

PERFORMANCE OF COMMERCIAL FORAGES IN ILLINOIS

THE UNIVERSITY OF ILLINOIS commercial forage testing program has been testing public and private forages for over 54 years. The initial purpose was to evaluate the many public varieties available, today public varieties are far out numbered by private varieties. This year 34 seed companies are participating in the 2005 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 2005 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 97 varieties were tested in 2005.

Number and location of tests In 2005, 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.

2005 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.

2005 GROWING SEASON RAINFALL

Location	April	May	June	July	Aug
Freeport	1.70	3.80	2.20	1.16	7.23
Urbana	3.98	4.50	4.08	5.67	4.29
Belleville	2.85	8.72	2.18	6.75	5.22

SOURCES OF SEED

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

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

Ampac, Ampac Seed Co., P.O. Box 318, Tangent, OR 97389

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

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

Cebeco, Cebeco International Seeds, Inc., P.O. Box 229 / 175 W. "H" Street, Halsey, OR 97333

Croplan Genetics, 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 Seeds, DLF- International Seeds. Inc., P.O. Box 229, Halsey, OR 97348

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

Emerald, Emerald Commodities, Inc., 32041 Cartney Dr. Harrisburg, OR 97466

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

Improved Forages, Improved Forages, P.O. Box 230, Lake Oswego, OR 97034

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

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

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

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

Pennington Seed, Pennington Seed, Inc. of Oregon, Lebanon, OR 98355

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

Public Varieties, Various sources

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

Schultz, Schultz Turf and Forage Seed, P.O. Box 1623, Effingham, IL 62401

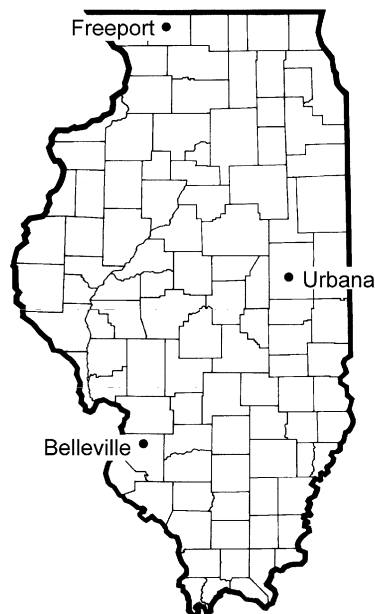
Seed Research, Seed Research of Oregon, 27630 Llewellyn Rd. Corvallis, OR 97333

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

2005 FORAGE LOCATIONS



2005 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport			UrbaBelleville		
		02	03	04 05	02	04	03
JOURNEY BRAND	204 HYBRID		x				
HUGHES	321 HYB*			x			
FORAGE GENETICS	42H167*			x			
FORAGE GENETICS	42H169*			x			
MYCOGEN	4A421				x		
MYCOGEN	4R429			x	x		
PIONEER	53Q30				x		
PIONEER	54H91	x	x	x			x
PIONEER	54V46		x	x	x	x	x
PIONEER	5454			x			
PIONEER	54V54	x					
GARST	6325		x	x			
GARST	6400HT		x		x		
GARST	6410	x					
GARST	6415			x	x		
GARST	6420	x	x		x		
GARST	6530			x			
PGI ALFALFA	A 30-06				x		
GEORGE KELLER	ABSOLUTE BRAND GZ	x					x
GEORGE KELLER	ABSOLUTE BRAND II	x					
GEORGE KELLER	ABSOLUTE III BRAND		x				x
BIO PLANT RESEARCH	ABUNDANCE		x				
BIO PLANT RESEARCH	BPR387				x		
DEKALB	DKA 33-16		x				
DARIYLAND	DS320*		x				
DARIYLAND	DS321*		x				
DARIYLAND	DS322*		x				
DARIYLAND	DS323*		x				
AGRIPRO	FEAST +EV	x	x				
ALLIED SEED	FSG 400LH			x			
ALLIED SEED	FSG 406					x	
ALLIED SEED	FSG 408DP					x	
ALLIED SEED	FSG 505					x	x
HOFFMAN	HAYBLAZER-444 HYB*			x		x	
DARIYLAND	HYBRIFORCE-420 WET	x	x			x	x
CROPLAN GENETICS	LEGENDAIRY 5.0				x		
BIO PLANT RESEARCH	MILESTONE				x		
GREAT PLAINS	NOVA					x	
BIO PLANT RESEARCH	PHIRST		x				
GEORGE KELLER	PLH 4000 BRAND						x
POWER SEEDS	POWER 4.2		x				
TARGET	REBEL					x	
CROPLAN GENETICS	REBOUND 5.0				x		
PGI ALFAFLA	REWARD II	x	x			x	
RENK/BECK	SUMMER GOLD			x		x	
ALLIED SEED	TRIPLE CROWN	x					
OTTILIE	TRUMP II		x				
PUBLIC	VERNAL	x	x	x	x	x	x
GROWMARK	WL 319 HQ	x					
GROWMARK	WL 338 SR	x					
GROWMARK	WL 345 LH				x		
GROWMARK	WL 346 LH			x			
GROWMARK	WL 348 AP		x				
GROWMARK	WL 357 HQ		x				x
Perennial Forage Grasses!							
SCHULTZ TURF & FORAGE	ALBERT OG					x	
DLF INT'L SEEDS	AMBASSADOR OG						x
ALLIED SEED	ARKPLUS TF						x
SEED RESEARCH OF OREGON	AUBISQUE PRT						x
PUBLIC	BISON HRG					x	x
IMPROVED FORAGES	BULL TF					x	

2005 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport				Urbanville		
		02	03	04	05	02	04	03
SEED RESEARCH OF OREGON	CENTURY OG					x		
CEBECO INT'L. SEEDS, INC.	CISI OG 10* OG					x		
PUBLIC	CLAIR TM					x	x	
EMERALD COMMODITIES	EC407* PRG					x		
ALLIED SEED	ENHANCE TF						x	
ALLIED SEED	EXTEND OG					x		
DLF INT'L SEEDS	FELINA FS					x		
PICKSEED WEST	FESTIVAL TF						x	
ALLIED SEED	GRAND DADDY PRT ...						x	
SMITH SEED SERVICES	GRAND DADDY PRT ...					x		
DLF INT'L SEEDS	HYKOR FS						x	
SEED RESEARCH OF OREGON	ICON OG					x		
PENNINGTON	JESUP MAX Q TF						x	
AMPAC	K5666 V* TF					x		
PUBLIC	KENTUCKY 31 TF					x	x	
DLF INT'L SEEDS	KORA TF					x		
CEBECO INT'L. SEEDS, INC.	LATEMATE OG					x		
PUBLIC	LINCOLN SB					x	x	
ALLIED SEED	MARATHON RC					x		
SEED RESEARCH OF OREGON	MONTANA MB						x	
ALLIED SEED	OG 9701 OG					x		
PUBLIC	PALATON RC					x		
ALLIED SEED	PEAK SM					x		
SMITH SEED SERVICE	PERSIST OG						x	
DLF INT'L SEEDS	PERUN FS						x	
PUBLIC	POTOMAC OG					x	x	
SMITH FARMS	PROFILE OG						x	
AMPAC	QUANTUM* TF					x		
LEWIS SEED	RAD-MA216* TF					x		
SEED RESEARCH OF OREGON	STOCKMAN TF						x	
ALLIED SEED	SUMMIT TM					x		
SMITH SEED SERVICES	TAKENA OG					x		
SMITH SEED SERVICE	TAKENA 2 OG						x	
DLF INT'L SEEDS	TERELITE II HRG						x	
PUBLIC	TONGA PRT					x	x	
IMPROVED FORAGES	UDDER OG					x		
LEWIS SEED	VALLY SELECT MX					x		
LEWIS	VOYAGER HRG						x	
AMPAC	YORK* SB						x	

1Key to Grass Species

- C= Chicory
- FS= Festulolium
- HRG= Hybrid ryegrass
- LH= Lolium hybridum
- 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

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

³WS = 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

⁴ Varieties not reviewed by the National Alfalfa 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

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	-	HR	HR	HR	HR	HR	HR	-	-	-	-	-	HR
42H169 [^]	4	-	HR	HR	HR	HR	HR	HR	-	-	-	-	-	HR
4A421	4	-	HR	HR	HR	HR	HR	HR	-	HR	HR	MR	-	-
4R429	4	2.0	HR	HR	HR	HR	HR	HR	HR	R	MR	-	-	-
53Q30 [^]	3	2.5	HR	HR	HR	HR	HR	HR	LR	R	MR	-	-	S
54H91	4	3.0	HR	HR	R	HR	HR	R	-	R	MR	MR	-	-
54V46	4	3.1	R	HR	HR	HR	HR	R	R	R	MR	HR	HR	-
5454	4	2.7	R	MR	HR	HR	HR	LR	-	R	MR	-	-	-
5454	4	2.7	R	MR	HR	HR	HR	LR	-	R	LR	-	-	-
6325	3	-	HR	HR	HR	HR	HR	HR	R	R	-	-	-	HR
6400HT	4	2.4	HR	HR	HR	HR	HR	HR	-	HR	-	-	-	-
6410	4	2.7	HR	HR	HR	HR	HR	HR	-	HR	MR	-	-	-
6415	4	1.4	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
6420	4	-	HR	R	HR	R	HR	R	-	R	R	HR	-	-
6530	5	-	HR	HR	HR	HR	HR	HR	MR	HR	R	-	-	-
A 30-06	3	2	HR	HR	HR	HR	HR	HR	-	R	-	-	-	-
ABSOLUTE BRAND GZ [^]	4	-	HR	R	HR	HR	HR	R	-	HR	-	-	-	-
ABSOLUTE BRAND II [^]	4	-	HR	R	HR	HR	HR	R	-	HR	R	-	-	-
ABSOLUTE III BRAND [^]	4	-	HR	R	HR	HR	HR	HR	-	HR	-	-	-	-
ABUNDANCE	4	3.3	HR	R	HR	R	HR	R	-	R	R	HR	-	-
BPR387	4	2	HR	HR	HR	HR	HR	R	-	R	-	-	-	-
DKA 33-16	3	-	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	-	-	-	-	-	-
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	-	-
LEGENDAIRY 5.0 [^]	3	-	HR	HR	HR	HR	HR	HR	-	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	-	-
REBEL	4	-	HR	HR	HR	HR	HR	R	-	HR	-	-	-	-
REBOUND 5.0 [^]	4	-	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	-	-
TRIPLE CROWN	3	-	HR	R	HR	HR	HR	HR	-	HR	MR	-	-	-
TRUMP II [^]	4	-	HR	HR	HR	HR	HR	HR	-	R	R	-	-	-
VERNAL	2	2.0	R	S	MR	S	S	S	-	S	-	MR	-	-
WL 319 HQ	3	1.6	HR	HR	HR	HR	HR	HR	LR	HR	MR	-	-	-
WL 338 SR	4	-	HR	R	HR	HR	HR	HR	-	R	-	-	-	-
WL 345 LH [^]	3	2.4	HR	HR	HR	HR	HR	HR	-	R	MR	MR	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 357 HQ	5	2.1	HR	HR	HR	HR	HR	HR	LR	HR	-	-	-	LR

^{2,3,4}see page 5 for abbreviation key.

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