

4-1-2002

Forage News [2002-04]

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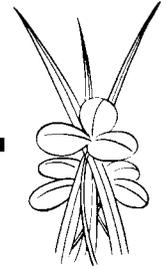
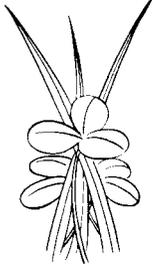
Department of Plant and Soil Sciences, University of Kentucky, "Forage News [2002-04]" (2002). *Forage News*. 191.

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FORAGE NEWS



In this month's issue:

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April 2002

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

2002 HAY WINNERS RECOGNIZED

The best alfalfa and alfalfa-grass hay producers were recognized at the 22nd Alfalfa Conference at Cave City. The winners are listed by month and class below. These producers produced the lots of hay with the highest combined total of crude protein and relative feed value based on samples taken by the Kentucky Department of Agriculture hay testing program. The Champion Alfalfa award was won by John Nowak, while the Champion Alfalfa-Grass overall winner was Bill Curtsinger. Congratulations to these winners.

NAME	MONTH	CLASS
John Nowak	Oct/Nov	Alf
Bill Curtsinger	Oct/Nov	Alf/Grass
John McCoy	Sept	Alf
Ed Bell	Sept	Alf/Grass
Joe Hobbs	Aug	Alf
John Nowak	Aug	Alf/Grass
Michael Smith	July	Alf
David Mercker	July	Alf/Grass
Eddie Hobbs	June	Alf
Ben Trimble	June	Alf/Grass
Bittersweet Inc.	May	Alf
Charles Daily	May	Alf/Grass

SPRING GRAZING SCHOOL IS APRIL 17-18 IN STANFORD

The spring 2002 Grazing School is to be held on April 17-18 in Stanford at the Lincoln County Extension Office. Your registration fee of \$100.00 includes all materials, grazing manual, breaks, and selected meals.

Registration fee must be paid to hold a place in the grazing school. Enrollment in this grazing school is limited to the first 45 who register. The school is open to all.

To reserve your space in the school, call Ken Johnson at 270 487 6589 x3. Your check holds your registration. Make checks payable to: **Kentucky Forage and Grassland Council** and send to: **Ken Johnson, NRCS, 1410 N. Main, Tompkinsville, KY 42167.**

DISTANCE CATTLE TRAVEL TO WATER AFFECTS PASTURE UTILIZATION RATE

Location of watering facilities on grazing lands has been widely recognized as a factor controlling grazing distribution by ruminants. In rangeland environments, the typical recommendations are that animals travel no farther than 2 miles to water on flat topography and no more than 1 mile in rough country. In humid temperate environments, less attention has been paid to water location and its effects on grazing distribution. A study was conducted at the Forage Systems Research Center to determine the effect of distance traveled to water on pasture utilization rate by beef cow-calf pairs. Ten acre pastures with length width ratios of approximately 1 versus 4 were compared for uniformity of grazing distribution. The pastures more nearly square were grazed uniformly in all areas with a mean individual grazing period utilization rate of approximately 35% for a single grazing period. Rectangular pastures were more variable in grazing distribution with utilization rate ranging from between 40 and 50% at the front 100 to 200 ft of the pasture to less than 20% when distance from water exceeded approximately 1100 ft.

The final recommendation was that pasture systems be designed to provide water sources within 600 to 800 feet of all areas of the pasture for optimum uniformity of grazing. (SOURCE: J. Gerrish, Forage Systems Research Center, University of Missouri)

DISK VS. SICKLEBAR MOWERS

“We had the following data in Forage News April 2001; however, we want to share it in this month’s issue because there were several questions during our recent Alfalfa Conference.”

This past year we received many questions concerning disk vs. sicklebar mowers. The following data was supplied by Dr. Dan Undersander from the University of Wisconsin.

Alfalfa stand and yield after two years of mowing with either sicklebar or disk mowers at Arlington, WI.		
	Sicklebar Mower	Disk Mower
Yield (last two cuttings, t/a)	2.94	2.98
Stand (plants/sq. ft.)	6.2	6.2

IMPORTANCE OF ALFALFA

Alfalfa, called the "Queen of the Forages," is the fourth most widely grown crop in the U.S. behind corn, wheat and soybeans and double the cotton acreage. Although there is no published value for alfalfa hay the estimated value is \$8.1 billion. There are 23.6 million acres of alfalfa cut for hay with an average yield of 3.35 tons per acre. The estimated value of alfalfa hay is \$102.50 per ton. Alfalfa meal and cubes are exported to other countries with a value of \$49.4 million to the U.S. economy. Alfalfa is sometimes grown in mixtures with forage grasses and other legumes. The acreage of all hay harvested including alfalfa per year is 60.8 million with an estimated value of \$13.4 billion. When the value of alfalfa as a mixture with other forages is considered the acreage and value of hay is approximately equal to wheat and soybeans.

Alfalfa seed is primarily grown in the northwestern areas of the U.S. primarily in the states of California, Idaho, Nevada, Oregon, Wyoming, and Washington. The approximate yield of alfalfa seed in 1999 for the U.S. is 115 million pounds, with average price of \$190 per 100 pounds of seed, thus the estimated value of alfalfa seed is \$218.5 million. A fringe benefit to the production of alfalfa seed is the production of honey from bees. In the U.S., \$147.7 million dollars worth of honey is produced each year.

Alfalfa is also important due to its high biomass production. The record yield of one acre of alfalfa is 10 tons/acre (22 Mg/ha) without irrigation and 24 tons/acre (54Mg/ha) with irrigation. Alfalfa is a widely adapted crop, energy-efficient and an important source of biological nitrogen fixation. The average acre of alfalfa will fix over 200 lbs of nitrogen per year, thus reducing the need to apply expensive nitrogen fertilizers.

One of the most important characteristics of alfalfa is its high nutritional quality as animal feed. Alfalfa contains between 15 to 22% crude protein as well as an excellent source of vitamins and minerals. Specifically, alfalfa contains vitamins A, D, E, K, U, C, B1, B2, B6,

B12, Niacin, Panthothanic acid, Inocitole, Biotin, and Folic acid. Alfalfa also contains the following minerals: Phosphorus, Calcium, Potassium, Sodium, Chlorine, Sulfur, Magnesium, Copper, Manganese, Iron, Cobalt, Boron, and Molybdenum and trace elements such as Nickel, Lead, Strontium and Palladium. Alfalfa is also directly consumed by humans in the form of alfalfa sprouts. According to the International Sprout Growers there are approximately \$250 million dollars worth of sprouts sold in North America. Alfalfa juice is used in some health food products.

Alfalfa hay is used primarily as animal feed for dairy cows but also for horses, beef cattle, sheep, chickens, turkeys and other farm animals. The value of milk, meat, wool and all other animal products is \$132 billion, thus the total value of animal products plus the value of hay reach the \$145 billion level. This far exceeds the combined value of all other high value crops.

In addition to the traditional uses of alfalfa as an animal feed, alfalfa is beginning to be used as a bio-fuel for the production of electricity, bioremediation of soils with high levels of nitrogen, and as a factory for the production of industrial enzymes such as lignin peroxidase, alpha-amylase, cellulase, and phytase.

(Source: <http://www.naaic.org/Alfalfa/Importance.html>)

ALFALFA ROOTING DEPTH

Root penetrating power of alfalfa is equaled only by the desert sagebrush of the western plains. Under favorable conditions of soil and climate roots will penetrate to a depth of five feet in six months. Many instances are recorded of roots having been dug or otherwise exposed, having length and penetration exceeding sixty feet. F.D. Coburn in 1902 cited an observation by C. W. Irish who was USDA Chief of "Irrigation Injury". Mr. Irish had opportunity to observe alfalfa rooting depth while making a survey of a mining tunnel in Nevada. "The tunnel was driven into a rock known to miners as 'rotten porphyry'. It was much shattered and seamed, and through the crevices in the rock in the roof of the tunnel water came out drop by drop; through the same crevices came roots of plants which were found to be alfalfa, growing from an old field over the tunnel through a depth of soil and rock of 129 feet". While extreme examples of alfalfa root penetration are uncommon in literature, penetration of active roots to a depth of 8 to 12 feet are common. (SOURCE: Excerpted from G. D. Lacefield Ph.D. Thesis, 1974)

UPCOMING EVENTS

- APR 17-18 Spring Grazing School, Lincoln County
- JUL 14-16 American Forage & Grassland Conference, Minnesota
- JUL 18 UK All Commodity Field Day, Princeton

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Extension Forage Specialists
 April 2002