

PERFORMANCE OF COMMERCIAL FORAGES IN ILLINOIS

THE UNIVERSITY OF ILLINOIS commercial forage testing program has been testing public and private forages for over 55 years. The initial purpose was to evaluate the many public varieties available, today public varieties are far out numbered by private varieties. This year 37 seed companies are participating in the 2006 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 2006 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 114 varieties were tested in 2006.

Number and location of tests In 2006, tests were conducted at 3 locations throughout the state (see map on pg. 4). These sites represent the major soils and dairy producing areas of the state.

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.

2006 TEST FIELDS

Freeport

Location: Stephenson county, north of Freeport, north central Illinois.

Cooperators: Dave and Mike Macomber.

Urbana

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

Cooperators: Robert Dunker; agronomist, Mike Kleiss; farm foreman.

Belleville

Location: Southern Illinois University Research Center, east of Belleville, St. Clair county.

Cooperators: Ed Varsa; research director; Ron Krausz; field manager.

2006 GROWING SEASON RAINFALL

Location	April	May	June	July	Aug
Freeport	5.40	3.70	5.70	5.06	0.80
Urbana	3.18	1.69	8.05	3.48	1.72
Belleville	3.99	3.16	1.81	1.46	2.80

SOURCES OF SEED

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

AgriPro, AgriPro Seeds, Inc., R.R. 2, Hwy 30 East, Ames, IA 50010

AGSP, American Grass Seed Producers, P.O. Box 268, Tangent, OR 97389.

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

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

Beck, Beck's Superior Hybrids, 6767 E. 276th St., Atlanta, IN 46031.

Bio Plant, Bio Plant Research, P.O. Box 320, Camp Point, IL 62320.

Crop Mark, Cropmark Seeds Ltd., P.O. Box 16574, Christchurch, New Zealand.

Croplan, Croplan Genetics, P.O. 64406, St. Paul, MN 55164-0406

Dairyland, Dairyland Seed Co., P.O. Box 958, West Bend, WI 53095

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

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

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

Garst, Garst Seed Co., 2369-330th St, P.O. Box 500, Slater, IA 50244

George Keller, George Keller & Sons Co., P.O. Box 490, 909 Maine St., Quincy, IL 62306-0490

Great Plains, Great Plains Research Co., Inc., 3624 Kildaire Farm Rd., Apex, NC 27539

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

Hoffman, Hoffman Seed House, 200 E 4th St., Hoffman, IL 62250

Hughes, Hughes Hybrids, 206 N Hughes Rd., Woodstock, IL 60098

Journey Brand, Fontanelle Hybrids, 10981 8th St., Fontanelle, NE 68044

Lewis, Lewis Seed Co., 33820 Linn-West Dr. Shedd, OR 97377

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

Oregro, Oregro Seeds, 33080 Red Bridge Rd., Albany, OR 97322.

Ottilie, Ottilie RO Seed, 1462 Sanford Ave., Marshalltown, IA 50158

Pennington, Pennington Seed, P.O. Box 290, Madison, GA 30650.

PGI, PGI Alfalfa, Inc., 225 West 1st St., Story City, IA 50248

Pickseed West, Pickseed West Inc., P.O. Box 888, Tangent, OR 97389

Pioneer, Pioneer Hi-bred International, Inc., 14171 Carole Dr., Bloomington, IL 61704

Power Seeds, 658 Larner Line, RR 1, Fraserville, Ont. Canada, K0L 1V0

Pro Seeds, Pro Seeds Marketing, 13963 Westside Lane S., Jefferson, OR 97352.

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

Public Varieties, Various sources

Radix, Radix Research, 9176 Bates Rd, Aumsville, OR 97325.

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

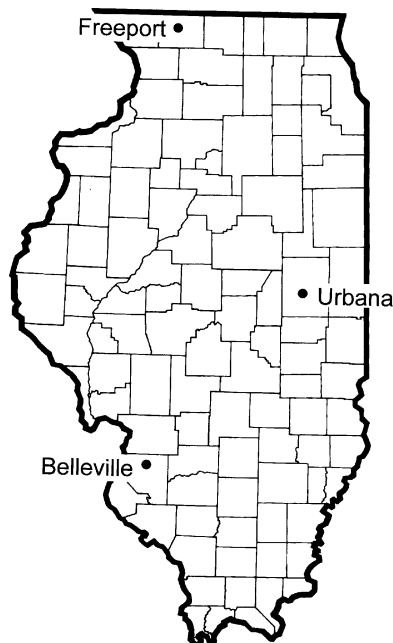
Seed Research, Seed Research of Oregon, 27630 Llewellyn Rd. Corvallis, OR 97333

Smith Farms, Loren J Smith Farms, 30361 Loren Lane, Corvallis, OR 97333

Smith Seed, Smith Seed Services, P.O. Box 288, Halsey OR 97348

Target, Target Seed, P.O. Box 300, Parma, ID 83660

2006 FORAGE LOCATIONS



2006 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport				UrbaBelleville		
		03	04	05	06	04	06	03
JOURNEY BRAND	204 HYBRID	x						
HUGHES	321 HYB*		x					
FORAGE GENETICS	42H167*		x					
FORAGE GENETICS	42H169*		x					
MYCOGEN	4A421			x	x			
MYCOGEN	4G418RR				x			
MYCOGEN	4P424				x			
MYCOGEN	4R429		x	x				
MYCOGEN	4S419*				x			
PIONEER	53H92*				x			
PIONEER	53Q30			x	x			
PIONEER	5454		x		x			
PIONEER	54H91	x	x					x
PIONEER	54V46	x	x	x	x	x		x
GARST	6325	x	x					
GARST	6400HT	x		x				
GARST	6415		x	x	x			
GARST	6420	x		x				
GARST	6426				x			
GARST	6443RR				x			
GARST	6530		x					
PGI	A 30-06			x				
GEORGE KELLER	ABSOLUTE GZ BRAND							x
GEORGE KELLER	ABSOLUTE III BRAND	x						x
BIO PLANT	ABUNDANCE		x					
AMERICA'S	AMERISTAND 407TQ				x			
BIO PLANT	BPR 382*				x			
DEKALB	DKA 33-16	x						
DEKALB	DKA41-18RR				x			
DARIYLAND	DS320*	x						
DARIYLAND	DS321*	x						
DARIYLAND	DS322*	x						
DARIYLAND	DS323*	x						
DAIRYLAND	DS417*				x			
AGRIPRO	FEAST +EV	x						
ALLIED	FSG 400LH		x					
ALLIED	FSG 406					x		
ALLIED	FSG 408DP					x		
ALLIED	FSG 505					x		x
HOFFMAN	HAYBLAZER-444 HYB*		x			x		
DARIYLAND	HYBRIFORCE-420 WET	x	x			x		x
PRODUCERS CHOICE	INTEGRITY				x			
CROPLAN	LEGENDAIRY 5.0			x				
BIO PLANT	MILESTONE			x				
GREAT PLAINS	NOVA					x		
BIO PLANT	PHIRST	x						
GEORGE KELLER	PLH 4000 BRAND							x
POWER SEEDS	POWER 4.2	x						
BIO PLANT	PREFORM*			x	x			
TARGET	REBEL					x		
BIO PLANT	REBOUND 5.0			x	x			
PGI	REWARD II	x				x		
RENK/BECK	SUMMER GOLD		x			x		
OTILIE	TRUMP II	x						
PUBLIC	VERNAL	x	x	x	x	x		x
GROWMARK	WL 343 HQ				x			
GROWMARK	WL 345 LH			x				
GROWMARK	WL 346 LH		x					
GROWMARK	WL 348 AP	x						
GROWMARK	WL 355 RR				x			
GROWMARK	WL 357 HQ	x						x

2006 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport 03 04 05 06	Urban 04 06 03	Belleville
Perennial Forage Grasses				
AG RESEARCH USA	ADVANCE MAXQ TF ...			x
AG RESEARCH USA	AGR DG 101* OG			x
AG RESEARCH USA	AGR FA 140* TF			x
AG RESEARCH USA	AGR FA 144* TF			x
AG RESEARCH USA	AGR FA 148* TF			x
AG RESEARCH USA	AGR FA 150* TF			x
AG RESEARCH USA	AGR FA 152* TF			x
AG RESEARCH USA	AGR FA 155* TF			x
AG RESEARCH USA	AGR FL 101* FS			x
AG RESEARCH USA	AGR FX 101* FS			x
AG RESEARCH USA	AGR FX 102* FS			x
AG RESEARCH USA	AGR FX 103* FS			x
AG RESEARCH USA	AGR FX 104* FS			x
DLF INT'L	AMBASSADOR OG		x	
AGSP	AMBROSIA OG			x
ALLIED	ARKPLUS TF		x	
SEED RESEARCH	AUBISQUE PRT		x	
PUBLIC	BISON HRG		x	x
AG RESEARCH USA	CHECK AL TF			x
AG RESEARCH USA	CHECK LC TF			x
AG RESEARCH USA	CHECK RN TF			x
PUBLIC	CLAIR TM		x	
ALLIED	ENHANCE TF		x	
PICKSEED WEST	FESTIVAL TF		x	
ALLIED	GRAND DADDY PRT ...		x	
DLF INT'L	HYKOR FS		x	
PENNINGTON	JESUP MAX Q TF		x	
AG RESEARCH USA	JESUP MAXQ TF			x
AG RESEARCH USA	K 6562 QII 542* TF			x
PUBLIC	KENTUCKY 31 E+ TF ..			x
PUBLIC	KENTUCKY 31 TF		x	
AG RESEARCH USA	KFA 402 V 542* TF			x
PUBLIC	LINCOLN SB		x	x
CROP MARK	LP2005HA* PRT			x
SEED RESEARCH	MONTANA MB		x	
PENNINGTON	OLYMPIA OG			x
OREGRO	ORTET-05 PRT			x
SMITH SEED	PERSIST OG		x	
DLF INT'L	PERUN FS		x	
PUBLIC	POTOMAC OG		x	x
SMITH FARMS	PROFILE OG		x	
LEWIS	QUARTERMASTER PR .			x
RADIX	RAD-BIX33* HSB			x
PRO SEEDS	SHILOH II OG			x
AG RESEARCH USA	SPRING GREEN FS ...			x
SEED RESEARCH	STOCKMAN TF		x	
SMITH SEED	TAKENA 2 OG		x	
DLF INT'L	TERELITE II HRG		x	
OREGRO	TF-4* TF			x
PUBLIC	TONGA PRT		x	x
OREGRO	TUCKER OG			x
AGSP	VERDANT TF			x
LEWIS	VOYAGER HRG		x	

Key to Grass Species

- C= Chicory
- FS= Festulolium
- HRG= Hybrid ryegrass
- LH= Lolium hybridum
- MB= Mountain Brome
- MX= Mixture
- OG= Orchard grass
- PB= Prairie bromegrass
- PG= Prairie grass
- PR= Perennial ryegrass
- PRT= Perennial ryegrass tetraploid
- RC= Reed canarygrass
- SB= Smooth bromegrass
- TF= Tall fescue
- TM= Timothy

Disease and Fall Dormancy Ratings of Alfalfa Varieties in Illinois

Variety	Disease Resistance ⁴													
	FD ²	WS ³	APH										LH	
			BW	VW	FW	AN	PRR	race 1	race 2	PA	SN	RN		
204 HYBRID	4	-	HR	R	HR	HR	HR	HR	R	-	R	R	-	LR
321 HYB [^]	4	-	HR	R	HR	R	HR	R	-	-	-	-	-	-
42H167 [^]	4	2.0	HR	HR	HR	HR	HR	HR	-	-	-	-	-	HR
42H169 [^]	4	2.0	HR	HR	HR	HR	HR	HR	-	-	-	-	-	HR
4A421	4	1.8	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
4G418RR [^]	4	-	HR	HR	HR	HR	HR	HR	-	-	-	-	-	-
4P424 [^]	4	2.0	HR	HR	HR	HR	HR	HR	-	-	-	-	-	HR
4R429 [^]	4	2.0	HR	HR	HR	HR	HR	HR	HR	R	MR	-	-	-
4S419 [^]	4	-	HR	HR	HR	HR	HR	R	-	-	-	-	-	-
53H92 [^]	3	-	HR	R	HR	HR	HR	HR	R	HR	R	LR	HR	HR
53Q30	3	2.5	HR	HR	HR	HR	HR	HR	R	R	R	HR	S	-
5454	4	2.7	HR	HR	HR	HR	HR	HR	-	R	R	HR	HR	-
54H91	4	3.0	HR	HR	R	HR	HR	R	-	R	MR	MR	MR	-
54V46	4	3.1	R	HR	HR	HR	HR	R	R	R	MR	HR	HR	HR
6325	3	-	HR	HR	HR	HR	HR	HR	R	R	-	-	-	HR
6400HT	4	2.4	HR	HR	HR	HR	HR	HR	-	HR	-	-	-	-
6415	4	1.4	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
6420	4	-	HR	R	HR	R	HR	R	-	R	R	HR	-	-
6426 [^]	4	2.6	HR	HR	HR	HR	HR	HR	-	R	-	-	-	HR
6443RR	4	2.0	HR	HR	HR	HR	HR	-	-	HR	R	-	-	-
6530	5	-	HR	HR	HR	HR	HR	HR	MR	HR	R	-	-	-
A 30-06	3	2	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
ABSOLUTE GZ BRAND [^]	4	-	HR	R	HR	HR	HR	R	-	HR	-	-	-	-
ABSOLUTE III BRAND [^]	4	-	HR	R	HR	HR	HR	HR	-	HR	-	-	-	-
ABUNDANCE	4	3.3	HR	R	HR	R	HR	R	-	R	R	HR	-	-
AMERISTAND 407TQ	4	2.0	HR	HR	HR	HR	HR	HR	R	HR	MR	-	-	-
BPR 382 [^]	4	-	HR	HR	HR	HR	HR	R	-	-	-	-	-	-
DKA 33-16	3	-	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
DKA41-18RR	4	2.0	HR	HR	HR	HR	HR	HR	-	HR	R	-	-	-
DS320 [^]	4	-	HR	R	HR	HR	HR	R	-	-	-	-	-	-
DS321 [^]	4	-	HR	R	HR	HR	HR	R	-	-	-	-	-	-
DS322 [^]	4	-	HR	R	HR	HR	HR	R	-	-	-	-	-	-
DS323 [^]	4	-	HR	R	HR	HR	HR	R	-	-	-	-	-	-
DS417 [^]	4	-	HR	HR	HR	HR	HR	HR	-	-	-	-	-	-
FEAST +EV	3	-	HR	HR	HR	R	HR	HR	-	MR	MR	-	-	-
FSG 400LH	4	-	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
FSG 406	4	2.0	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
FSG 408DP	4	-	HR	R	HR	HR	HR	R	-	-	-	-	-	-
FSG 505	5	2.9	HR	HR	HR	HR	HR	R	-	R	R	R	-	-
HAYBLAZER-444 HYB [^]	4	-	HR	R	HR	R	HR	R	-	-	-	-	-	-
HYBRIFORCE-420 WET	4	3.1	HR	R	HR	R	HR	R	-	R	HR	HR	-	-
INTEGRITY	4	-	HR	HR	HR	HR	HR	HR	R	-	-	-	-	-
LEGENDAIRY 5.0	3	2	HR	HR	HR	HR	HR	HR	-	R	MR	R	-	-
MILESTONE	4	2	HR	R	HR	R	HR	R	-	R	-	-	-	-
NOVA	4	-	HR	R	HR	R	HR	MR	-	HR	-	-	-	-
PHIRST	4	-	HR	R	HR	HR	HR	R	-	R	R	HR	-	-
PLH 4000 BRAND [^]	4	-	HR	R	HR	HR	HR	HR	-	HR	-	-	-	HR
POWER 4.2	4	-	HR	R	HR	HR	HR	HR	-	R	HR	R	-	-
PREFORM [^]	4	2	HR	HR	HR	HR	HR	HR	-	-	-	-	-	-
REBEL	4	-	HR	HR	HR	HR	HR	R	-	HR	-	-	-	-
REBOUND 5.0	4	2.0	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
REWARD II	4	-	HR	R	HR	R	HR	R	-	R	R	HR	-	-
SUMMER GOLD	4	-	HR	HR	HR	HR	HR	HR	-	R	HR	R	-	-
TRUMP II [^]	4	-	HR	HR	HR	HR	HR	HR	-	R	R	-	-	-
VERNAL	2	2.0	R	S	MR	S	S	S	-	S	-	MR	-	-
WL 343 HQ [^]	4	-	HR	HR	HR	HR	R	HR	LR	R	MR	-	LR	HR
WL 345 LH	3	2.4	HR	HR	HR	HR	HR	HR	-	R	MR	MR	HR	HR
WL 346 LH	4	-	HR	HR	HR	HR	HR	HR	-	MR	MR	-	-	-
WL 348 AP	4	2	HR	HR	HR	HR	HR	HR	HR	R	MR	-	-	-
WL 355 RR	4	2	HR	HR	HR	HR	HR	HR	-	R	R	MR	-	-
WL 357 HQ	5	2.1	HR	HR	HR	HR	HR	HR	LR	HR	-	-	-	LR

^{2,3,4}see page 13 for abbreviation key.

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