss following grazing. Heifers were weighed at trial initiation, weekly, and at trial completion to measure animal performance. Initial (12.8 vs. 10.6%) and final (13.6 vs. 11.4%) concentration of CP was greater ( $P < 0.01$ ) for STO compared to WIN; however, there was no change ( $P > 0.15$ ) in CP concentration within treatment over time. Concentrations of NDF (54.3 to 66.5%) and ADF (36.0 to 42.3%) increased ( $P < 0.01$ ) over time for WIN but did not change ( $P > 0.12$ ) over time for STO. Concentration of TDN decreased ( $P < 0.01$ ) over time for WIN (60.8 to 55.9%) but was unchanged ( $P = 0.12$ ) over time for STO. Initial relative feed value was greater ( $P < 0.01$ ) for WIN; however, RFV decreased ( $P < 0.01$ ) over time for WIN while tending to increase ( $P = 0.10$ ) over time for STO. Total forage DM loss was estimated at 6.3 ± 4.0% and 2.5 ± 1.0% for STO and WIN. Heifers on STO grazed 5 d longer ( $P < 0.01$ ) than WIN (45 vs. 40 d). Although final BW (454 vs. 442 ± 18 lb) and ADG (0.96 vs. 0.82 ± 0.1 lb) were similar for STO and WIN, overall BW gain was greater ( $P < 0.05$ ) for STO (42.4 vs. 32.8 ± 3.3 lb). Results suggest grazing stockpiled and windrowed annual ryegrass may be viable systems to extend fall grazing; however, it appears forage maturity can affect forage quality diversely in different grazing systems to levels that may limit beef heifer performance. (SOURCE: J.M. Kelzer, R.S. Walker, S. Bird, and R.D. Mathison IN AFGC Proceedings, Springfield, MO, June 2010)

### USING MATURE HAY FOR BEDDING: POTENTIAL FOR TALL FESCUE TOXICITY

With budgets tight, a number of horse farm managers have reduced the cost of buying straw for bedding by using a hay harvest of overmature grass pastures for bedding.

On the surface, it makes sense to use this stemmy hay for bedding. But, be cautious when using this hay for pregnant mare bedding during their last trimester. It is not uncommon for horses to eat some of their bedding, especially if it is hay, and ergovaline levels over 200 ppb (parts per billion) can cause fescue toxicity in pregnant mares. Our surveys show that Central Kentucky horse pastures often contain over 25% tall fescue, and since the stem and seedhead of tall fescue contain the highest levels of the toxin ergovaline, there is a good chance that mature hay will contain toxic levels of ergovaline. In other areas of Kentucky and in surrounding states, tall fescue often makes up more than 50% of horse pastures.

If you are using overmature grass hay as bedding for pregnant mares, first have it tested for ergovaline concentration at the University of Kentucky Veterinary Diagnostic Laboratory (formerly the Livestock Disease Diagnostic Center) in Lexington. Work with your Veterinarian or county agent to submit samples. Samples should be taken from the bales with a hay probe, just as you would when taking samples to test for hay quality. Make sure that the sample you submit is comprised of cores from 5 to 10 separate bales from each hay cutting. In most counties, the county agent or farm service store can loan a hay probe for sampling. The cost of the ergovaline test is \$50.00 per sample. For more information contact Dr. Cindy Gaskill at 859-257-7912

In Central Kentucky, the University of Kentucky Pasture Evaluation Program will come to your farm, sample your hay, submit it to the VDL, and send you the results with an interpretation. For more information on the Pasture Evaluation Program visit <http://www.uky.edu/Aq/Forage/HorseLinks.htm> and click on "Testing Hay for Ergovaline."

### UPCOMING EVENTS

- NOV 23 50<sup>th</sup> Anniversary Pennsylvania Forage & Grassland Council, East Earl, PA
- JAN 14 Forages at KCA, Lexington
- JAN 25-26 Heart of America Grazing Conference, Louisville
- FEB 24 31<sup>st</sup> Kentucky Alfalfa Conference, Lexington



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