

TALL FESCUE AND ORCHARDGRASS TRIAL FOR WINTER STOCKPILING

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Background

Tall fescue in Eastern and Southern Ohio is the predominate forage available for grazing. This forage has a poor reputation as a summer forage due to the presence of the endophyte fungus which greatly reduces animal performance. Farmers are reluctant to attempt eradication of endophyte infected (E+) tall fescue and reseed with new cultivars of endophyte free (E-) tall fescue. Seeding failures and poor durability are the most frequently cited reasons for not trying the new cultivars. Tall fescue is an important species for winter grazing systems and a critical forage for livestock to graze during the months of December thru February. Research indicates that tall fescue retains its feed value much better than other species during the winter months. Recent trials at the Jackson Branch, OARDC, indicate that orchardgrass cultivars have retained quality and yield as good as E+ tall fescue. In addition, several E- tall fescue cultivars have been shown to have better palatability, yield and quality than E+ tall fescue.

Since the discovery of the endophyte fungus on tall fescue, much work has been conducted on tall fescue stands that are endophyte free or low in infection levels. Much work has been conducted in the Southeast U.S. near the southern limit of tall fescue's growing range, but information is limited in the North Central region. In addition, orchardgrass has not been considered for stockpiling, but preliminary results from a study at the OARDC Jackson Branch indicates potential for stockpiling for at least early winter grazing.

Objectives

1. To determine if endophyte free tall fescue and orchardgrass is well suited for winter stockpiling in this region.
2. To determine if some cultivars are superior to others for ability to stockpile forage and retain quality for winter grazing.
3. Compare orchardgrass and endophyte free fescue to endophyte infected fescue for yield, quality and persistence.
4. Determine animal preference during a late July/early August grazing (after second cutting and prior to stockpiling).

**Forage Cultivar Plots
EORDC, Caldwell, Ohio**

Procedure

A predominately fescue sod was killed with glyphosate in May 1998. A smother crop of a summer annual forage was planted. Fescue, perennial ryegrass and orchardgrass were broadcast and cultipacked into a prepared seed bed. The seeding was done on September 4, 1998.

Cultivars to be evaluated are: Kentucky 31 endophyte infected fescue (control); Festorina, Fawn, Enforcer, Fuego, endophyte free fescue; and Benchmark, Haymaker, Stargrazer orchardgrass and BG34 perennial ryegrass.

Each cultivar is replicated four times utilizing randomized complete block design. Soil test values pH = 7.4, P = 10 ppm, K = 79 ppm, CEC = 18. Fertilized in two applications totaling 125 lb. N/ac, 50 lb P/ac, and 265 lb K/ac. Plots are eight feet wide and twenty feet in length.

Results			
Variety	28 – May	10 – August	1999 Total
~~~~~Tons Dry Matter/Acre ~~~~~			
Festorina ^a	2.52	0.99	3.51
Stargrazer ^b	2.60	0.90	3.50
Feugo ^a	2.30	1.11	3.41
KY 31 ^c	2.39	0.84	3.23
Enforcer ^a	1.95	1.27	3.22
Benchmark ^b	2.22	0.77	2.99
Fawn ^a	2.20	0.74	2.94
Haymaker ^b	1.99	0.74	2.73
BG 34 ^d	2.04	0.50	2.54
Mean	2.25	0.87	3.12
LSD 0.05	0.43	0.35	0.53
CV %	12.99	27.87	11.72

^a Endophyte Free Fescue

^b Orchardgrass

^c Endophyte Infected Fescue

^d Perennial Ryegrass

14 lambs, average starting weight 86 pounds were allowed to graze their choice of these forages for a period 25 days in November and December. The lambs were finished on pasture and fed a corn/soybean meal concentrate in addition to free access to the plots. Orchardgrass was the preferred forage. The lambs rotated to the Orchardgrass plots and removed all available leaf tissue before eating any of the other grasses. Observations of grazing revealed no noticeable preference between the fescue cultivars, perennial ryegrass or KY 31 infected.

## Forage Cultivar Research Plots at EORDC

Planted September 4, 1998.

Seeding rate -- 30 lb/ac

Planting Method - Broadcast followed by culti-packer.

Fertility - According to soil test. (Clif has the numbers)

Fescue Cultivars used:      Fawn  
                                         Enforcer  
                                         Feugo  
                                         Festorina  
                                         KY31

Perennial Ryegrass:      BG34

Orchardgrass:              Benchmark  
                                         Stargrazer  
                                         Haymaker

Plot #	Raw Weight		Sample Wet (oz.)	Sample Dry (g)	DM/Plot (lb)	DM/ac (lb)	Aug 10
	Lb.	oz.					
1-1	6	14	8.00	66.00	0.84	917.40	
1-2	5	9	5.00	98.00	1.21	1317.27	
1-3	6	13	5.00	82.00	1.68	1830.04	
1-4	6	7	5.00	68.00	1.20	1302.13	
1-5	7	13	6.00	62.00	1.34	1461.80	
1-6	8	5	6.00	70.00	1.73	1884.93	
1-7	9	9	6.00	72.00	2.28	2478.81	
1-8	9	11	8.00	90.00	2.21	2403.79	
1-9	9	2	9.00	88.00	1.73	1879.52	
2-1	10	0	7.00	72.00	2.08	2268.75	
2-2	6	2	6.00	86.00	1.13	1234.41	
2-3	8	15	7.00	68.00	1.66	1805.41	
2-4	6	3	6.00	76.00	1.03	1123.21	
2-5	5	12	5.00	68.00	0.91	986.69	
2-6	6	5	4.00	50.00	1.04	1133.90	
2-7	9	3	6.00	68.00	2.04	2219.26	
2-8	6	8	4.00	68.00	1.57	1714.67	
2-9	10	3	6.00	68.00	2.41	2627.40	
3-1	6	15	8.00	78.00	1.03	1122.90	
3-2	7	4	6.00	84.00	1.65	1797.13	
3-3	7	4	4.00	64.00	1.84	2008.21	
3-4	7	0	4.00	76.00	2.08	2264.36	
3-5	6	13	5.00	66.00	1.32	1434.36	
3-6	5	8	7.00	86.00	0.71	774.21	
3-7	9	13	10.00	94.00	1.88	2044.47	
3-8	9	3	8.00	96.00	2.17	2362.44	
3-9	7	14	7.00	76.00	1.46	1590.96	
4-1	10	14	7.00	96.00	3.27	3556.27	
4-2	6	3	6.00	76.00	1.01	1104.47	
4-3	10	15	8.00	66.00	1.94	2110.02	
4-4	5	2	6.00	78.00	0.60	651.71	
4-5	8	13	7.00	68.00	1.62	1761.91	
4-6	8	9	6.00	62.00	1.63	1774.09	
4-7	7	0	5.00	74.00	1.61	1758.54	
4-8	8	13	8.00	90.00	1.91	2080.67	
4-9	9	2	8.00	82.00	1.84	1998.71	

Cultivar	Avg Yield	Avg Yield
	DM/Ac	DM/Ac
	28-May-99	10-Aug-99
KY 31	4786.45	1677.89
Stargrazer	5199.51	1804.11
Benchmark	4434.94	1539.21
Festorina	5040.91	1971.62
Fawn	4400.37	1471.88
BG 34	4088.05	994.40
Feugo	4590.07	2225.51
Haymaker	3984.69	1479.60
Enforcer	3908.32	2531.98

# Plot Map

## Forage Cultivar Trials EORDC

4-9 KY 31
4-8 Stargrazer
4-7 Benchmark
4-6 Festorina
4-5 Fawn
4-4 BG 34
4-3 Feugo
4-2 Haymaker
4-1 Enforcer

2-9 Stargrazer
2-8 Haymaker
2-7 Festorina
2-6 Benchmark
2-5 KY 31
2-4 Fawn
2-3 Enforcer
2-2 BG 34
2-1 Feugo

3-9 Stargrazer
3-8 Enforcer
3-7 Feugo
3-6 BG 34
3-5 Benchmark
3-4 KY 31
3-3 Festorina
3-2 Haymaker
3-1 Fawn

1-9 Fawn
1-8 Enforcer
1-7 Feugo
1-6 Festorina
1-5 KY 31
1-4 Haymaker
1-3 Benchmark
1-2 BG 34
1-1 Stargrazer

To  
House  
&  
Shop

To Bull  
Barn