

CONTENTS

TEST PROGRAM	2
PERFORMANCE DATA	2
SUGGESTIONS FOR COMPARING ENTRIES	2
2007 TEST FIELDS	3
2007 GROWING SEASON RAINFALL	3
2007 TEST FIELD LOCATIONS	3
SOURCES OF SEED	3
2007 ENTRIES	4
DISEASE AND FALL DORMANCY RATINGS	6
RESULTS OF VARIETY TESTS	7
ALFALFA TRIALS	
Freeport	7-9
Urbana	10
GRASS TRIALS	
Urbana	11-12

DATA ALSO AVAILABLE AT: <http://vt.cropsci.uiuc.edu>

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PERFORMANCE OF COMMERCIAL FORAGES IN ILLINOIS

THE UNIVERSITY OF ILLINOIS commercial forage testing program has been testing public and private forages for over 56 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 2007 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 2007 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 100 varieties were tested in 2007.

Number and location of tests In 2007, tests were conducted at 2 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.

2007 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.

2007 GROWING SEASON RAINFALL

Location	April	May	June	July	Aug
Freeport	5.15	1.05	3.30	4.05	10.4
Urbana	2.83	1.50	5.77	5.72	1.48

SOURCES OF SEED

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

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

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., PO Box 318, Tangent, OR, 97389-0318.

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.

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.

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

La Crosse, LaCrosse Forage & Turf, 2541 Commerce St., La Crosse, WI 54603.

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.

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.

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, Inc., 533 Park Avenue, Eugene, OR 97404.

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.

2007 FORAGE LOCATIONS



2007 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport			Urbana	
		04	05	06 07	04	06
HUGHES	321 HYB*			x		
FORAGE GENETICS	42H167*			x		
FORAGE GENETICS	42H169*			x		
MYCOGEN	4A421		x	x		
MYCOGEN	4G418RR			x		
MYCOGEN	4P424			x	x	
MYCOGEN	4R429		x	x		
MYCOGEN	4S419*			x		
PIONEER	53H92			x	x	
PIONEER	53Q30		x	x		
PIONEER	5454		x	x	x	
PIONEER	54H91			x		
PIONEER	54V46		x	x	x	x
GARST	6325			x		
GARST	6400HT			x		
GARST	6415		x	x	x	x
GARST	6417					x
GARST	6420			x		
GARST	6426				x	x
GARST	6443RR				x	
GARST	6530			x		
PGI	A 30-06			x		
AMERICA'S	AMERISTAND 407TQ			x		
BIO PLANT	BPR 382*			x		
AMPAC	CW 045037*					x
DEKALB	DKA41-18RR				x	
DAIRYLAND	DS417*				x	
ALBERT LEA SEED HOUSE	ENFORCER					x
LACROSSE FORAGE & TURF	FSG 400LH		x			x
ALLIED	FSG 406					x
ALLIED	FSG 408DP					x
ALLIED	FSG 505					x
HOFFMAN	HAYBLAZER-444 HYB*		x			x
DARIYLAND	HYBRIFORCE-420 WET		x			x
PRODUCERS CHOICE	INTEGRITY				x	
CROPLAN	LEGENDAIRY 5.0			x		
BIO PLANT	MILESTONE			x		
GREAT PLAINS	NOVA					x
BIO PLANT	PREFORM*			x	x	
TARGET	REBEL					x
BIO PLANT	REBOUND 5.0			x	x	
PGI	REWARD II					x
RENK	SPRING GOLD					x
RENK/BECK	SUMMER GOLD		x			x
TARGET	TS-4007*					x
TARGET	TS-4027*					x
PUBLIC	VERNAL		x	x	x	x
GROWMARK	WL 343 HQ				x	x
GROWMARK	WL 345 LH			x		
GROWMARK	WL 346 LH			x		
GROWMARK	WL 355 RR				x	
PIONEER	X55V48					x

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

2007 Alfalfa and Forage Grass Entries

* experimental Company-Brand	Variety	Freeport				Urbana	
		04	05	06	07	04	06
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	
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	
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
SEED RESEARCH OF OREGON	MONTANA MB					x	
PENNINGTON	OLYMPIA OG						x
OREGRO	ORTET-05 PRT						x
SMITH SEED	PERSIST OG					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 OF OREGON	STOCKMAN TF					x	
SMITH SEED	TAKENA 2 OG					x	
OREGRO	TF-4* TF						x
OREGRO	TUCKER OG						x
AGSP	VERDANT TF						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	

¹Key to Grass Species

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

Disease and Fall Dormancy Ratings of Alfalfa Varieties in Illinois

Variety	FD ²	WS ³	Disease Resistance ⁴										
			BW	VW	FW	AN	PRR	APH		PA	SN	RN	LH
								race 1	race 2				
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
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	-
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
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	-	-	-
6417 [^]	4	1.3	HR	HR	HR	HR	HR	HR	HR	R	-	-	S
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	R	-	-
6530	5	-	HR	HR	HR	HR	HR	HR	MR	HR	R	-	-
A 30-06	3	2	HR	HR	HR	HR	HR	HR	-	R	-	-	-
AMERISTAND 407TQ	4	2.0	HR	HR	HR	HR	HR	HR	R	HR	MR	-	-
BPR 382 [^]	4	-	HR	HR	HR	HR	HR	R	-	-	-	-	-
DKA41-18RR	4	2.0	HR	HR	HR	HR	HR	HR	-	HR	R	-	-
DS417 [^]	4	-	HR	HR	HR	HR	HR	HR	-	-	-	-	-
ENFORCER	4	2.0	HR	HR	HR	HR	HR	HR	-	R	-	-	R
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	-	-	-
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	-
SPRING GOLD	5	-	HR	HR	HR	HR	HR	HR	-	R	-	-	-
SUMMER GOLD	4	-	HR	HR	HR	HR	HR	HR	-	R	HR	R	-
TS-4007 [^]	4	-	HR	HR	HR	HR	HR	-	-	-	-	-	-
TS-4027 [^]	4	-	HR	HR	HR	HR	HR	-	-	-	-	-	-
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
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 355 RR	4	2	HR	HR	HR	HR	HR	HR	-	R	R	MR	-

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

[^] 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