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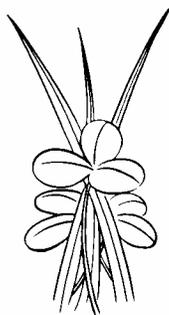


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FORAGE NEWS

February 2003

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

CAVE CITY – HERE WE COME

The 23rd Annual Kentucky Alfalfa Conference will be held February 20, 2003 at the “newly remodeled” Cave City Convention Center. The expanded space will permit more exhibits and breakout sessions in the afternoon. World renowned alfalfa breeder, Dr. Jim Moutray, will be our keynote speaker along with Mr. Alfalfa, Mr. Warren Thompson. In addition, the 23rd Conference will feature our own Jason Sandefur, who is the current National Forage Spokesman. Other speakers include specialist from the University of Kentucky and Kentucky Department of Agriculture personnel. Alfalfa Awards will be presented at lunch. In addition, we will recognize 2002 Hay Award Winners. There will also be an expanded Silent Auction at this years’ conference. The registration fee of \$15 will cover lunch, refreshment breaks, proceedings, and other educational materials.

- 8:00 Registration, Visit Exhibits, Silent Auction
8:45 Welcome – *Dr. Mike Barrett*
8:50 Alfalfa Quality: What is it? – *Dr. Garry Lacefield*
9:20 Advances in Developing BETTER Alfalfa Varieties – *Dr. Jim Moutray*
10:00 Break
10:30 Alfalfa for Summer Grazing – *Mr. Jason Sandefur*
11:00 Alfalfa: Queen of the Forage Crops-Reflections After Sixty Years Experience – *Mr. Warren Thompson*
11:30 Alfalfa Hay and MRLS: What we Know After One Year of Testing – *Dr. Jimmy Henning*
12:00 Lunch, Hay Awards, Visit Exhibits, Silent Auction
1:00 Alfalfa Awards and Silent Auction Results
1:15 Breakout Sessions:
1. Weed & Disease Management – *Dr. Paul Vincelli & Dr. J.D. Green*
2. Alfalfa Haylage & Silage – *Dr. Mike Collins*
3. Making-Testing-Marketing Alfalfa Hay – *Dr. Jimmy Henning & Mr. Allen Johnson*
2:00 Break
2:15 Repeat Breakout Sessions
3:00 Adjourn

FORAGES AT KCA

Our thanks to all who attended and participated in the 8th Forages at KCA Symposium held in Bowling Green January 10. We were pleased with record attendance at the 8th Forage Symposium and the 30th Kentucky Cattlemen’s Convention.

HARD SEED IN ALFALFA

Questions concerning hard seed in alfalfa are becoming more important with increased seed production in the northwestern United States where seed tends to have higher levels of hard seed. To answer questions about hard seed, studies were initiated at three sites (Arlington, WI, West Salem, WI, and Napier, IA) to gain information on the effect of hard seed on speed of germination and on yield during seeding year. Each year four varieties with three levels of hard seed were planted at the three sites. The average hard seed for each of the three levels is shown in table 1. It is interesting to note that the percentage of hard seed declined from fall to spring. The decline of hard seed varied with lot but generally showed greatest declines were initial hard seed levels were higher.

Table 1. Change in Hard Seed Percentage Over Winter.

Hard Seed Level	Fall Germination	Spring Germination
Low	10.5	8.4
Medium	25.4	15.8
High	43.9	30.6

The most important question is: did hard seed levels affect alfalfa yield? In this study, all plots were seeded at 12 lbs seed/a regardless of the level of hard seed. As shown in table 2 below, hard seed had no effect on yield in either the seeding year or the year after.

Table 2. Effect of Hard Seed on Alfalfa Yields.

Hard Seed Level	1992 Seeding		1993 Seeding
	1992 Harvest	1993 Harvest	1993 Harvest
	----- tons/acre -----		
High	1.85	4.72	2.04
Medium	1.85	4.74	2.03
Low	1.88	4.78	2.05

In summary, up to 40% hard seed had no effect on germination or yield of alfalfa. (SOURCE: Dan Undersander, Ken Albrecht, Nick Degenhart, Jim Moutray, Mark McCaslin, <http://www.uwex.edu/ces/forage/pubs/hardsd.htm>)

LARGE BALER RESEARCH AND STORAGE IDEAS

In many areas of Wisconsin, the first cutting of alfalfa forage resulted in excellent yields, filling or nearly filling the silage storage structures on many dairy farms. Therefore many alfalfa producers are looking to harvest their second cutting of alfalfa as intermediate (about 30 inches by 30 inches by 5 feet) square bales. This is an excellent method for handling dry alfalfa hay, especially if it is going to be marketed.

Because the intermediate square bales are denser than small square and large round bales, the recommended storage moisture is two to three percent less than small rectangular bales. Recommended bale moisture levels for storage with minimal losses may be difficult to attain in humid Wisconsin weather conditions. Harvesting large square bales above 17 percent moisture will require a preservative for good bale storage or plastic wrap may be used to maintain forage quality.

Preservative Research Results (Wisconsin) – In 1997 and 1998, Shinners studies preservatives and ventilation holes for intermediate square bales at moistures from 14 to 28 percent. The preservatives were propionic acid and a bacterial inoculant. Ventilation holes of three and five inches in diameter were two treatments evaluated for reducing dry matter loss and maintaining forage quality. Four different trials or cuttings were evaluated. Following are his findings:

- bales treated with propionic acid maintain higher moisture during storage
- propionic acid produced less heating at the higher moisture content
- ventilation holes in the bales did not produce less heating
- none of the methods reduced dry matter loss
- dry matter loss was less than 4% when baling at moistures below 16%.

Bale Wrapping Research Results (Wisconsin) – At the Lancaster Agricultural Research Station, plastic wrapping of intermediate bales was evaluated for bales at 21 to 40% moisture during 1997. Undersander and others studies the effect of time between baling and wrapping and the number of plastic layers. Following are their results:

- bales (800-1200 lbs) need to have 2 to 3% less moisture at baling than small squares
- bales should be wrapped within 24 hours after baling
- plastic wrapping bales at 21 to 38% moisture adequately preserved them
- four layers of 1.5 mil plastic (50% overlap, twice over) was adequate.

Bale Silage Storage Using Plastic (Wisconsin) – In a study conducted in the late 1980's, Straub and others evaluated plastic covers, bags and wrap with round bale silage. The plastic covers were used to protect the bales stacked three high in a triangular formation. Bale bags were designed to enclose one bale each. Also, the use of propionic acid was evaluated. They found:

- bale wrapping produced the most reliable results
- a preservative is needed with bale bags and covers

Limited research results are available on bale tubes and line wrapping. The key to their success will be their ability to seal the bales and prevent any air from getting inside the plastic.

Preservative recommendations – Some preservatives that have been used are anhydrous ammonia, inoculants and buffered propionic acid. Although anhydrous ammonia costs less, handling and safety problems make propionic acid a better preservative. The recommended application rates for

large square bales are listed in Table 1 where the propionic acid concentration is 75 to 80 percent. If the acid concentration is less, more chemical will need to be added.

Moisture Content	Rate (%)	Rate (lbs/ton)	Cost (\$/ton)
17-19	0.4	8	\$7.60
20-22	0.6	12	\$11.40
23-24	0.8	16	\$15.20

If the solution contains other acids such as acetic or citric acid, it will be less effective than a solution containing only propionic acid. Acetic acid is considered to be about one third as effective as propionic acid. Therefore, you would need three times more acetic acid to have the same effect as the recommended rate of propionic acid. For bacterial inoculants, the manufacturer's recommendations should be followed.

The estimated cost for the acid solution is about \$0.95 per pound. This is based on a 55 gallon drum costing \$450. The cost of the spraying system including a pump, take, valve, nozzle and other miscellaneous parts should be added to the values in Table 1 but should be less than \$1.00 per ton. Costs will be less when the acid is purchased in the off season in large quantities.

The key to selecting the correct application rate will be determining the forage moisture content. An accurate method must be used and good representative samples must be obtained. There can be a large variation in forage moisture in the windrow so sampling will be very important. (SOURCE: Ronald T. Schuler, Univ. of Wisconsin, <http://www.uwex.edu/ces/forage/pubs/BIGBALE1.htm>)

PASTURE RENOVATION

Just a reminder that pasture renovation time is upon us. We can't over-emphasize the need for selecting the best varieties to seed and the purchase of high quality seed. With red clover, selecting a "better" variety over the average "common" resulted in a return on investment of 496 over three years.

HEART OF AMERICA GRAZING CONFERENCE

Approximately 300 people from several states attended the 2nd Heart of America Grazing Conference held in Hannibal, Missouri, January 22 and 23. This conference is a cooperative educational event organized by personnel from Kentucky, Missouri, Indiana, Ohio and Illinois. The conference will rotate among the five states with the next (3rd) being in Indiana.

UPCOMING EVENTS

FEB 20	23 rd Kentucky Alfalfa Conference, Cave City
MAR 11	Central Kentucky Alfalfa Conference, Lexington
APR 22-23	Kentucky Grazing School, Bowling Green
APR 26-30	American Forage & Grassland Conference, Lafayette, Louisiana
JUN 12	UK Agronomy Field Day, Lexington
JUL 17	UK All Commodity Field Day, Robinson Station, Quicksand
JUL 24	South Central Kentucky Agriculture Field Day, Bowling Green


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