Forage News [2004-04]

Department of Plant and Soil Sciences, University of Kentucky

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SPRING GRAZING SCHOOL – FINAL CALL
The Kentucky Spring Grazing School will be held at the Hardin County Extension Office April 20-21, 2004. Registration fee is $100.00 and includes all materials, grazing notebook, Southern Forage Book, breaks and selected meals. If you would like to reserve a spot in the Grazing School, make check payable to: Kentucky Forage & Grassland Council and send to Rebecca Smith, 400 W.P. Garrigus Building, University of Kentucky, Lexington, KY 40546-0215, phone: 859-257-5985.

FORAGE EXTENSION WEBSITE
Our THANKS to all who have passed on compliments and suggestions for our new Forage Website http://www.uky.edu/Ag/Forage. We appreciate all the suggestions for additional "links". We have added many new links and will continue to expand the site. New this month is the Forage Book section. Thanks again for your support, encouragement and suggestions.

DR. MIKE COLLINS ACCEPTS POSITION AT MISSISSIPPI STATE UNIVERSITY
Dr. Mike Collins, Forage Research, Department of Agronomy, University of Kentucky, has accepted the position as Head of the Plant and Soil Sciences Department at Mississippi State University effective May 1, 2004. Dr. Collins has been a "KEY" member of our Forage Team in Kentucky and his departure will leave a big void in our program. We wish Mike the very best in his new position and fully realize it is Mississippis' gain and our loss.
Good luck Mike – We will miss you!

MR. ALLEN JOHNSON ACCEPTS POSITION WITH MONTGOMERY COUNTY REGIONAL MARKETING ASSOCIATION
Mr. Allen Johnson will leave the Kentucky Department of Agriculture Hay & Grain Division to accept a new position with the Montgomery County Regional Marketing Association. Allen has played a very important role with our State Forage Team. He has served on and participate in many forage activities including: KFGC Board, Alfalfa Conference Program committee, Master Cattleman,

HAY CONTEST WINNERS
Congratulations to the following for winning awards for highest quality alfalfa, and alfalfa-grass mixture during 2003. The awards were presented at the 24th Kentucky Alfalfa Conference held February 26, 2004 at the Cave City Convention Center.

2003 Alfalfa Hay Contest Winners

<table>
<thead>
<tr>
<th>Month</th>
<th>Alfalfa-Grass</th>
<th>Alfalfa</th>
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<tbody>
<tr>
<td>May</td>
<td>Gregg Howell</td>
<td>Clucker Hill</td>
</tr>
<tr>
<td>June</td>
<td>John Nowak</td>
<td>Bill Folz</td>
</tr>
<tr>
<td>July</td>
<td>Dale Meredith</td>
<td>John McCoy</td>
</tr>
<tr>
<td>August</td>
<td>Richard Montgomery</td>
<td>Roger Burns</td>
</tr>
<tr>
<td>September</td>
<td>Charles Powell</td>
<td>Cox Farms</td>
</tr>
</tbody>
</table>

Mr. Charles Powell had the highest overall alfalfa-grass hay for 2003 and Cox Farms had the highest alfalfa hay sample. Congratulations to all winners.

ROTATIONAL GRAZING’S EFFICIENT
Switching from conventional to rotational grazing can increase pasture efficiency from 30-35% to as high as 75%.
That’s according to Stan Pace, a Mississippi State University agronomic crops agent.

"Cows are selective graziers, just like people," says Pace. “They’ll eat butter beans and leave the beets. When put in a selective forage situation, they’ll overgraze some spots and undergraze others. Over time, you will have poor-quality grass and less total forage."

He divided a 25-acre field in half, then subdivided one half into seven paddocks of 1.7 acres each. Twenty-five cows are rotated through the paddocks, spending three or four days in each one.

Forage utilization efficiency has increased 50-60%, says Pace. Rotating cattle every day would increase efficiency to about 75%, he adds.

“Rotational grazing improves both the production and quality of forages,” says Richard Watson, Mississippi extension forage specialist.
The practice has been recommended for years, but most producers don’t do it. Due to recent high stored-feed prices, more are considering it, says Watson. (SOURCE: Hay & Forage Grower Magazine, March 2004.)
EMERGENCE AND SURVIVAL OF LEGUMES SEeded INTO PASTURES

Recent research at Iowa State University looked at the emergence and survival of alfalfa, red clover, and birdsfoot trefoil when spring seeded into pastures on hilly land. Additional treatments in this research were nitrogen fertilization rates (0, 20, 40 and 80 lb/acre) and sward grazing height (2 and 5 inches). Results and conclusions form this research were:

Position on Hill – Legume emergence was unaffected but survival was greater on the backslope than on the top of the hill. Legume survival was better on the backslope because there was less grass competition.

Nitrogen Fertilization – Greater nitrogen fertilization when trying to establish legumes into a pasture increases grass competition and consequently reduces both legume emergence and survival.

Grazing Height – Higher grazing height reduced legume emergence and survival. Shorter grazing reduced the competitive advantage of the established grasses and allowed more legumes to emerge and survive.

Conclusion – Management practices that minimize the competitiveness of established grasses (no nitrogen fertilizer and close grazing height) will improve the chances of successfully interseeding legumes into the pasture. In a rolling field, expect to have better interseeding success on the backslope than the crest of the hill. (SOURCE: Crop Science 44:227-233)

Does Fertilizer Harm Soil Microbes?

Microbes in the soil are important to the nourishment of plants. Many of them facilitate the chemical conversions and physical transport needed to make nutrients available.

Some people claim that soil microbes should supply all the nutrients needed by plants. Some also claim that applying soluble forms of plant nutrients harms the biology in the soil and reduces its capacity to make the native soil nutrients available. Let’s look at the evidence.

The microbes that supply nitrogen are from two categories—symbiotic and free-living.

The symbiotic types are mainly rhizobial bacteria that infect the roots of legumes, such as alfalfa and soybeans. These bacteria supply the bulk of the nitrogen needs of legumes. However, even genetic engineering has not yet been able to coax the non-legume crops—corn, wheat, canola, potatoes, and many others—to fix nitrogen. Most crops depend on nitrogen applications in the form of fertilizer, manure, or organic materials.

The free-living bacteria in the soil supply some nitrogen as well, but the amounts are limited and are not influenced by fertilizer. A paper published in the journal Nature in 1998 compared nutrient dynamics in three Pennsylvania crop rotations: one fertilized, one manured, and one legume-based. The study found that the free-living bacteria supplied less than 5 pounds per acre per year, an amount that did not differ between the three rotations. No evidence of harm.

Microbes that help supply phosphorus form an association with plant roots. The association is called “mycorrhizae”, a term that means “fungus-root”. Fungi explore the soil better than roots, because their hyphae are narrower. They can bring phosphorus to the root from as far as 4 inches away.

Mycorrhizal fungi depend on the plant for energy in the form of sugar. It is well known that they are more active when phosphorus is deficient. But sugar used to feed the mycorrhizae yielded 14% less than when fertilized with phosphorus. The fertilizer—even though it was applied at twice the recommended rate—reduced the density of fungal hyphae by 24%, but certainly did not eliminate it. When soil test levels are low, phosphorus additions can actually increase mycorrhizal development.

Scientists have recently discovered that mycorrhizae produce a unique substance called glomalin. It may form as much as 30% of the organic matter in soil, and it seems to help maintain soil structure. Dr. Sara Wright, a noted expert on glomalin, recently stated that the best field-scale management for the production of glomalin is to “use minimal disturbance, add no more phosphorus than is required for crop production, and use cover crops.”

Soil microbes depend on plants for their nourishment. Fertilizers that nourish plants also nourish the biology of the soil. (SOURCE: PPI Agri-Briefs, Spring 2004, No. 1)

KENTUCKY FARM NUMBERS

There were 87,000 farms in Kentucky during 2003, unchanged from the revised 2002 number based on census data according to the Kentucky Agricultural Statistics Service. The average size of Kentucky farms, at 159 acres, was unchanged from 2002. A farm is defined as “any establishment from which $1,000 or more of agricultural products were sold or would normally be sold during the year”. Government payments are included in sales. Institutional farms as well as experimental and research farms are included as farms. Places with their entire acreage enrolled in the government programs such as the Conservation or Wetland Reserve programs are considered farms. Nationally, Kentucky ranks fourth tied with Tennessee in number of farms. States with more farms than Kentucky include Texas with 229,000, Missouri with 106,000 and Iowa with 90,000. Of the 87,000 Kentucky farms, 56,500 had sales of $1,000-$9,999, 25,000 had sales of $10,000-$99,999 and 5,500 had sales of $100,000 or more. Land in farms remains constant at 13.8 million acres. Farmland accounted for 54 percent of the approximate 25.4 million total acres in Kentucky. (SOURCE: Kentucky Agri-News, Vol #23, Issue 5, March 1, 2004)

UPCOMING EVENTS

JUN 12-16 American Forage & Grassland Council, Roanoke, VA
JUN 24 KFGC Field Day, Russell Hackley Farm, Grayson County
OCT 3-5 Fourth Eastern Native Grass Symposium, Lexington
OCT 26 5th Kentucky Grazing Conference, Bowling Green
2005
FEB 24 25th Kentucky Alfalfa Conference, Cave City Convention Center

Garry D. Lacefield
Extension Forage Specialist
April 2004