


Forage Crop Variety Trials in Illinois-2011



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Performance Information Provided by

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	
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DATA ALSO AVAILABLE AT: <http://vt.cropsci.uiuc.edu>

This circular was prepared by D. K. Joos, Senior Research Specialist; R. W. Esgar, Agronomist; B. R. Henry Research Specialist; and C.A. Smyth, Manager of Systems Services.

PERFORMANCE OF COMMERCIAL FORAGES IN ILLINOIS

THE UNIVERSITY OF ILLINOIS commercial forage testing program has been testing public and private forages for over 60 years. The initial purpose was to evaluate the many public varieties available, today public varieties are far out numbered by private varieties. This year 20 seed companies are participating in the 2011 trials.

The purpose of this commercial forage testing program is to provide unbiased, objective, and accurate testing of all varieties entered. The tests are conducted on as uniform a soil as is available in the testing area. Small plots are used to reduce the chance of soil and climatic variations occurring between one variety plot and another.

The results of these tests should help you judge the merits of varieties in comparison with other private and public varieties. Because your soils and management may differ from those of the test location, you may wish to plant variety strips of the higher-performing varieties on your farm. The results printed in this circular should help you decide which varieties to try.

TEST PROGRAM

Selection of entries Forage producers in Illinois and surrounding states were invited to enter varieties in the 2011 Illinois forage performance trials. Entrants were required to provide seed in a commercially available container to the University of Wisconsin for distribution to other public testing programs. This is to ensure performance is not affected by seed source and to avoid each entrant the cost of sending a commercial bag of seed to each program.

To help finance the testing program, a fee of \$450 per location per 4 years was charged for each variety entered by the seed producer. Most of these varieties are commercially available, but some experimental varieties were also entered. A total of 54 varieties were tested in 2011.

Number and location of tests In 2011, tests were conducted at 1 location (see map on pg. 4).

Field plot design Entries of each test were replicated four times in a randomized complete block. Plot size was 23 feet by 3 feet and end trimmed at each harvest to obtain a 19 foot long plot.

Fertility and weed control All test locations were managed at a high level of fertility for each crop. Herbicides were used at all test locations for weed control.

Method of planting and harvesting All trials were seeded with a five row seeder modified to accommodate small plot seeding. Plots were seeded at 18 pounds per acre. Harvests were taken with a custom built flail chopper equipped with electronic data gathering equipment.

PERFORMANCE DATA

Yield Forage yield is reported in tons dry matter per acre. Yields were converted to a dry matter basis by estimating percent moisture within each trial.

SUGGESTIONS FOR COMPARING ENTRIES

It is impossible to obtain an exact measure of performance when conducting any test of plant material. Harvesting efficiency may vary, soils may not be uniform, and many other conditions may produce variability. Results of repeated tests are more reliable than those of a single year or a single-strip test. When one variety consistently out yields another at several test locations and over several years of testing, the chances are good that this difference is real and should be considered in selecting a variety.

As an aid in comparing alfalfa varieties within a single trial, certain statistical tests have been devised. One of these tests, the least significant difference (L.S.D.), when used in the manner suggested by Carmer and Swanson¹ is quite simple to apply and is more appropriate than most other tests. When two entries are compared and the difference between them is greater than the tabulated L.S.D. value, the entries are judged to be "significantly different."

The L.S.D. is a number expressed in tons dry matter per acre and presented following the average yield. An L.S.D. of 5% is shown. Add the L.S.D. value to the trial mean. Every variety with a greater yield than the resulting number is "statistically better than average". Consider the merits of the varieties in this group when making varietal selections.

To make the best use of the information presented in this circular and to avoid any misunderstanding or misrepresentation of it, the reader should consider an additional caution about comparing entries. Readers who compare entries in different trials should be extremely careful, because no statistical tests are presented for that purpose. Readers should note that the difference between a single entry's performance at one location and its performance at another is caused primarily by environmental effects and random variability. Furthermore, the difference between the performance of entry A in one trial and the performance of entry B in another trial is the result not only of environmental effects and random variability, but of genetic effects as well.

¹Carmer, S.G. and M.R. Swanson. "An Evaluation of Ten Pairwise Multiple Comparison Procedures by Monte Carlo Methods." Journal of American Statistical Association 68:66-74. 1983.

2011 TEST FIELDS

Urbana

Location: University of Illinois, Crop Sciences Research and Education Center, Champaign county, east central Illinois.

Cooperators: Robert Dunker; agronomist, Jeff Warren ; farm foreman.

2011 GROWING SEASON RAINFALL

Location	April	May	June	July	Aug	Sept	Total
Urbana	7.51	5.50	3.93	1.60	1.93	2.75	21.2

SOURCES OF SEED

Ag Research USA, Ag Research USA Limited, P.O. Box 8159, Asheville, NC 28814.

Albert Lea, Albert Lea Seed House, Inc. 1414 W Main, Albert Lea, MN 56007.

Allied, Allied Seed, L.L.C., 1108 Hilldale Dr., Macon, MO 63552.

America's, America's Alfalfa, P.O. 8246, Madison, WI 53708.

AMPAC, AMPAC Seed Co., P.O. Box 318, Tangent, OR, 97389-0318.

Crop Production Services, Crop Production Services, P.O. Box 1168, Fresno, CA 93715.

Dekalb, Monsanto, 800 N Lindbergh Blvd., St. Louis, MO 63167.

DLF Int'l, DLF- International Seeds. Inc., P.O. Box 229, Halsey, OR 97348.

Farm Science Genetics, Farm Science Genetics, 960 Road 34, Worland, WY 82401.

Forage Genetics, Forage Genetics, 1897 195th St, Boone, IA 50036.

FS Seed, Growmark Inc., 1701 Towanda Ave., Bloomington, IL 61701.

Kitchen, Kitchen Seed Company, P. O. Box 289, Arthur, IL 61911.

Kelly, Kelly Seed & Hardware, 202 Hamilton Blvd., Peoria, IL 61602.

Mycogen, Mycogen Seeds, 9330 Zionsville Rd., Indianapolis, IN 46268.

Pioneer, Pioneer Hi-bred International, Inc., 451 Detroit Dr, Bloomington, IL 61704.

Producers Choice, Producer's Choice, 2850 390th St., Story City, IA 50248.

Public Varieties, Various sources

Renk, Renk Seed Co., 6800 Willburn Rd., Sun Prairie, WI 53590.

Syngenta Seeds, Syngenta Seeds, 11055 Wayzata Blvd, Minnetonka, MN 55305

Winfield Solutions, Winfield Solutions, LLC, 2901 Packers Ave., Madison, WI 53707.

2011 FORAGE LOCATIONS



2011 Alfalfa Entries, Disease and Fall Dormancy Ratings

Company-Brand	* experimental Variety	Urbana											Disease Resistance ⁴			
		10	08	FD ²	WS ³	BW	VW	FW	AN	PRR	PA	SN	APH race 1	APH race 2	RN	LH
Mycogen Seed	4S417 [^]	x		4	-	HR	HR	HR	HR	HR	-	HR	HR	-	R	-
Pioneer	53H92 [^]	x	x	3	-	HR	R	HR	HR	HR	HR	R	HR	R	LR	HR
Pioneer	5454 [^]	x	x	4	2.7	HR	HR	HR	HR	HR	R	R	HR	-	HR	-
Pioneer	54Q32 [*]	x		4	-	HR	HR	HR	HR	HR	R	LR	HR	-	R	-
Pioneer	55H94	x		5	-	HR	HR	HR	HR	HR	R	R	HR	R	R	HR
Pioneer	55V48	x	x	5	-	HR	R	HR	HR	HR	HR	-	HR	R	R	-
Pioneer	55V50	x		5	-	HR	HR	R	HR	HR	R	R	HR	HR	HR	-
Syngenta Seeds	6417		x	4	2	HR	HR	HR	HR	HR	HR	R	HR	HR	-	-
Syngenta Seeds	6426		x	4	2	HR	HR	HR	HR	HR	HR	HR	HR	-	-	HR
Syngenta Seeds	6475H	x		4	2	HR	HR	HR	HR	HR	R	R	HR	-	-	HR
Syngenta Seeds	64Q22	x		4	1	HR	HR	HR	HR	HR	R	R	HR	-	-	-
Producer's Choice	A 4330	x		4	-	HR	HR	HR	HR	HR	R	R	HR	-	HR	-
Producer's Choice	A 4440		x	4	1	HR	HR	HR	HR	HR	-	R	HR	HR	-	-
America's Alfalfa	Ameristand 403T Plus	x		4	2	HR	HR	HR	HR	HR	R	R	HR	R	-	-
America's Alfalfa	Ameristand 404LH		x	4	2	HR	HR	HR	HR	HR	R	-	HR	-	-	HR
America's Alfalfa	Ameristand 407TQ	x	x	4	2	HR	HR	HR	HR	HR	HR	MR	HR	R	-	-
Renk	Forage Gold [^]	x		4	2	HR	HR	HR	HR	HR	R	R	HR	-	-	-
Crop Production Services	DG 4210	x		4	1	HR	HR	HR	HR	HR	R	R	HR	-	-	-
DeKalb	DKA43-13 [^]		x	4	-	HR	HR	HR	HR	HR	-	-	HR	-	-	-
Forage Genetics	FG 44H375 [^]	x		4	-	HR	HR	HR	HR	HR	R	R	HR	-	-	HR
Kitchen/Kelly	FSG 406		x	4	1	HR	HR	HR	HR	HR	R	R	HR	-	R	-
Kitchen/Kelly	FSG 408DP		x	4	2	HR	R	HR	HR	HR	R	R	R	-	HR	-
Farm Science Genetics	FSG 420LH	x		4	2	HR	HR	HR	HR	HR	R	R	HR	-	-	HR
Kitchen/Kelly	FSG 505		x	5	2	HR	HR	HR	HR	HR	R	R	HR	-	R	-
Kitchen/Kelly	FSG 528 SF		x	5	-	HR	HR	HR	HR	R	R	-	R	-	-	-
Syngenta Seeds	GH727		x	4	1	HR	HR	HR	HR	HR	R	R	HR	-	-	-
Syngenta Seeds	GH773LH [^]		x	4	2	HR	HR	HR	HR	HR	HR	R	HR	-	-	HR
Producer's Choice	PGI 557 [*]	x		5	-	HR	HR	HR	HR	HR	R	HR	HR	-	-	-
Public	Vernal [^]	x	x	2	2	R	S	MR	S	S	S	-	S	-	MR	-
FS Seed	WL 343 HQ	x	x	4	1	HR	HR	HR	HR	HR	HR	R	HR	-	-	-
FS Seed	WL 363 HQ	x	x	5	1	HR	HR	HR	HR	HR	HR	HR	HR	HR	HR	-

² Fall Dormancy Scale: 1= Least fall growth; 9= greatest fall Growth

³ WS = winter survival index as determined in University of Wisconsin and Minnesota trials:
1= superior winter survival 2= very good 3= good 4= adequate 5= low 6= no winter survival

[^] Varieties not reviewed by the National Alfalfa Variety Review Board. Resistance information not verified.

⁴Disease and Pest Abbreviations

BW= Bacterial Wilt
 VW =Verticillium Wilt
 FW = Fusarium Wilt
 AN = Anthracnose
 PRR = Phytophthora Root Rot
 APH = Aphanomyces
 PA = Pea Aphid
 SN = Stem Nematode
 RN = Root Knot Nematode
 LH = Leafhopper

% Resistant Plants

HR = High Resistance
 R = Resistant
 MR = Medium Resistance
 LR = Low Resistance
 S = Susceptible
 ND = Not Determined

Resistance Class

>50
 31-50
 15-30
 6-14
 0-5

2011 Forage Grass Entries

Company-Brand	* experimental Variety	Urbana 08 Species
AgResearch USA	Advance MaxQ	x Tall Fescue
AgResearch USA	AGRFA 140*	x Tall Fescue
AgResearch USA	AGRFA 144*	x Tall Fescue
AgResearch USA	AGRFA 150*	x Tall Fescue
AgResearch USA	AGRFA 152*	x Tall Fescue
AgResearch USA	FA 2865*	x Tall Fescue
AgResearch USA	FA 2866*	x Tall Fescue
AgResearch USA	KLp 401*	x Perennial Rye Grass
AgResearch USA	KLp 507*	x Perennial Rye Grass
AgResearch USA	KRC 6576*	x Perennial Rye Grass
AgResearch USA	KRC 6579*	x Perennial Rye Grass
Allied Seed	Bonus	x Festulolium
Allied Seed	Boost	x Perennial Rye Grass
Allied Seed	Gain	x Festulolium
Ampac Seed	Potomac	x Orchard Grass
Ampac Seed	Power	x Perennial Rye Grass
Ampac Seed	Profit	x Orchard Grass
Ampac Seed	Spring Green	x Festulolium
DLF International	Calibra	x Perennial Rye Grass (tetraploid)
DLF International	Linn	x Perennial Rye Grass (diploid)
KY Agric Exp Sta	Kentucky 31 E-	x Tall Fescue
KY Agric Exp Sta	Kentucky 31 E+	x Tall Fescue
Winfield Solutions	TF0201	x Tall Fescue

2008 Urbana Alfalfa Variety Trial

Brand-Variety * Experimental	2011					2010	2009	3-yr	Relative
	23-May T DM/A	28-Jun T DM/A	29-Jul T DM/A	7-Sep T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Yield % Trial Mean
GH727	3.64	2.51	1.98	1.93	10.06	9.14	7.52	26.71	106
FSG 505	3.60	2.35	1.91	1.74	9.59	8.66	8.31	26.55	106
AMERISTAND 407TQ	3.62	2.62	2.00	1.56	9.80	8.68	7.67	26.15	104
FSG 406	3.57	2.29	2.01	1.71	9.58	8.62	7.80	26	103
WL 363 HQ	3.35	2.47	1.93	1.69	9.44	8.30	7.99	25.73	102
WL 343 HQ	3.42	2.44	1.92	1.75	9.52	8.29	7.60	25.41	101
A 4440	3.51	2.34	1.75	1.80	9.40	8.35	7.66	25.41	101
55V48	3.49	2.39	1.77	1.49	9.13	8.11	8.02	25.25	100
6417	3.48	2.32	2.02	1.58	9.39	8.15	7.57	25.11	100
DKA43-13	3.25	2.19	1.93	1.67	9.04	7.99	7.75	24.77	99
FSG 408 DP	3.49	2.16	1.88	1.67	9.19	8.22	7.14	24.55	98
5454	3.31	2.08	2.00	1.45	8.84	7.90	7.66	24.40	97
FSG 528 SF	3.17	2.11	1.82	1.43	8.52	7.91	7.51	23.94	95
Vernal	3.10	1.70	2.00	1.46	8.25	7.14	6.57	21.96	87
Mean	3.43	2.28	1.92	1.64	9.27	8.25	7.62	25.14	
5%_LSD	0.31	0.25	ns	0.19	0.61	0.70	0.64	1.47	
CV(%)	6.23	7.57	10.25	8.10	4.61	5.96	5.91	4.08	
MCV(%)	8.91	10.83	14.66	11.58	6.60	8.52	8.45	5.83	

Without Insecticides

Brand-Variety * Experimental	2011					2010	2009	3-yr	Relative
	23-May T DM/A	28-Jun T DM/A	29-Jul T DM/A	7-Sep T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Yield % Trial Mean
53H92	3.52	2.31	2.02	1.27	9.12	8.80	7.42	25.33	107
GH773LH	3.31	2.12	1.89	1.41	8.73	8.95	7.31	24.98	106
AMERISTAND 404LH	3.23	2.13	2.07	1.32	8.75	8.27	7.19	24.21	102
5454	3.63	2.20	1.68	1.48	8.99	8.57	6.06	23.62	100
6426	3.22	2.15	1.89	1.22	8.48	8.05	6.88	23.40	99
Vernal	3.25	1.80	1.42	1.18	7.65	7.33	5.42	20.39	86
Mean	3.36	2.12	1.83	1.31	8.62	8.33	6.71	23.65	
5%_LSD	ns	0.23	0.17	0.15	0.80	0.91	0.56	2.06	
CV(%)	8.94	7.35	6.24	7.37	6.12	7.25	5.58	5.77	
MCV(%)	13.48	11.07	9.41	11.11	9.23	10.93	8.42	8.69	

Date of Seeding: April 23, 2008.

Soil Type: Flagg silt loam.

Herbicides: None.

Pest Control: July 18th and August 8th (Mustang Max).

Plot Dimensions: 3' x19'.

2010 Urbana Alfalfa Variety Trial

Brand-Variety * Experimental	2011					Relative Yield % Trial Mean
	25-May T DM/A	28-Jun T DM/A	29-Jul T DM/A	7-Sep T DM/A	Total T DM/A	
55V50	3.90	2.93	2.34	1.67	10.84	110
Forage Gold	3.72	2.80	2.25	1.72	10.48	106
55V48	3.74	2.74	2.14	1.64	10.26	104
64Q22	3.28	2.91	2.43	1.65	10.26	104
AmeriStand 407TQ	3.47	2.72	2.34	1.64	10.16	103
A4330	3.39	2.78	2.16	1.75	10.08	102
DG 4210	3.31	2.78	2.36	1.63	10.07	102
PGI557*	3.51	2.56	2.20	1.73	10.00	101
WL 363 HQ	3.39	2.75	2.20	1.58	9.92	100
4S417	3.66	2.52	2.04	1.67	9.89	100
WL 343 HQ	3.45	2.69	2.22	1.47	9.82	99
54Q32	3.31	2.62	2.15	1.55	9.63	98
AmeriStand 403T Plus	3.45	2.35	1.89	1.63	9.31	94
5454	3.37	2.35	1.90	1.58	9.20	93
Vernal	3.20	1.97	1.60	1.42	8.19	83
Mean	3.48	2.63	2.15	1.62	9.87	
5%_LSD	0.33	0.16	0.14	ns	0.55	
CV(%)	6.74	4.27	4.41	6.03	3.88	
MCV(%)	9.62	6.09	6.29	8.60	5.54	

Without Insecticides

Brand-Variety * Experimental	2011					Relative Yield % Trial Mean
	25-May T DM/A	28-Jun T DM/A	29-Jul T DM/A	7-Sep T DM/A	Total T DM/A	
55H94	3.61	2.47	2.35	1.32	9.74	107
FSG 420LH	3.85	2.42	2.13	1.30	9.70	107
FG 44H375*	3.55	2.51	2.23	1.24	9.53	105
6475H	3.61	2.45	2.10	1.26	9.41	104
53H92	3.43	2.33	1.89	1.17	8.81	97
5454	3.22	2.15	1.80	1.25	8.42	93
Vernal	3.52	1.70	1.55	1.06	7.82	86
Mean	3.54	2.29	2.01	1.23	9.06	
5%_LSD	ns	0.26	0.17	ns	0.54	
CV(%)	6.50	7.67	5.57	9.71	4.00	
MCV(%)	9.65	11.40	8.28	14.42	5.94	

Date of Seeding: April 23rd, 2010.

Soil Type: Drummer-Flanagan silty-clay loam.

Herbicides: None.

Pest Control: July 18th and August 8th (Mustang Max).

Plot Dimensions: 3' x19'.

2008 Urbana Grass Variety Trial

Brand-Variety * Experimental	Species ¹	2011			2010	2009	Grand	Relative
		26-May T DM/A	28-Jun T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Total T DM/A	Yield % Trial Mean
FA 2866*	TF	3.55	1.93	5.47	9.23	7.85	22.55	123
AGRFA 152*	TF	4.02	2.00	6.02	6.92	9.26	22.20	121
AGRFA 144*	TF	4.75	1.61	6.36	7.58	7.92	21.85	119
Profit	OG	4.95	1.63	6.59	6.24	8.07	20.89	114
Kentucky 31 E+	TF	4.21	1.97	6.18	6.37	8.30	20.85	114
Kentucky 31 E-	TF	4.76	1.65	6.41	6.66	7.79	20.85	114
Potomac	OG	4.97	1.77	6.73	6.22	7.80	20.75	113
FA 2865*	TF	3.70	1.88	5.58	7.41	7.73	20.71	113
AGRFA 150*	TF	4.00	2.09	6.09	6.98	7.55	20.63	113
AGRFA 140*	TF	4.34	1.69	6.03	7.03	7.14	20.20	110
ADVANCE MAXQ	TF	3.46	1.95	5.42	6.40	8.04	19.85	108
TF0201*	TF	3.75	1.92	5.67	6.30	7.42	19.39	106
Gain	FS	2.36	2.06	4.41	5.25	8.37	18.03	98
Bonus	FS	3.20	1.86	5.06	4.88	7.70	17.64	96
Spring Green	FS	2.44	1.64	4.08	5.78	7.33	17.19	94
Power	PRG	2.59	1.31	3.89	4.90	6.50	15.30	84
Linn	PRG	2.54	1.58	4.12	4.97	5.84	14.92	82
KRC 6576*	PRG	3.02	1.65	4.67	3.68	6.35	14.70	80
KLp 401*	PRG	2.09	1.56	3.65	4.52	6.42	14.58	80
KLp 507*	PRG	2.03	1.36	3.39	4.16	5.86	13.40	73
Calibra	PRG	2.12	1.35	3.47	4.40	5.40	13.27	72
KRC 6579*	PRG	2.45	1.41	3.86	4.20	4.89	12.94	71
	Mean	3.42	1.72	5.14	5.88	7.25	18.30	
	5%_LSD	0.74	0.28	0.90	0.86	0.83	1.72	
	CV(%)	15.40	11.43	12.42	10.35	8.10	6.66	
	MCV(%)	21.77	16.15	17.54	14.62	11.44	9.41	

Date of Seeding: April 23rd, 2008.
 Soil Type: Drummer-Flanagan silty-clay loam.
 Herbicides: None.
 Fertilization: 50lbs N 30 days before harvest.
 Plot Dimensions: 3' x19'.

¹ FS= Festulolium
 OG= Orchardgrass
 TF= Tall fescue
 PRG= Perennial Rye Grass