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Forage News [1999-07]

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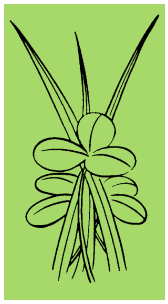
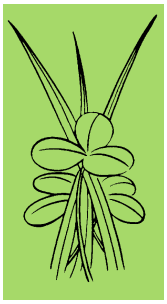
UNIVERSITY OF KENTUCKY
COLLEGE OF AGRICULTURE
Lexington, Kentucky 40546

COOPERATIVE EXTENSION SERVICE

FORAGE NEWS





In this month's issue:

July 1999

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

FORAGE/BEEF FIELD DAY

The annual field day co-sponsored by the Kentucky Forage and Grassland Council and the Kentucky Cattleman Association was a big success. Triple W Farms in Crittenden County had lots of good things for cattlemen to see and the weather was perfect. About 150 people saw rotational grazing systems (forage, water and cattle management), baled silage making, use of filter fabric for high use areas and ideas on adding efficiency to the beef cattle operation.

Special thanks are due to Triple W Farms, the Crittenden County group that handled local arrangements, speakers, sponsors, Pennyrile Ag Agents and others who worked to help make the field day a success. *(Monroe Rasnake)*

UK FORAGE STOPS HIGHLIGHT RESEARCH

Expect to learn the latest on forage research at the 1999 UK Agronomy and Horticulture Field Day. In keeping with the theme of Plant Science for the Next Decade, the forage field day stops will be:

1. The next decade of red clover varieties (Norman Taylor and Robert Spitaleri).
2. Making haylage when the sun doesn't shine (Mike Collins).
3. Overgrazing new varieties of fescue, orchardgrass, and alfalfa (Jimmy Henning and Chuck Dougherty)?
4. Kentucky born and bred forage grasses: Can we build one for you (Tim Phillips)?

The field day is July 15 at the Spindletop Research Farm, located just west of the intersection of Ironworks and Newtown Pike (exit 115 on I-75/64). The field day will begin at 8:15 AM and will conclude at 3PM. Lunch will be available for purchase at the field day.

EDEN SHALE RESEARCH HIGHLIGHT

Aphanomyces root rot (ARR) was definitively proven to be a problem at the Eden Shale farm in northern Kentucky during the spring of 1996. Seeding in April, the site was exposed to very heavy rains (almost 10 inches in April and May). Alfalfa exhibited the yellowing and stunting characteristic of ARR, and there were clear varietal differences (Table 1). Varieties with genetic resistance to ARR had better stand vigor in May and November, and had thicker stands in November of 1996.

Based on this study and another study at Princeton, UK variety recommendations for alfalfa now recommend a minimum 'R' resistance level to ARR.

Aphanomyces root rot resistance ratings, vigor and percent stand data for alfalfa varieties sown April 18, 1996 at the Eden Shale Farm in Owen County, Kentucky.

VARIETY	Aphanomyces Resistance	Stand Vigor 5/ 30/96	Stand Vigor 11/1/96	Percent Stand 11/1/96
WL324	HR	3.08	4.00	87.5
DEPEND+EV	R	3.08	4.50	87.5
TMF-GENERATION	R	3.17	4.50	85
LEGACY	R	3.58	4.75	85
AFFINITY+Z	R	3.25	4.00	85
DK133	R	3.75	4.50	85
SUPERCUTS	R	2.58	4.25	83.75
DK127	HR	3.25	4.50	82.5
SARANAC-AR	-*	2.25	3.75	80
CHOICE	R	2.75	4.00	75
RUSHMORE	HR	2.75	3.75	73.75
645	MR	2.75	3.25	72.5
APOLLO	S	1.50	4.00	68.75
WL252HQ	LR	1.25	3.75	63.75
631	MR	1.17	4.00	61.25
FORTRESS	-	1.25	3.75	61.25
GEM	S	1.00	3.25	52.5
BUFFALO-B	-	0.92	2.75	47.5
ARC	-	0.67	2.50	41.25
BUFFALO-A	-	0.58	1.50	13.75
MEAN		2.23	3.76	69.63
CV, %		40.13	18.43	24.73
LSD, 0.05		1.27	0.98	24.38

VIGOR RATING SCALE: 0=POOR 5=EXCELLENT
* = Data on ARR not known

(Editor's Note: This article is one of a series designed to highlight Eden Shale forage and beef research. A field day is planned for the Eden Shale farm in the early summer of 2000.)

GRAZING MANAGEMENT FOR EASTERN GAMAGRASS

Eastern gamagrass (*Tripsacum dactyloides* (L.) L.) is

a large warm-season bunchgrass native to the Southern Great Plains and Southeastern U.S. Eastern gamagrass has the potential for high forage production and is palatable to beef cattle. These characteristics make eastern gamagrass attractive for livestock production but research on grazing management is limited. Most interest has been in the use of eastern gamagrass as a summer forage for growing beef cattle. Poor grazing management will cause the loss of eastern gamagrass from mixed stands and reduce productivity in monocultures. Because the grass is coarse but produces rapid regrowth, advisors generally suggest some type of rotational grazing. The recommended minimum stubble height for grazing or haying is 115-20 cm with rest periods of 45 days. Rest periods of 30 days results in lower forage production. Stocking rates range from 165 AUD/ha on an upland soil in western Oklahoma to 419 AUD/ha in western Arkansas. Compared to continuous season-long grazing, intensive-early-stocking increased stocking rates from 273 to 419 AUD/ha and beef production from 218 kg/ha to 430 kg/ha without reducing gain per head. Growing beef cattle grazing eastern gamagrass will gain 1.1 to 1.2 kg/head/d in the early portion of the growing season and 0.2 to 0.6 kg/head/d in the later portion of the growing season. One advantage of eastern gamagrass is that is begins growth earlier in the spring than many warm-season grasses. *(SOURCE: Robert L. Gillen, ABSTRACTS AFGC/SRM, Vol. 52 SRM/Vol. 8 AFGC, Feb. 1999, p. 23)*

DOES NUMBER OF PLANT SPECIES IN A PASTURE MATTER

Biodiversity is alive and well on intensively grazed pastures in the northeast according to research reported by scientists at the USDA-ARS Pasture Systems and Watershed Management Research Lab in University Park. Ben Tracy, a Plant Ecologist, and Matt Sanderson, a Research Agronomist, surveyed the plant diversity of 73 pastures in seven northeast states over the 1997 and 1998 summers. The researchers found that pastures were more diverse than expected, averaging 32 plant species per pasture. Several weed species were found, but the weeds were a small proportion of the pasture area. A typical pasture had seven different grass species and four different legume species. The researchers suggest that this forage diversity is in the range that will benefit farmers both ecologically and economically.

Diversity refers to the number of different plant species in a particular area. Farmers might benefit from having a high diversity of forage plants (e.g., grasses and legumes) in their pastures. A diverse pastures may reduce the spread of pests, improve forage yields over the growing season and increase pasture resistance to disturbances like drought. For example, maintaining species in pasture that are most productive during the 'summer slump' helps to even out late season forage yields.

However before researchers make any recommendations on how to manage pastures for diversity, they must first learn how diverse these northeast pastures really are. Maybe most pastures in the northeast are sufficiently diverse that they warrant no additional manipulations? With this general objective in mind, Tracy and Sanderson set out in 1997 and 1998 to survey the diversity of plants across various farms in the northeast. In these surveys, they measured two things: 1) the diversity of plants that exist in soil seed bank because these plants are important in filling gaps often creased in pastures and 2) the diversity of aboveground vegetation.

In the seed bank study, the researchers found that most of the existing seed in pasture soils was from bluegrass and white clover. The seed bank of these species plays an important role in pasture management by germinating in and filling bare spots or "gaps" in pastures.

The total number of plant species aboveground in pastures ranged from 16 to 49 (average of 32). On most pastures, bluegrass, white clover, dandelion, and broadleaf plantain accounted for majority of plant cover. Overall pastures were more diverse than researchers anticipated and they suggested that the diversity of most northeast pastures is in the range that will benefit farmers both economically and economically. A trade-off exists between benefits of having a diverse pasture and the cost of managing highly diverse, complex mixture. Future research by the scientists will address the productivity, economics, and management of plant diversity in pastures. *(SOURCE: Pennsylvania Forage & Grassland News, Vol. 9, No. 3, Summer 1999)*

SWARD COMPOSITION CHANGES IN RESPONSE TO STOCKING RATE AND METHOD

Both stocking rate (SR) and stocking method (SM) have been reported to influence botanical composition of pasture. This three year study evaluated floristic changes in mixed cool-season grass-legume pastures either continuously (CS) or rotationally (RS) stocked with yearling steers at four stocking levels. Stocking rates were 300, 600, 900, or 1200 kg-liveweight/ha at turnout with steers having an initial weight of 260 kg. Flexible rotational management in a 12-paddock system was utilized with grazing periods of 1-3 days and 11-33 day rest periods. Species composition was measured three times annually using step-point method with 24 transects per 4-ha pasture and 50 pounds per transect. Total grass component for all treatments declined during Year 1 (Y1), was stable during Year 2 (Y2), and increased in Year 3 (Y3). The SRxSM interaction was significant with percent grass increasing in both CS 300 and 1200 in Y3 while RS 300 and 1200 remained unchanged. Legume percentage increased in both CS and RS during Y1 and Y2 as SR increased. In Y3 legume percentage continued to increase in RS 600, 900, and 1200 while legume percentage declined in CS 900 and 1200. Red clover (Trifolium pratense L.) accounted for most of the legume increase in RS 1200 while white clover (Trifolium repens L.) accounted for most legume increase in CS 1200. Weed presence decreased as stocking rate increased regardless of SM. Our results indicate that SM has a greater influence on the direction of floristic change while SR determines the degree of change. *(SOURCE: Jim Gerrish, ABSTRACTS AFGC/SRM, Vol. 52 SRM/Vol. 8 AFGC, Feb. 1999, p. 23)*

UPCOMING EVENTS

JULY 15	Agronomy Field Day, Spindletop Farm, Lexington
JULY 22	All Commodity Field Day, UK Robinson Experiment Station, Quicksand
OCT 12-14	KY Grazing School, U.K. Research & Education Center, Princeton

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