

FORAGE CROPS



ALFALFA

Alfalfa Data Sources, Selection

Yield is the single largest determinant of return per acre for alfalfa production. Selecting alfalfa varieties with high yield potential is fundamental to obtaining high yields. The yield advantage realized with good alfalfa varieties quickly trivializes their greater seed cost.

Yield potential of alfalfa varieties is evaluated in trial plots on Minnesota agricultural experiment stations and cooperating farmers' fields. Plots are seeded yearly at Rosemount, and alternate years at other locations. The trials are conducted using recommended fertility and pest control practices to optimize alfalfa yield and persistence.

Yield performance of tested varieties is presented as a percentage of check variety yields (average for Vernal, Oneida VR, and 5312). Test locations are representative of the variable winter injury risk in different regions of Minnesota. Test locations (see map) include Rosemount (Dakota Co.), Potsdam (Olmsted Co.), Lamberton (Redwood Co.), St. Martin and Richmond (Stearns Co.), Underwood (Otter Tail Co.), and Grand Rapids (Itasca Co.). In addition, some alfalfa varieties are tested for winter survival index (WSI) and forage quality at selected experiment stations of the universities of Minnesota and Wisconsin.

Yield results for alfalfa varieties tested in current Minnesota yield trials (2001 to 2004 seeding years) are listed in tables on pages 10-13. The 2004 yield data for Rosemount 2001 and 2002 seedings were excluded because of uneven stands. Varieties in current winter survival or forage quality trials are listed on page 14. Alfalfa seed marketers, their telephone numbers

and web sites are provided on page 15. Disease resistance information for alfalfa varieties is available on the web at www.alfalfa.org.

Winterhardiness and Winter Survival Index

Severe winters make winterhardiness a primary consideration in variety selection for most areas of Minnesota. Winterhardiness of varieties is difficult to determine because winter injury can occur as a result of many different weather events that cause varied responses in alfalfa plants of differing ages. A standardized test, the North American Alfalfa Improvement Conference (NAAIC) Winter Survival Test, measures the survival of a variety after a severe winter. Tests conducted annually at four locations, Arlington and Lancaster, Wis., and Rosemount and Morris, Minn., are the basis for the winter survival index (WSI), on page 14.

The WSI for each tested variety was averaged over all test locations to provide a robust estimate of winterhardiness and is presented beside yield data in tables on pages 10-13. Varieties are rated from superior (WSI=1) to no survival (WSI=6) for winter-survival ability. Vernal, a traditional winterhardy variety, is rated very good (WSI=2). After a severe winter, injury is expected for varieties rated adequate (4). All varieties tested to date have rated above adequate.

If a variety does not have a WSI, the company has not entered the variety in the Winter Survival Trial. If a WSI number is not available, yield performance in

the third production year after seeding may be the next-best indicator of winter survival potential. Fall dormancy rating used to be a good indicator of winter survival potential, but this is no longer the case with modern varieties.

When selecting alfalfa varieties for your farm, greatest winterhardiness is needed in west central and northwestern Minnesota (winter injury potential map). Because of the high frequency of severe winters in these areas, only varieties with at least very good (WSI=2) winter survival should be selected in these regions. East central and southeastern Minnesota also frequently experience severe winters. Southwestern Minnesota seldom experiences severe winter injury because of dry soils, high soil potassium levels and neutral soil pH. Northeastern Minnesota also seldom experiences severe winter injury because of dependable snow cover.

Forage Yield

Yield results for alfalfa varieties tested in current Minnesota trials are presented on pages 10-13. Yields are expressed as a percentage of check variety yields; for example, "113" means the variety had 13% greater yield than the check varieties. Within each table, varieties are ranked according to their average performance across ALL current trials in



Locations of alfalfa trials.



which they have been tested (2001 to 2004 seedings). Individual tables correspond to test results from different regions of Minnesota.

Greatest confidence should be placed in variety yield information that represents more than five site-years of testing, such as two years of yield data at each of three test sites. Each variety in the yield-result tables has been formatted to reveal how many site-years of Minnesota yield data have been collected. Varieties in bold type have been tested in six or more site-years.

Varietal differences in yield tend to increase with stand age. Thus, to choose a variety for short-term stands, consider especially yield performance the first and second years after seeding, such as yield performance in 2003 and 2004 for a 2002 seeding. For long-term stands, choose varieties based on their performance through the third year after seeding, such as 2004 yield for a 2001 seeding.

Forage Quality

While maturity is the greatest determinant of forage quality or feeding value of alfalfa, varieties also differ. An NAAIC Standardized Forage Quality Test has been performed at Arlington, Wis., and Rosemount, Minn., since 1995. Forage quality of alfalfa varieties in tests seeded in 2003 in Minnesota and Wisconsin are shown on page 14. Data are expressed as milk per ton of forage, milk per acre and relative forage quality (RFQ).

Milk per ton is calculated based on MILK2000, which combines crude protein, neutral detergent fiber (NDF) and

NDF digestibility (NDFD) to predict milk production per ton of forage DM. In MILK2000, the intake of energy from forage for a 1,350-pound milking cow consuming a 30% NDF diet is calculated, and the cow's maintenance energy requirement is then subtracted from energy intake to provide an estimate of energy available from forage for conversion to milk. Forage DM yield multiplied by milk per ton of forage DM provides an estimate of milk produced per acre and combines yield and quality into a single term. For a technical discussion of NDFD and Milk2000, see: www.uwex.edu/ces/forage/pubs/milk2000.htm.

Relative forage quality (RFQ) is a new index with similar mean and range as RFV that includes NDFD in estimates of DMI and TDN to calculate RFQ. For a technical discussion of RFQ, see: www.uwex.edu/ces/crops/uwforage/RFQvsRFV.htm.

Production year evaluation (first year after seeding only) was done by analyzing each of three cuttings taken at late bud to 1/10-bloom stages of maturity.

Disease Resistance

Alfalfa root and crown diseases occur in most Minnesota soils. The most important diseases are Bacterial wilt, Phytophthora root rot, Fusarium wilt, Anthracnose, Verticillium wilt and Aphanomyces root rot (races 1 and 2). Plant resistance for all six diseases is widely available, except for Aphanomyces race 2, for which only a few varieties have known resistance. Variety resistance ratings for each disease are available on the web at www.alfalfa.org. Varietal resistance to potato leafhopper and grazing are also available at www.alfalfa.org. Brown root rot is known to be present in some Minnesota soils, but varietal resistance is currently unknown. While moderate resistance (MR) to a disease will provide protection to a variety under most conditions, either resistance (R) or high resistance (HR) is required for protection under severe disease conditions.

Winter injury can be the result of a combination of injury from cold tempera-

tures and from root and crown diseases. Under some conditions, disease resistances can compensate for lesser levels of cold tolerance. While all varieties can benefit from improved disease resistance, it is especially important that varieties with less than very good (2) WSI have at least (R) levels of disease resistance to stay productive for more than two years after the seeding year under intensive management (four cuts/season) in the east-central and southeastern areas of Minnesota.

Blends

Many companies sell blends, a mixture of two or more varieties, at a reduced price from named varieties. Blends may perform as well as the best varieties or may do very poorly. Since blends may have been derived in various ways, their performance depends on the skill and integrity of the seed company. Disease resistance, yield, winter survival and other characteristics may change within a blend from lot to lot or year to year as blend composition changes. Using certified seed of adapted, high-yielding varieties best assures trueness to name.

The web version of this report is available on the Minnesota Agricultural Experiment Station website, www.maes.umn.edu/pubs.html

More detailed alfalfa variety performance results are available on the University of Minnesota Agronomy Forages website: <http://forages.coafes.umn.edu>

Alfalfa Planting Rate and Date

Bushel Weight, Pounds	60
Seeds/Pound.....	220,000
Planting Rate, Pounds/Acre	
Alone	13
With Grass	5-10
Planting Rate, Seeds Sq.Ft.	
Alone	65
With grass.....	25-50
Planting Date	late April-early May or late July-early August

Alfalfa variety yield as percentage of check varieties at Rosemount (Dakota County).

Variety, in descending order of average performance over all current

Minn. trials. **Bold** varieties have been in Minn. trials for more than 5 site-years.

	Marketer	WSI	2001 Seeding, Harvest Years			2002 Seeding,	2003 Seeding,	All
			2002	2003	2-Year Total	Harvest Year 2003	Harvest Year 2004	Site-Years Average
<i>Checks, Tons/Ac 15%mc Hay</i>	–	–	5.7	5.5	11.2	6.3	6.6	6.7
4A421	Mycogen	2.5	–	–	–	–	104	117
PHABULOUS II	Trelay	–	–	–	–	–	106	115
DKA33-16	Monsanto	–	–	–	–	–	107	115
SETTER	Dahlco	–	–	–	–	107	–	113
GOLDLEAF	Albert Lea/ Gold Country	3.1	–	–	–	111	111	113
WL 319 HQ	W-L	1.8	–	–	–	112	–	113
IGNITE	Jung	–	–	–	–	111	101	113
POINTER	Dahlco	–	–	–	–	112	–	112
POWER 4.2	Power	–	–	–	–	–	106	112
FSG 505	Allied	–	–	–	–	–	111	111
WL 357 HQ	W-L	–	–	–	–	–	111	111
MULTIPLIER 3	Mycogen	–	–	–	–	111	–	111
PHIRST	Bio Plant	–	–	–	–	–	105	111
6410	Garst	2.7	111	101	101	115	–	111
NOTICE II	Channel Bio	–	–	–	–	–	106	111
LEGENDAIRY YPQ	Croplan	–	115	103	103	–	–	111
HYBRIFORCE-400	Dairyland	2.8	115	109	110	118	–	110
AV 3420	AgVenture	–	115	107	107	–	–	110
6420	Garst	–	112	110	110	–	110	109
FSG 351	Allied	–	–	–	–	–	112	109
WEBFOOT SUPREME	Great Lakes	–	–	–	–	109	–	109
WL 342	W-L	–	101	106	106	–	–	109
STAMPEDE	Albert Lea	–	–	–	–	110	108	109
GH 711	Golden Harvest	–	–	–	–	–	113	109
STARBUCK	Spangler	–	119	103	103	–	–	108
620	Garst	2.6	–	–	–	109	–	108
54V46	Pioneer	3.1	–	–	–	–	105	108
EVERMORE	Allied	–	–	–	–	–	108	108
6415	Garst	1.5	–	–	–	–	108	108
8599	Mallard	–	106	109	109	–	–	108
BARALFA 42 IQ	Barenbrug	–	–	–	–	108	–	108
DK A42-15	Monsanto	–	103	111	111	–	–	108
PERFECT	Grassland	–	104	103	103	–	106	108
ALLIANT	Monsanto	–	111	106	106	–	–	108
SOMERSET	Syngenta	3.2	–	–	–	–	102	108
PHABULOUS	Trelay	–	105	100	100	–	–	107
54V54	Pioneer	2.7	112	111	111	–	–	107

Alfalfa variety yield as percentage of check varieties at Rosemount (Dakota County) (continued).

Variety, in descending order of average performance over all current Minn. trials. **Bold** varieties have been in Minn. trials for more than 5 site-years.

	Marketer	WSI	2001 Seeding, Harvest Years			2002 Seeding,	2003 Seeding,	All
			2002	2003	2-Year Total	Harvest Year	Harvest Year	Site-Years Average
<i>Checks, Tons/Ac 15%mc Hay</i>			<i>5.7</i>	<i>5.5</i>	<i>11.2</i>	<i>6.3</i>	<i>6.6</i>	<i>6.7</i>
VITRO II	North-Gro	1.8	–	–	–	–	107	107
HYBRIFORCE-420/WET	Dairyland	3.2	–	–	–	–	105	107
EXTREME	Wensman/LG	–	–	–	–	–	106	106
FSG 406	Allied	–	–	–	–	–	106	106
54Q25	Pioneer	–	–	–	–	–	96	106
ABUNDANCE	Ziller	3.4	–	–	–	–	104	105
6400HT	Garst	2.5	–	–	–	–	96	105
FEAST +EV	Garst	2.2	109	101	101	111	–	105
VITRO	North-Gro	–	111	101	101	–	–	104
ABOUND	Monsanto	–	109	101	102	–	–	104
MILK RIVER	R.J. Hunt	–	108	95	96	104	–	103
ROOT 66	Trelay Inc.	2.1	103	102	102	–	–	103
DAKOTA	Great Plains	3.4	–	–	–	–	97	103
PROLIFIC	Bio Plant	–	110	99	99	–	–	103
54H91	Pioneer	3.0	–	–	–	105	94	102
5312	Check	3.0	109	101	101	104	104	102
ALFASTAR II	KayStar	–	–	–	–	–	107	102
53Q60	Pioneer	3.1	99	105	104	–	–	101
ONEIDA VR	Check	–	102	102	102	98	87	100
RUGGED	Target	–	–	–	–	–	99	99
SURPASS	Albert Lea	–	–	–	–	103	94	99
AGATE	Public	–	–	–	–	–	99	99
PLATINUM	Channel Bio	–	107	93	94	–	–	98
VERNAL	Check	2.0	90	97	97	98	109	98
BARALFA 53HR	Barenbrug	–	–	–	–	–	97	97
WRANGLER	Albert Lea	–	–	–	–	96	91	97
4500	Legend	–	–	–	–	–	96	96
DKA50-18	Monsanto	–	–	–	–	–	90	90
LSD 5%	–	–	11	7	9	11	9	–

Alfalfa variety yield as percentage of check varieties at Potsdam (Olmsted County) and Lambertton (Redwood County).

Variety, in descending order of average performance over all current Minn. trials. Bold varieties have been in Minn. trials for more than 5 site-years.			Potsdam, 2002 Seeding Harvest Years			Lamberton				All Site-Years Average	
Marketer	WSI	2003	2004	2-Year Total	2001 Seeding Harvest Years			2003 Seeding Harvest Year			
		2003	2004	2-Year Total	2002	2003	2004	3-Year Total	2004		
<i>Checks, Tons/Ac 15%mc Hay</i>			6.5	7.3	13.8	7.1	7.2	7.3	21.6	7.1	6.7
4A421	Mycogen	2.5	129	117	123	-	-	-	-	-	117
SETTER	Dahlco	-	114	117	116	-	-	-	-	-	113
IGNITE	Jung	-	123	105	113	-	-	-	-	-	113
POINTER	Dahlco	-	119	105	111	-	-	-	-	-	112
6410	Garst	2.7	128	104	115	102	113	105	106	-	111
HYBRIFORCE-400	Dairyland	2.8	110	110	110	108	107	103	106	-	110
6420	Garst	-	-	-	-	106	108	105	106	108	109
JADE III	NC+	-	-	-	-	114	114	101	109	-	109
WL 342	W-L	-	123	110	116	-	-	-	-	-	109
GH 711	Golden Harvest	-	-	-	-	-	-	-	-	101	109
620	Garst	2.6	120	106	113	-	-	-	-	105	108
54V46	Pioneer	3.1	-	-	-	-	-	-	-	96	108
6415	Garst	1.5	-	-	-	-	-	-	-	94	108
DK A42-15	Monsanto	-	-	-	-	99	108	115	107	-	108
54V54	Pioneer	2.7	-	-	-	102	105	102	103	-	107
HYBRIFORCE-420/WET	Dairyland	3.2	110	97	103	-	-	-	-	98	107
9429	LG Seeds	2.8	-	-	-	104	99	96	100	-	106
54Q25	Pioneer	-	-	-	-	-	-	-	-	100	106
AMERISTAND 403T	Am. Alf.	2.1	120	95	107	103	110	106	106	-	106
FEAST +EV	Garst	2.2	-	-	-	101	111	114	109	97	105
MILK RIVER	R.J. Hunt	-	105	86	95	112	108	101	107	-	103
ROOT 66	Trelay Inc.	2.1	118	71	93	-	-	-	-	-	103
DAKOTA	Great Plains	3.4	-	-	-	-	-	-	-	105	103
54H91	Pioneer	3.0	104	90	97	-	-	-	-	98	102
5312	Check	3.0	105	100	102	105	101	92	99	101	102
350	La Crosse	2.8	107	97	102	-	-	-	-	-	102
ALFASTAR II	KayStar	-	-	-	-	-	-	-	-	97	102
4 TRAFFIC	Kaltenberg	2.4	-	-	-	105	100	99	102	-	102
53Q60	Pioneer	3.1	-	-	-	94	102	105	100	-	101
ONEIDA VR	Check	-	97	107	103	96	99	98	97	97	100
VERNAL	Check	2.0	98	93	95	99	100	111	103	101	98
ONEIDA ULTRA	La Crosse	-	103	90	96	-	-	-	-	-	97
RADIANT	Ampac	-	-	-	-	-	-	-	-	96	96
LSD 5%	-	-	13	19	11	9	ns	8	-	12	-

Alfalfa variety yield as percentage of check varieties at St. Martin (Stearns County), Richmond (Stearns County), Underwood (Otter Tail County) and Grand Rapids (Itasca County).

Variety, in descending order of average performance over all current Minn. trials. Bold varieties have been in Minn. trials for more than 5 site-years.			St. Martin, 2002 Seeding Harvest Years			Richmond, 2003 Seeding Harvest Year	Underwood, 2004 Seeding Harvest Year	Grand Rapids, 2003 Seeding Harvest Year	All Site-Years Average
5 site-years.	Marketer	WSI	2003	2004	2-Year Total	2004	2004	2004	Average
<i>Checks, Tons/Ac 15%mc Hay</i>									
			5.4	7.4	12.8	6.5	4.2	5.5	6.7
WL 348 AP	W-L	–	–	–	–	120	–	–	120
WL 327	W-L	–	123	108	114	–	–	–	116
PHABULOUS II	Trelay	–	–	–	–	124	–	–	115
DKA33-16	Monsanto	–	–	–	–	123	–	–	115
REBOUND 5.0	Croplan	–	–	–	–	–	114	–	114
VALUE PLUS I	Brown Seed	2.6	–	–	–	114	–	–	114
SETTER	Dahlco	–	122	112	116	–	–	108	113
GOLDLEAF	Albert Lea/ Gold Country	3.1	–	–	–	118	–	–	113
WL 319 HQ	W-L	1.8	124	117	120	–	99	–	113
IGNITE	Jung	–	119	114	116	115	–	–	113
POINTER	Dahlco	–	119	105	111	–	–	–	112
POWER 4.2	Power	–	–	–	–	118	–	–	112
LIGHTNING III	Jung	–	–	–	–	–	111	–	111
PHIRST	Bio Plant	–	–	–	–	116	–	–	111
6410	Garst	2.7	125	115	119	–	–	–	111
NOTICE II	Channel	–	–	–	–	116	–	–	111
LEGENDAIRY YPQ	Croplan	–	122	116	119	–	–	104	111
MAXIMUM I	Johnson	–	119	101	109	–	–	–	110
HYBRIFORCE-400	Dairyland	2.8	114	108	111	–	–	–	110
6420	Garst	–	–	–	–	117	–	–	109
FSG 351	Allied	–	–	–	–	–	107	–	109
GH 711	Golden Harvest	–	–	–	–	112	–	–	109
620	Garst	2.6	115	100	107	113	–	99	108
54V46	Pioneer	3.1	–	–	–	124	107	109	108
6415	Garst	1.5	–	–	–	122	107	–	108
PERFECT	Grassland	–	123	107	114	–	–	–	108
SOMERSET	Syngenta	3.2	–	–	–	117	–	105	108
PHABULOUS	Trelay	–	119	112	115	–	–	–	107
FSG 408DP	Allied	–	–	–	–	–	107	–	107
HYBRIFORCE-420/WET	Dairyland	3.2	118	113	115	111	105	104	107
EXTREME	Wensman/LG	–	–	–	–	115	108	95	106
9429	LG Seeds	2.8	125	106	114	–	–	–	106
54Q25	Pioneer	–	116	106	110	110	112	100	106
AMERISTAND 403T	Am. Alf.	2.1	–	–	–	–	–	99	106
ABUNDANCE	Ziller	3.4	–	–	–	107	–	–	105
6400HT	Garst	2.5	–	–	–	112	107	–	105
FEAST +EV	Garst	2.2	120	102	110	107	–	83	105
A 30-06	PGI	1.9	–	–	–	110	108	94	104
MILK RIVER	R.J. Hunt	–	119	104	111	–	–	–	103
ROOT 66	Trelay Inc.	2.1	121	107	113	–	–	–	103
DAKOTA	Great Plains	3.4	–	–	–	107	–	–	103
54H91	Pioneer	3.0	122	100	110	112	–	96	102
5312	Check	3.0	112	106	109	106	94	98	102
6200HT	Garst	–	–	–	–	–	102	–	102
BOBWHITE	NC+	–	–	–	–	–	101	–	101
ONEIDA VR	Check	–	99	97	98	103	108	109	100
VERNAL	Check	2.0	89	97	94	91	98	93	98
WRANGLER	Albert Lea	–	101	100	100	–	–	–	97
LEGENDAIRY 5.0	Croplan	–	–	–	–	–	95	–	95
LSD 5%	–	–	10	8	7	8	15	13	–

**Alfalfa variety yield, milk production potential and forage quality;
2004 season totals and weighted averages from trial seeded in 2003 at Rosemount, Minn.**

Variety, listed in descending order of milk/acre.	Yield, Tons DM/Acre	Milk/Ton ^a , 100 lb/T	Milk/Ac ^a , 100 lb/Acre	RFQ ^b	CP, % DM	NDF, % DM	NDFD ^c , % NDF
6415	6.09	31.0	189	169	20	40	51
BARALFA 53 HR	6.07	30.5	185	163	20	40	51
DKA33-16	5.91	31.0	183	172	20	39	51
4A421	5.96	30.7	183	166	21	40	51
EXTREME	5.92	30.6	181	166	20	40	51
VERNAL	5.82	30.4	177	164	21	41	51
54Q25	5.72	30.9	177	167	20	40	52
WL 322 HQ	5.60	31.2	175	175	21	38	52
CIMARRON	5.53	30.7	170	168	21	40	51
Mean	5.85	30.8	180	168	21	40	51
LSD 5%	ns	ns	ns	ns	ns	ns	ns
CV %	7.0	1.7	7.1	4.5	3.0	3.4	1.9

**Alfalfa variety yield, milk production potential and forage quality;
2004 season totals and weighted averages from trial seeded in 2003 at Arlington, Wis.**

Variety, listed in descending order of milk/acre.	Yield, Tons DM/Acre	Milk/Ton ^a , 100 lb/T	Milk/Ac ^a , 100 lb/Acre	RFQ ^b	CP, % DM	NDF, % DM	NDFD ^c , % NDF
BARALFA 53 HR	7.82	28.7	224	152	23	42	51
EXTREME	7.79	28.4	221	149	23	42	51
54Q25	7.68	28.7	221	150	22	43	52
VERNAL	7.77	28.2	219	146	23	44	52
4A421	7.56	28.5	216	150	23	42	51
6415	7.47	28.6	213	152	23	42	51
DKA33-16	7.52	28.3	213	148	23	43	51
Mean	7.66	28.5	218	149	23	42	51
LSD 5%	ns	0.3	ns	4	ns	1	ns
CV %	7.8	0.7	7.7	1.6	1.8	1.3	0.9

^aMilk/Ton and Milk/Acre, are based on MILK2000, Univ. of Wisconsin. For a technical discussion of milk production potential see:
<http://www.uwex.edu/ces/forage/pubs/milk2000.htm>

^bRFQ = Relative Forage Quality. For a technical discussion of RFQ see: <http://www.uwex.edu/ces/crops/uwforage/RFQvsRFV.htm>

CP = Crude Protein, NDF = Neutral Detergent Fiber

^cNDFD% = NDF digestibility. For a technical discussion of NDF digestibility see: <http://www.uwex.edu/ces/crops/uwforage/NDFDig.html>

2004 Winter Survival Test Results from Minnesota and Wisconsin.

Variety	Rosemount, Minn.	Morris, Minn.	Arlington, Wis.	Lancaster, Wis.	Mean
ZG 9830	1.3	0.8	1.2	0.8	1.0
ZG 0234	1.6	0.9	1.6	1.2	1.3
ZG 0246	2.1	1.1	1.7	1.2	1.5
5262	1.9	2.2	2.3	2.7	2.3
6400HT	2.3	2.8	2.7	2.6	2.6
4A421	2.5	2.6	3.2	3.2	2.9
WL 325 HQ	3.1	3.1	2.9	3.3	3.1
54V46	2.6	3.1	3.4	3.3	3.1
WL 316	4.2	4.5	3.4	3.6	3.9
ARCHER	4.0	4.6	4.7	4.5	4.4
CUF 101	6.0	5.8	6.0	6.0	6.0

Winter survival index: 1 = superior winter survival. 2 = very good. 3 = good. 4 = adequate. 5 = low. 6 = no winter survival.

2004 Forage Seed Sources.

Marketer	Company	City	State	Zip	Phone (main)	Phone (other)	Web URL / Access
AgVenture	AgVenture East	Kasson	MN	55944	800-657-4890		www.agventure.com
Albert Lea	Albert Lea Seed House	Albert Lea	MN	56007	507-373-3161		www.alseed.com
Allied	Allied Seed	Macon	MO	63552	800-880-8127		www.alliedseed.com
Am. Alf.	America's Alfalfa	Princeton	IL	61356-0404	800-873-2532		www.americasalfalfa.com
AMPAC	AMPAC Seed Co.	Winona Lake	IN	46590	866-311-4869		www.ampacseed.com
Barenburg	Barenburg Midwest	Vinton	IA	52349	888-470-5569	800-547-4101	www.barusa.com
Bio Plant	Bio Plant Research	Camp Point	IL	62320	800-593-7708		—
Brown Seed	Brown Seed Farms	Bay City	WI	54723	800-712-7696	715-262-4331	www.browngenetics.com
Channel Bio	Channel Bio Corp	Kentland	IN	47951	800-369-8218		www.channelbio.com
CROPLAN	CROPLAN Genetics	St. Paul	MN	55164-0281	800-851-8810	651-634-8105	www.croplangenetics.com
Dahlco	Dahlco Seed	Cokato	MN	55321	320-286-5982		www.dahlco.com
Dairyland	Dairyland Seed Co.	West Bend	WI	53095	800-236-0163		www.dairylandseed.com
Elk Mound	Elk Mound Feed & Farm Supply	Elk Mound	WI	54739	715-879-5556		www.elkmoundseed.com
Garst	Garst Seed Co.	Dawson	MN	56232	320-769-4445	608-452-3844	www.garstseed.com
Geertson	Geertson Seed Farm	Adrian	OR	97901	800-843-0390		—
Gold Country	Gold Country Seed	Hutchinson	MN	55350	320-587-1050		www.goldcountryseed.com
Grassland	Grassland Central	Jordan	MN	55352	952-492-2990		—
Great Lakes	Great Lakes Hybrids	Ovid	MI	48866	989-834-2251		www.glh-seeds.com
Great Plains	Great Plains Research Co. Inc.	Apex	NC	27539	919-362-1583		www.greatplainsresearch.com
Golden Harvest	JC Robinson Seeds/Golden Harvest	Sherburne	MN	56171	507-764-3640	612-565-2945	www.goldenharvestseeds.com
Johnson	Johnson Seeds	Dassel	MN	55325	320-275-2430		www.seed.ab.ca/ grower/Johnson
Jung	Jung Seed Genetics	Eyota	MN	55934	507-545-0151	800-242-1855	www.jungseedgenetics.com
Kaltenberg	Kaltenberg Seed Farms	Waubesa	WI	53597	800-383-3276		www.kaltenburgseeds.com
KayStar	KayStar Seeds	Huron	SD	57350	605-352-8791		www.kaystarseed.com
La Crosse	La Crosse Forage & Turf Seed Co.	LaCrosse	WI	54603	608-783-9560		—
Legend	Legend Seeds	DeSmet	SD	57231	605-854-3346		www.legendseeds.com
LG Seeds	LG Seeds	Sauk Rapids	MN	56379	320-248-0042	715-426-7577	www.lgseeds.com
Mallard	Mallard Seed	Plainview	MN	55964	507-534-2300		—
Monsanto	Monsanto Global Seed Group	St Louis	MO	63167	314-694-5701		www.monsanto.com
Mycogen	Mycogen Seeds	Holmen	WI	54636	608-526-2627	317-337-4007	www.mycogen.com
NC+	NC+ Hybrids	Spencer	IA	51301	712-262-9216	402-467-2517	www.nc-plus.com
North-Gro	North-Gro Seeds	Cuba City	WI	53807	608-744-7333		www.northgro.com
Olds Seed	Olds Seed Solutions	Madison	WI	53707	800-356-7333	608-249-9291	seedsolutions.com
PGI Alfalfa	PGI Alfalfa Inc.	Story City	IA	50248	800-247-3967	515-733-5274	—
Pioneer	Pioneer Hi-Bred International Inc.	Johnston	IA	50131-1150	515-334-6426		www.pioneer.com
Power	Power Seeds Inc.	Fraserville	ONT	KOL IVO	705-944-5600		—
Producers	Producers Hybrids, Inc.	Battle Creek	NE	68715	888.675.3190		www.producershybrids.com
R.J. Hunt	R.J. Hunt Seed Co.	Wadena	MN	56482	218-631-4190		—
Ramy	Ramy International	Mankato	MN	56001	800-658-7269		—
Renk	Renk Seed Co.	Sun Prairie	WI	53590	800-289-7365	608-837-7351	www.renkseed.com
Spangler	Spangler Seedtech Inc	Jefferson	WI	53549	800-284-1080	414-674-4606	www.spanglerseed.com
Specialty	Specialty Seeds	Cold Spring	MN	56307	320-845-7689		www.specialtyseedsalbany.com
Syngenta	Syngenta Seeds Inc.	Golden Valley	MN	55427	763-593-7286		www.syngenta.com
Target	Target Seed, LLC	Homesdale	ID	83628	208-337-6201		www.targetseed.com
Trelay Inc.	Trelay Inc.	Livingston	WI	53554	608-943-6363		www.trelay.com
W-L	W-L Research, Inc.	Madison	WI	53708-8112	800-406-7662	608-240-0630	www.wlresearch.com
Ziller	Ziller Seed Co. Inc.	Bird Island	MN	55310	320-365-3674		www.zillerseed.com
U of MN	University of Minnesota Forages	Saint Paul	MN	55108			http://forages.coafes.umn.edu