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Forage News [2009-04]

University of Kentucky Department of Plant and Soil Sciences

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FORAGE NEWS



Research & Education Center
Princeton, KY 42445

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

April 2009

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

REGISTER EARLY FOR THE 2009 AFGC CONFERENCE

The early registration deadline is approaching for the 2009 American Forage and Grassland Council annual conference June 21-23 in Grand Rapids, Michigan. Go to the UK forage website www.uky.edu/Ag/Forage and look under events for registration and full conference details. You will save \$80 if you register before May 1. As many KFGC members and Kentucky producers know, annual AFGC meetings provide a great opportunity to compare notes and get new ideas from forage producers around the country. The conference features presentations from leading forage professionals and a range of tours highlighting innovative forage farmers in Michigan. Come and support Kentucky's Clayton Gerald as he represents Kentucky in the Forage Spokesperson Contest. County agents can find out about funding opportunities by contacting Dr. Ray Smith at raysmith1@uky.edu. Ray can also mail you anyone a hard copy version of the registration form 859-257-3358.

SOUTHERN PASTURE & FORAGE CROP IMPROVEMENT CONFERENCE

Kentucky is hosting the annual Southern Pasture and Forage Crop Improvement Conference May 10-12, 2009 in Lexington. This meeting is primarily for extension agents, university researchers and extension specialists, other agency personnel, and students to meet and share new developments in forage production on utilization in their states and to make plans for the future. The meeting is relatively small with about 75 participants, so you will have many opportunities to meet and ask questions to top forage specialists across the southern USA. Go to the UK forage website www.uky.edu/Ag/Forage and look under events for registration and full conference details. Early registration deadline is May 5. If you have never attended one of these conferences we very much encourage you to consider attending. Please contact Ray Smith if you have further questions (raysmith1@uky.edu or 859-257-3358).

CONSUMER PURCHASING TRENDS SHIFT IN RESPONSE TO CHANGING ECONOMY

As retailers try to gauge the impact of the economy on their businesses, new research helps explain ways your meat case might be affected by rising prices and shrinking budgets. An August 2008 study by Ipsos surveyed primary household shoppers about how economic pressures are affecting their food choices and shopping strategies. Of the adults surveyed who reported that supermarket prices had increased during the prior 6 months, 61% were identified as "price sensitive" because they changed their shopping habits as a result of rising prices.

Two adjustments that price sensitive shoppers are likely to make at the meat case are:

- Buy less expensive cuts and/or buy smaller packages.
 - Approximately 48% of price sensitive consumers fall into this category.
- Reduce or eliminate purchases of certain types of food.
 - Approximately 39% of price sensitive consumers fall into this category.

Because beef gives consumers so many options in the meat case, they are still able to enjoy delicious cuts of beef, but they may choose cuts or packages that are a greater value. Price sensitive consumers report that they are purchasing steaks and roasts less; some say they are cutting back to eating steak once a week or less. According to the beef checkoff-funded Consumption Tracker Data for November 2008, of the people who report eating less steak and roast, price is cited as the top reason.

Price sensitive consumers are also more likely to have made other changes in their purchasing and meal planning, including:

- Eating out less/cooking at home more
- More careful meal planning
- Purchasing less expensive food/cutting meal costs
- Cutting back on purchases of perceived luxury items
- Buying more store-brand items
- Using more manufacturers' coupons
- Buying sale items and freezing
- Eating more leftovers
- Making recipes that use less expensive ingredients

(SOURCE: *eHay Weekly*, January 6, 2009)

10 REASONS TO MAKE FORAGE FIRST IN THE RATION

1. **Provide protein** -- Legume forages can provide up to 75% of the protein needed by lactating dairy cows; corn silage can provide up to 25%.
 2. **Provide fiber** -- Forages are often the only source of fiber in a cow's diet. Fiber is essential to slow the passage of feed, thereby increasing the amount of nutrients that the cow can absorb from the feed.
 3. **Maximize intake** -- Forages stimulate cud chewing and rumination, which improve the cow's appetite. Some nonforage sources of fiber actually reduce intake.
 4. **Provide energy** -- Forages are also an important source of energy - especially corn silage which can provide up to 50% of the energy needed in a cow's diet. Alfalfa silage can provide up to 40%.
 5. **Minimize acidosis** -- Acidosis occurs when excessive VFA production in the rumen causes cows to go off feed. Adequate forage and fiber greatly stimulate rumination (cud chewing) which buffers acids in the rumen.
 6. **Designed for rumen** -- Cows were designed to eat forages. With their rumens working as fermentation vats, cows turn plants and byproducts that we can't eat into foods we can.
 7. **Minimize laminitis** -- Many times when cows develop acidosis, they also develop laminitis. Adequate fiber in the diet greatly reduces both acidosis and laminitis.
 8. **Reduce feed costs** -- Forages are an economical source of protein, energy and fiber because these nutrients are more expensive when purchased as concentrates.
 9. **Good for soil** -- With their deep roots and permanent ground cover, perennial forages help hold soil in place. They also increase the organic matter in soil, and legumes add nitrogen to the soil.
 10. **Sustainable** -- Perennial forages help protect the environment because they reduce surface water runoff and leaching of nutrients; they require less fertilizer; and they cover the soil year-round.
- (SOURCE: *U.S. Dairy Forage Research Center, USDA-Agricultural Research Service*)



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SPRING NITROGEN FERTILIZATION OF HAYFIELDS IN 2009 – WILL IT PAY?

We are close to the point where farmers would normally start to apply nitrogen to hayfields to boost spring and early summer production levels. However, with urea currently selling at over \$400 per ton and hay prices declining from last year, many producers are questioning the profitability of this practice in 2009. While the price of nitrogen is known with a high degree of certainty right now, the price that hay will ultimately sell for this fall and winter is not. Thus, the question ultimately comes down to, at what hay prices will nitrogen applications prove profitable this year?

To help answer this question, I analyzed the major factors that impact spring-applied nitrogen profitability. These include the price of nitrogen, price of hay, response rate of the nitrogen, nitrogen application rate, increased production costs from additional forage, improved quality of nitrogen fertilized hay, and additional P and K removal.

The price of nitrogen was evaluated on an elemental (unit) basis between \$.40-.50 per pound (\$370-460 per ton urea). Two application rates were evaluated: 40 unit applications (87 lbs urea) and 80 unit applications (174 lbs urea). The response rate of nitrogen declined as application rate increased. The application cost for spreading the nitrogen was set at \$5/acre. Machinery and labor costs of producing the extra hay were estimated at \$12.42 per 1200 pound bale and \$1.36 per 45 lb small square bale, both sold on the farm. These costs include improved efficiency factors resulting from increased forage density and include mowing, raking, baling, and moving bales to storage for the additional forage produced.

Improved forage quality of nitrogen fertilized hay was accounted for by assuming a 1.0 ton yield without nitrogen, and valuing this hay at \$5 and \$10 per ton less than the nitrogen fertilized hay for round and square bales respectively. Two scenarios were evaluated for P and K removal: 1) 100% replacement and, 2) 50% replacement (Approximately 18 lbs of P₂O₅ and 50 lbs of K₂O are removed for each ton of hay). It was assumed that the cost of replacing P₂O₅ was \$.46/unit (\$600/ton of 18-46-0) and the cost of replacing K₂O was \$.67/unit (\$800/ton of 0-0-60). Keep in mind that even if a soil test does not recommend P and K applications for the current year, nutrients are still being taken from the soil and that they will have to be replaced at some point.

A range of hay prices were evaluated to determine which prices, if any, would result in profitable nitrogen applications this year. In general, when hay prices reached \$85/ton for round bales and \$120/ton for square bales (\$2.70/bale), nitrogen applications proved profitable with the 100% replacement scenario for P and K. For the 50% replacement scenario, hay prices needed to reach \$70/ton for round bales and \$105/ton for square bales (\$2.35/bale) to be profitable. In almost all situations evaluated, 40 pound application rates proved to be more profitable than 80 pound rates. For more detailed results, consult the publication "Profitability of Spring Hayfield Nitrogen Applications – 2009 Guide" (AEC 2009-02). (SOURCE: Greg Halich IN Economic and Policy Update, Vol. 9, No. 3, March 19, 2009)

BY-PRODUCT GYPSUM: WHAT'S IT WORTH TO FORAGE PRODUCERS IN KENTUCKY?

The short answer is, not much. Gypsum, also called calcium sulfate (CaSO₄·2H₂O), is a source of calcium (Ca) and sulfur (S), being 23.3% Ca and 18.6% S in the pure compound, if you need these nutrients. A yield response to greater Ca or S nutrition has never been observed on a Kentucky forage crop.

By-product gypsum is produced by S removal during electricity generation, oil refining and phosphate fertilizer manufacture; and during waste water treatment. The major industrial use of by-product gypsum was wallboard manufacture, but the housing slowdown has left industry with mountains of by-product.

Physical consistency varies from dry, fine and dusty to moist, caked and lumpy. Few are "field-ready" for optimal spreading. The chemical consistency of by-product gypsums also varies because of different constituents trapped during industrial processes, including other nutrients (magnesium, potassium, phosphorus, boron, copper, iron, manganese, molybdenum, and zinc), and other elements (aluminum, arsenic, selenium, silicon, sodium, nickel, chromium, mercury, etc.) of biological concern. There may be unreacted alkalinity

(liming value) or strong salinity (other sulfate and/or chloride salts). These contaminants are not present in all by-product gypsums, and may be at such low levels as to be innocuous, but no agricultural user should proceed without a "chemical analysis profile" of the material.

Gypsum application reportedly improves soil physical properties, including structure and water infiltration. These benefits are associated with gypsum use on saline-sodic and sodic soils, which do not occur in Kentucky. The physical properties of Kentucky soils often benefit from organic matter **applications like chicken litter**, but a physical property response to gypsum has not been shown.

Kentucky soils contain large amounts of bioavailable Ca, and a forage Ca deficiency has not been observed. There have been reports that gypsum application reduces subsoil acidity, improves root development and increases subsoil water use. Some Kentucky soils might benefit from this practice, but little research has been done and no recommendation can be made. **Gypsum does "tie up" subsoil aluminum that is present in some southern U.S. soils, but aluminum concentrations are rarely high enough to cause plant toxicity in Kentucky.**

In Kentucky, S deficiencies have not been observed. Sulfur deficiencies in forage crops are best confirmed by plant analysis. If needed, S should be added at a rate of 20 to 40 lb S/acre, requiring 120 to 240 lb gypsum/acre. High levels of S (more than 0.4% of dry matter) should be avoided in cattle diets, because excessive S is associated with cattle polio.

The expected benefits of by-product gypsum are few. It is also true that these materials usually are not harmful to soils. This suggests that forage producers in **Kentucky** should, if they apply these materials, **be paid to use them**. By-product gypsum applied to soils does not incur long-term storage or landfill charges **for industry**. (SOURCE: Dr. John H. Grove, Research Soil Scientist)

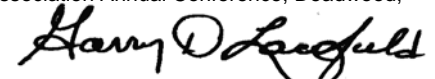
ROTATIONAL GRAZING GETS HIGH MARKS

A third of the 150 attendees at the recent Monett Beef Cattlemen's Conference in southwestern Missouri ranked rotational/management-intensive grazing as the most helpful management practice they've used in the last 12 months, reports University of Missouri extension livestock specialist Eldon Cole. "A high percentage of the other responses dealt with pasture or hay production," says Cole. Adding legumes to pastures and stockpiling fescue were the distant second and third answers.

Other forage-related management tips included: cut hay earlier, applied weed control, used warm-season grass, replaced endophyte-infected Kentucky 31 fescue and used poultry litter instead of commercial fertilizer. "It's logical that cattle producers concern themselves with forage production since it's at least two-thirds the annual cost of keeping a beef cow," says Cole. (SOURCE: eHay Weekly, March 24, 2009)

UPCOMING EVENTS

- MAY 10-12 Southern Pasture & Forage Crop Improvement Conference, Lexington
- JUN 21-24 American Forage & Grassland Council, Grand Rapids, MI
- JUN 27 UK Equine Field Day, UK Maine Chance/Spindletop Research Farm, Lexington
- JUL 23 UK All Commodity Field Day, Research & Education Center, Princeton
- SEP 17-19 National Hay Association Annual Conference, Deadwood, SD



Garry D. Lacey
Extension Forage Specialist
April 2009



Make plans now to attend the 2009 UK All Commodity Field Day at Princeton on July 23, 2009.