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FORAGE NEWS

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

KENTUCKY PLAYS MAJOR ROLE AT NATIONAL FORAGE MEETING

A historical forage meeting will be held Feb. 20-24, 1999 in Omaha, NE. For the first time ever, the American Forage and Grassland Council will join forces with the Society for Range Management. Kentuckians will play a major role in this event. Dr. Jimmy Henning is the current President of AFGC, Mr. Larry Jeffries is Vice President and will take over as President at the banquet. Mr. Warren Thompson will be the keynote Industry/Affiliate Council Breakfast speaker and Mr. Tom Keene serves on the AFGC Board. Dr. Monroe Rasnake, President of the KY Forage Council and Bill Talley, Vice President of KFGC serve on the Affiliate Advisory Committee. Drs. Mike Collins and Garry Lacefield are featured speakers at the Hay Symposium. John Nowak will represent KY in the Forage Spokesperson Contest. Several others will also attend and participate in various aspects of this historical event.

1998 FORAGE VARIETY TEST REPORTS

The 1998 Forage Variety Test Reports for alfalfa, red clover, tall fescue, and orchardgrass are now available in county extension offices. County offices will need to request these from the Ag. Communications Bulletin Room. They also can be downloaded from the UK College of Agriculture's home page at the following Internet address: <http://webdocs.ca.uky.edu/agc/pubs/respubs.htm>

PASTURE RENOVATION

Follow these six important steps when renovating grass fields with legumes:

Step 1. Have the soil tested and apply the needed lime and fertilizer. Legumes need a higher soil pH and fertility level than grasses. However, DO NOT use nitrogen. Added nitrogen stimulates grasses, which increase competition with the legumes.

Step 2. Reduce the vegetative cover on the soil. This is best done by heavy grazing in late fall and early winter. Removing the excess grass cover will make it easier to get the legume seed in contact with the soil.

Step 3. Select the legumes to be used. This will depend on the soil and the planned use of the forage. For hay, alfalfa or red clover is usually best. For both hay and grazing, a combination of red clover and ladino clover works well. Ladino, red clover, and/or annual lespedeza work well in pastures.

Step 4. Use the right kind and amount of seed. Select varieties that perform well in your area. The only way to be sure of what you're planting is to use certified seed. Also, be

sure to use the right kind of high quality inoculant mixed with the seed just before planting. Use a sticking agent to be sure that the inoculant sticks to the seed.

Step 5. Plant the seed so that it makes good contact with the soil. There are several ways to do this. One of the best ways for most farmers is to use a disk, field cultivator, or field tiller. Disturb 40 to 60 percent of the sod for planting clovers. For alfalfa seeding, almost all of the sod should be torn up (loosened from the soil). Tillage helps control the grass growth and exposes the soil so the legumes have a better chance to germinate and grow. Broadcast the seed and pack the soil with a corrugated roller.

Another method is to use a no-till renovation seeder. These do a good job of placing the seed in the soil, but they don't reduce the competition from the grass.

A simple, but effective method is to broadcast the legume seed on the soil surface in late winter (Feb. 15 to March 15). As the soil freezes and thaws, the seeds become covered. This method does not work well with alfalfa.

Herbicides can be used to kill or suppress some of the grass and help control competition. Follow the label directions for rates and grazing restrictions when herbicides are used.

Step 6. Control grass and weed competition. This step is one of the most critical ones. Many attempts at renovation have failed simply because the grass was allowed to grow and reduce the light, nutrients, and water available to the young legume plants. The grass must be kept short by grazing or mowing until the new legume plants are 3 to 4 inches tall. Stop grazing if the animals begin biting off the young legume leaves. Grazing and mowing should be stopped for several weeks to allow the legumes to become well established. After this, the field should be mowed or grazed on a schedule that will help keep the particular legumes used in good condition. A rotational grazing system helps keep legumes in the stand longer. (SOURCE: UK Pub. AGR-26)

PASTURE BLOAT

Frothy bloat results from the production of a stable foam that does not allow gas bubbles to form free gas and be "belched" off. It usually occurs in cattle grazing lush legumes, such as alfalfa, ladino, or white clover. The danger of bloat is greatest when pasture plants are young, lush, and high in soluble protein. The disorder is due to the foaming properties of soluble leaf proteins, which are more prevalent in legumes.

The essential feature is that coalescence of the small gas bubbles is inhibited and intraruminal pressure increases because eructation (belching) cannot occur. This condition can arise from diets of lush legumes or winter wheat pasture; it

may be seen with high-concentrate finishing ratios in the feedlot. Of the commonly grown legumes, alfalfa and ladino clover are classified as highly dangerous, white and red clovers are moderately dangerous, and crimson and subterranean clovers as mildly dangerous.

Current research supports both animal and plant characteristics as predisposing to legume bloat. Research has shown that some cows can be classified according to their susceptibility to pasture bloat into high or low susceptibility and the offspring show influences of their parentage. A number of inherited characteristics are related to bloat. Individual cattle have been classified as having either high or low susceptibility to legume bloat. High susceptible cattle have larger rumen volumes than non-bloating animals. There is a slower rate of passage of particles from the rumen in bloating cows. In a research study, cattle that bloated on a given day consumed 18 to 25% less alfalfa immediately before bloat than non-bloaters did in the same time period.

Adaptation of animals to a particular feed is an important factor. Animals may be at increased susceptibility for the short-term due to changes in rumen microflora. As animals become adjusted to a particular pasture or ration, they have less susceptibility to bloat. The claim that the risk of bloat may be reduced by waiting until the dew is off the alfalfa is true. A study demonstrated that cattle were 2 to 17 times more often likely to bloat when fed between 7 and 8 AM than when they were fed 4 hours later.

There is a relationship between plant factors associated with bloat and the rapidity with which leaf structure is disrupted after ingestion. Bloat-inducing plants are more readily macerated, thus providing quicker bacterial access to the inner leaf cells. Spring (mid-March to mid-May) is the most dangerous season when the pastures are lush, young and the leaves of the plant contain high concentrations of soluble proteins. (Source: Dr. Patty Scharko, KCA Conference Proc., Special Publ. KFGC 99-1, January 1999)

GETTING THE MOST OUT OF YOUR LEGUME-BASED PASTURES

Pastures are the key to unlocking the potential of your cattle operation. Your pastures have a tremendous impact on calf weaning weights, cow reproductive rates, and the cost of production. Legume-based pastures can improve gains and pregnancy rates. It is important that these pastures be managed correctly and that they be utilized to give maximum benefit to the cattle. (SOURCE: Dr. Roy Burris, KCA Forage Conference Proc., Special Publ. KFGC 99-1, January 1999)

ALFALFA IS FOR PEOPLE, TOO

Although alfalfa may not appear on anyone's top-ten list of favorite foods, the payload of protein, vitamins, and minerals that makes it such a great forage for animals also makes it food for people.

Bob Dollison, president of Leaf Nutrient, Inc., says alfalfa protein has done wonders for hundreds of undernourished Mexican children. Over the past decade, the charitable organization Dollison heads has made it possible for people in more than 100 poor rural villages in Mexico to extract protein from locally grown alfalfa and add it to tortillas, pasta, cakes, and other foods they customarily prepare.

Within a matter of weeks, Dollison says, children who regularly get supplemental alfalfa protein are noticeably more alert and begin to perform better in school. Adding just one tablespoon of alfalfa-juice concentrate to their food each day helps them grow and develop normally and decreases their susceptibility to communicable diseases, Dollison notes.

Low tech. Two simple, low-cost machines invented by University of Wisconsin agricultural engineers are used to extract the protein. One is a hammermill-like device used to grind up whole, freshly cut alfalfa plants. The second is a hydraulic press that squeezes most of the juice out of the ground plant material.

Heating the protein-rich juice to 170 degrees F for about 10 minutes removes the characteristic grassy taste and coagulates the protein and other nutrients. The coagulated material can then be used fresh or stored in either dried or frozen form.

The remaining pulp is fed to cattle. University of Wisconsin research has shown that the processing equipment breaks down the plant material more effectively than chewing. Even after the juice is removed, cattle get more nutrients from the pulp than they ordinarily would from unprocessed alfalfa. (Source: Karl Kessler, *The Furrow*, 1999 Special Forage Issue)

WILDLIFE HAVEN

Many wildlife species show a strong preference for alfalfa fields, according to Dan Putnam, a University of California agronomist. He says deer and elk relish the forage, and many smaller species such as insects, gophers, ground squirrels, voles, and rabbits make their homes in alfalfa fields.

"Predators of small mammals and snakes are most likely to select alfalfa fields over other hunting grounds," Putnam adds. "These include several migratory hawks and falcons, the great blue heron, killdeer, dunlin, Brewer's blackbirds, crows, yellow-billed magpies, and European starlings.

Putnam notes that alfalfa fields are also attractive to a number of rare species, including the Swainson's hawk, northern harrier, white-faced ibis, California gulls, golden eagle, prairie falcon, Aleutian Canada goose, sandhill crane, and giant garter snake. He adds that University of California entomology students have found as many as 591 species of insects living in a single alfalfa field. (SOURCE: *The Furrow*, 1999 Special Forage Issue)

UPCOMING EVENTS

FEB 21-26 AFGC/SRM Conference, Omaha, NE

MAR 4 19th KY Alfalfa Conference, Cave City

APR 28-30 Kentucky Grazing School, Eden Shale

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