

FORAGE CROPS



Locations of Alfalfa Trials.

Successful alfalfa production depends on selecting the best varieties for a particular farm. Varieties have been compared for yield in trial plots on Minnesota Agricultural Experiment Station fields: yearly at Rosemount, alternate years at a southeastern site, Lamberton, Morris, a Stearns County site, Crookston and Grand Rapids. The trials are conducted using recommended fertility and pest control practices to optimize yield and persistence.

Test results from new and previous seedings of varieties currently available in Minnesota are published as accumulated performance years averaged as a percent of check varieties. Test locations are representative of the risk of winter injury in specific regions of Minnesota: Rosemount and Waseca (replaced by Lewiston in 1996, Plainview/Potsdam in 1998) in southeastern, Lamberton in southwestern, Morris in west central, Stearns County (St. Martin, Melrose) since 1998 in central, Crookston in northwestern and Grand Rapids in northeastern Minnesota (see Locations map above). Varieties of alfalfa are tested for winter survival and forage quality at selected experiment stations of the Universities of Minnesota and Wisconsin.

Early each fall, alfalfa developers and marketers who have provided current contact addresses are asked to declare which vari-

eties approved for seed certification will be marketed in Minnesota for the next seeding year. The varieties reported in those responses are listed on pages 22-25; each variety is keyed to distributors' addresses and phone numbers on pages 26-27. Varieties seeded in past or present Minnesota yield trials are included on pages 12-19, those with winter survival or forage quality performance data are listed on pages 20-21.

Winterhardiness

Severe winters make winterhardiness a primary consideration in variety selection for most areas of Minnesota. The greatest winterhardiness is needed in the west central and northwest Minnesota area (see Winter Injury Potential map). Because of the high frequency of severe winters in this area, only varieties with very good winter survival should be selected. The east central and southeast area also experience frequent severe winters. The southwest area seldom experiences severe winter injury because of dry soils, high soil potassium levels and neutral soil pH. The northeast area seldom experiences severe winter injury because of dependable snow cover.

Winter Survival

Winter survival of varieties is extremely 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 or five locations: Arlington, Lancaster and Marshfield, Wis., and Rosemount and Morris, Minn., are the basis for the winter survival index (WSI), page 20. The WSI was averaged over all test locations to provide a robust estimate of winter survival and is presented beside

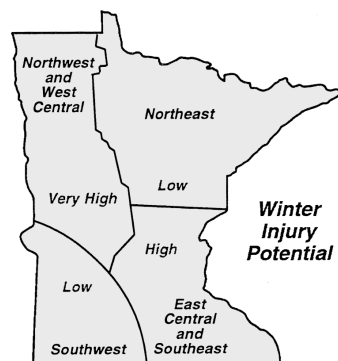
yield data on pages 12-19. Varieties are rated from Superior to Adequate in winter survivability. Vernal, a traditional winter-hardy variety is rated Superior. Varieties rated Adequate in winter survivability are expected to be injured the most after a severe winter. Varieties tested to date are rated above Adequate. If a variety does not have a WSI, (company has not entered variety in winter survival trial) the fall dormancy index is the next best indicator of winterhardiness (1 = very winterhardy; 2 = winterhardy; 3 and 4 = moderately winterhardy).

Fall Dormancy

Fall dormancy ratings are shown on pages 22-25, with varieties listed alphabetically. Fall dormancy ratings describe the relative amount of fall growth of alfalfa varieties. Very fall-dormant varieties have little fall growth and are slow to recover after cutting. Fall-dormant varieties are adaptable to all areas of the state. Moderately fall-dormant varieties produce good fall growth, are characterized by rapid recovery after harvest, and usually reach 1/10 bloom several days earlier than more dormant varieties. Although increased fall dormancy has traditionally been associated with greater winter survival, the WSI is now considered a better predictor of winter survival.

Forage Yield

Alfalfa yields are presented in an enhanced format, different from previous reports. Greater confidence should be



placed in data that include three or more tests. To indicate which data have fewer tests, each yield number is formatted to show how many tests it represents. Data in bold type represent three or more tests, data in regular type represent two tests, and data in italic type represent only one test. Each seeding at any location is a “test”.

Varieties are ranked first by the average of year 1 and year 2 yields, then by year 3 yield, then by year 1 yield. Results are presented in two parts, 1) a summary over all locations and a summary of southeastern sites, and 2) a summary over all locations and individual location data for the west-central, central and northeast sites. Yield is expressed as a percent of the average of check varieties identified in each table.

Varietal differences in yield tend not to be as great the first two years after seeding as with older stands. Thus, to choose a variety for short-term stands, 1 to 2 years after seeding, use the all-location yield for 1+2 years after seeding. For long-term stands, choose varieties based on their performance over all locations 3 years after seeding. Note that varieties that have been seeded in fewer than 3 tests cannot yet be considered adequately characterized for yield performance.

Forage Quality

Alfalfa varieties differ in forage quality or feeding value. Alfalfa varieties have been evaluated for forage quality at Rosemount since 1991. An NAAIC Standardized Forage Quality Test has been performed at Arlington, Wis., and Rosemount, Minn., since 1995. Varieties in the seeding year are evaluated on one cut taken in late August. Production-year evaluation (first year after seeding only) is done by analyzing each of three cuttings taken at late bud to 1/10-bloom stages of maturity.

Relative Feed Value (RFV) index ranks varieties on their potential digestible dry matter intake. Milk per ton is estimated using a variety’s crude protein and neutral detergent fiber concentrations to determine the amount of alfalfa needed to match the protein and energy needs of a

1,350-pound cow producing 60 pounds of milk per day with a diet including corn grain and minerals. Milk per acre quantifies the forage quality of an alfalfa variety as “tons per acre” multiplied by “milk per ton” (theoretical milk production per ton, calculated from protein and fiber values).

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. Plant resistance is available for all six diseases. The variety resistance ratings for each disease are presented on pages 22-25. 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 temperatures 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 for moderately fall-dormant varieties to 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 southeast area of Minnesota.

Bacterial Wilt – This disease is prevalent in most areas of the state. Wilt-susceptible varieties are poor risks and should not be grown. They generally show losses in stand by the end of the second year after seeding. In some cases where infection is severe, stand losses are often observed by the end of the first year after seeding. Stand reductions after winter are often due to a combination of wilt damage and winter injury.

Phytophthora Root Rot – This fungal disease is a major concern on poorly drained soils especially in the east central and southeast area of the state. It can cause stand losses of seedlings and can contribute to lower productivity in older

stands if the soil remains wet for a week or more.

Fusarium Wilt – The fungus that causes Fusarium wilt is present in most soils. It contributes to stand decline mainly in combination with other disease organisms. Therefore, resistance to Fusarium wilts in addition to resistance to both bacterial wilt and Phytophthora root rot contributes to longer stand life.

Anthracnose – This fungus disease, first found in Minnesota in 1978, has become more prevalent each year, but only in the east central and southeast area. It infects stems and crowns and kills susceptible plants. Because anthracnose is favored by hot, moist conditions it is most frequently observed in southeast Minnesota.

Verticillium Wilt – This potentially destructive fungus disease was first found in several eastern Minnesota fields in 1981. It has usually been found in 2- or 3-year-old fields and its spread in the state has been slow. Planting resistant varieties will help ensure long-life stands. Varieties having at least a low level of resistance are indicated on pages 22-25.

Aphanomyces Root Rot – This disease is associated with very slowly drained soils and is easily confused with Phytophthora root rot. It stunts and kills seedlings as well as causing a chronic root disease in established plants. Few cases of this disease have been identified in Minnesota. Consider planting a variety with Aphanomyces resistance if Phytophthora root rot resistant varieties fail to persist.

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

Alfalfa Planting Rate and Date

Bushel Weight, Pounds	60
Seeds/Pound.....	220,000
Planting Rate, Pounds/Acre	
Alone	11
With Grass.....	7
Planting Rate, Seeds Sq.Ft.	
Alone	55
With grass	35
Planting Date	Early Spring, Late Summer

Alfalfa yield as percent of checks and winter survival index (WSI) at ALL and southeastern sites.

(**Bold** yield numbers represent 3 or more tests; regular type, 2 tests, *Italic* type, only 1 test.)¹

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year							
		All Sites			Test Sites ³ (Seedings)	Production ⁴ Years 1-3	Rosemount-Southeast ⁵		
		Yr 1	Yr 1+2	Yr 3			Yr 1	Yr 1+2	Yr 3
Checks, T/Ac 15%mc Hay		5.97	5.90	5.31	40	95	6.28	6.21	5.62
Webfoot Supreme	–	<i>118</i>	<i>120</i>	–	1	2	<i>118</i>	<i>120</i>	–
Pasture Plus	–	<i>110</i>	<i>113</i>	–	1	2	<i>110</i>	<i>113</i>	–
Laser	–	111	112	<i>102</i>	3	7	<i>116</i>	<i>115</i>	<i>102</i>
Perfect	–	<i>115</i>	<i>112</i>	–	1	2	–	–	–
Persist	–	110	112	–	7	13	108	112	–
WinterMax	–	111	111	<i>105</i>	2	5	<i>110</i>	111	–
GH755	–	117	111	<i>91</i>	4	9	112	109	<i>91</i>
MultiQueen	–	117	111	–	3	5	<i>104</i>	–	–
Paragon BR	–	111	<i>110</i>	<i>116</i>	1	3	<i>111</i>	<i>110</i>	<i>116</i>
Magnum III	–	109	110	114	9	25	111	110	110
GoldLeaf	2.8	<i>116</i>	<i>110</i>	<i>113</i>	4	3	<i>116</i>	<i>110</i>	<i>113</i>
350	2.8	108	110	<i>113</i>	5	9	109	111	<i>113</i>
Surpass	–	110	110	108	5	10	112	112	<i>107</i>
MagnaGraze	–	111	110	<i>101</i>	2	5	111	110	<i>101</i>
Quantum	–	114	110	<i>99</i>	4	9	109	107	<i>99</i>
Magnum III-Wet	–	110	110	<i>99</i>	6	13	111	110	<i>99</i>
9326	–	108	110	<i>98</i>	7	12	111	112	<i>98</i>
Root 66	–	<i>107</i>	<i>110</i>	–	1	2	<i>107</i>	<i>110</i>	–
6410	2.7	104	110	–	8	7	108	112	–
Radiant	–	<i>108</i>	<i>109</i>	<i>117</i>	1	3	<i>108</i>	<i>109</i>	<i>117</i>
Magnum V	3.0	105	109	<i>112</i>	10	18	105	106	<i>112</i>
Imperial	–	107	109	107	7	14	106	110	107
Abundance	–	106	109	<i>107</i>	3	5	106	109	<i>107</i>
Voyager II	–	109	109	104	7	16	108	109	<i>101</i>
Monument	–	106	109	<i>102</i>	4	9	106	109	–
Magnum IV	–	109	109	<i>100</i>	4	9	109	107	<i>100</i>
Rebound 4.2	2.4	108	109	–	5	7	<i>108</i>	–	–
Target II Plus	–	109	108	<i>117</i>	3	7	111	109	<i>117</i>
Harvstar 812HY	–	<i>110</i>	<i>108</i>	<i>111</i>	1	3	<i>110</i>	<i>108</i>	<i>111</i>
631	–	108	108	109	12	26	108	107	109
Gateway	–	111	108	<i>108</i>	3	7	110	107	<i>108</i>
Prolific	–	<i>108</i>	<i>108</i>	<i>107</i>	1	3	<i>108</i>	<i>108</i>	<i>107</i>
620	2.5	108	108	106	17	33	107	108	107
WL 324	–	107	108	105	6	14	106	109	<i>118</i>
2444	–	107	108	103	2	6	–	–	–
FQ315	–	109	108	<i>100</i>	4	7	107	<i>107</i>	<i>100</i>
Extend	2.9	108	108	99	3	8	106	108	<i>101</i>
BigHorn	3.1	107	108	97	4	10	106	105	97
WL 325 HQ	–	107	108	94	6	13	108	110	–
Geneva	2.8	107	108	–	6	10	107	110	–
Spirit	–	106	108	–	4	7	107	<i>114</i>	–
A4230	–	<i>108</i>	<i>107</i>	<i>117</i>	2	3	<i>108</i>	<i>107</i>	<i>117</i>
Jade II	–	106	107	<i>109</i>	4	8	105	107	–
630	–	105	107	109	11	29	107	110	113

¹ Each seeding in any location counts as one "Test." Test data from experimental seed is retired as data from tests on commercial seed is sufficient to replace it.

² Winter Survival Index: 1=superior, 2=very good, 3=good, 4=adequate, 5=low, 6=none. WSI is from joint Minnesota-Wisconsin 1996-2000 trials. ³ Locations: Rosemount-Southeast (Waseca/Lewiston/Plainview), Morris-Crookston-Stearns County, Lamberton, Grand Rapids. ⁴ Total production years (after seed year) for any location with reliable data. Year 1+2 averages 2 production years. Seed years or production years that winterkilled or developed unacceptably variable stands are excluded. ⁵ Seedings at Waseca were discontinued after 1994 and replaced by a Southeast site near Plainview.

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year							
		All Sites			Test Sites ³ (Seedings)	Production ⁴ Years 1-3	Rosemount–Southeast ⁵		
		Yr 1	Yr 1+2	Yr 3			Yr 1	Yr 1+2	Yr 3
AlfaStar	–	113	107	106	3	7	104	104	110
Vitro	2.6	108	107	106	4	10	108	109	102
Baralfa 32 IQ	3.0	108	107	105	4	9	102	103	105
5454	2.3	107	107	104	23	55	107	108	108
Innovator+Z	2.3	105	107	104	5	13	106	107	103
Defiant	2.3	108	107	102	5	12	107	108	104
Green Feast	2.9	111	107	101	1	3	111	107	101
Milk River	–	110	107	–	9	7	102	–	–
FQ314	3.0	106	107	–	4	7	105	106	–
Garst 645	2.8	107	106	114	13	32	106	106	104
Trident II	–	107	106	112	6	17	100	101	94
Enhancer	–	106	106	111	3	9	106	107	108
Dominator	–	107	106	108	4	9	109	108	108
Bounty	–	107	106	108	3	8	106	104	108
DK142	2.9	106	106	108	2	6	106	106	108
Notice	2.6	106	106	104	3	9	104	104	103
WinterStar	2.4	107	106	102	7	18	106	104	103
Evolution	–	107	106	100	4	11	110	111	101
Iroquois	–	104	106	99	12	26	103	104	98
DK140	2.8	106	106	98	10	21	105	106	103
Aspen	3.2	109	106	97	3	8	104	103	99
Columbia 2000	3.1	107	106	97	6	13	106	106	101
Rustler II	–	108	106	–	3	6	106	104	–
AmeriStand 201+Z	2.0	104	106	–	7	12	105	108	–
Platinum	–	101	106	–	3	3	105	108	–
5312	3.0	105	105	105	15	35	106	108	110
Breakout	2.5	105	105	104	3	7	105	105	–
Yielder	–	100	105	104	2	5	100	105	104
TMF 421	–	106	105	103	6	14	102	102	108
Rainier	2.9	105	105	103	7	17	106	105	103
WinterKing	2.5	106	105	102	7	16	105	104	107
Avalanche+Z	2.4	103	105	102	8	20	110	109	100
A-395	–	107	105	101	5	11	105	105	101
329	–	112	105	100	3	8	112	107	100
WinterGold	2.6	106	105	99	4	7	102	103	99
GH766	–	102	105	99	7	15	105	106	100
DK124	2.8	104	105	98	13	16	105	104	–
Forecast 3000	–	102	105	–	2	4	–	–	–
A 30-06	1.9	97	105	–	4	3	106	110	–
AmeriGraze 401+Z	–	102	104	106	4	9	100	101	106
Sterling	–	106	104	105	4	12	105	102	104
DK127	2.6	105	104	104	16	32	108	107	107
WetLand	–	105	104	102	6	12	104	104	102
WL 232 HQ	2.8	104	104	102	7	12	104	105	102
Award	3.3	105	104	101	7	14	106	103	101
Viking 1	3.0	104	104	101	10	24	105	107	101
Nemesis	–	103	104	101	4	12	102	104	105
GH757	3.1	103	104	101	2	5	103	104	101
Affinity+Z	–	102	104	100	3	8	100	104	101
Ace	3.1	102	104	99	4	9	96	101	99
Mainstay	2.7	103	104	97	4	10	103	104	97
WinterGreen	2.5	105	104	96	3	7	106	107	–

Alfalfa yield as percent of checks and winter survival index (WSI) at ALL and southeastern sites (continued).

(**Bold** yield numbers represent 3 or more tests; regular type, 2 tests, *Italic* type, only 1 test.)¹

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year							
		All Sites			Test Sites ³ (Seedings)	Production ⁴ Years 1-3	Rosemount-Southeast ⁵		
		Yr 1	Yr 1+2	Yr 3			Yr 1	Yr 1+2	Yr 3
53Q60	3.0	104	104	<i>94</i>	13	16	103	104	–
Somerset	2.2	102	<i>104</i>	–	5	3	102	<i>104</i>	–
Reliance	–	<i>100</i>	<i>103</i>	<i>120</i>	1	3	<i>100</i>	<i>103</i>	<i>120</i>
Depend+EV	–	106	103	114	4	9	105	103	<i>98</i>
Feast+EV	2.2	105	103	105	6	7	105	<i>104</i>	–
Complete	2.7	104	103	104	3	7	108	<i>106</i>	<i>103</i>
Demand	–	106	103	102	3	8	108	104	<i>101</i>
GH767	3.0	105	103	102	4	11	105	103	102
Blazer XL	2.8	108	103	101	3	8	<i>106</i>	<i>101</i>	–
Wrangler	–	102	103	101	10	23	104	106	107
DK141	3.4	106	103	98	10	21	104	104	<i>103</i>
Legendairy 2.0	2.8	105	103	98	4	10	101	99	98
Multi 5301	–	103	103	<i>97</i>	5	11	101	102	<i>97</i>
Multiplier II	–	105	103	96	5	12	104	101	<i>96</i>
Legend Gold	–	103	<i>103</i>	<i>96</i>	5	6	110	<i>107</i>	<i>96</i>
Spur	–	105	103	–	2	4	105	103	–
Samurai	–	103	<i>103</i>	–	2	3	103	<i>103</i>	–
Pristine	–	102	103	–	2	4	102	103	–
Magnum V-Wet	–	<i>102</i>	<i>103</i>	–	4	2	<i>102</i>	<i>103</i>	–
Abound	–	101	<i>102</i>	<i>111</i>	8	6	101	<i>102</i>	111
Gold Plus	–	102	102	<i>109</i>	4	9	99	101	<i>109</i>
TMF Generation	–	103	102	105	5	15	106	105	105
WL 252 HQ	–	94	<i>102</i>	<i>105</i>	3	6	106	108	<i>105</i>
Passport	–	<i>104</i>	102	<i>104</i>	1	3	<i>104</i>	<i>102</i>	<i>104</i>
Oneida (check)	–	104	102	104	8	21	103	102	103
Ranger	2.9	102	102	102	8	24	100	100	101
Hunter	–	103	<i>102</i>	<i>99</i>	3	4	103	<i>102</i>	<i>99</i>
9429	2.8	103	102	<i>99</i>	5	7	103	<i>103</i>	<i>99</i>
Sprint	2.6	102	<i>102</i>	<i>99</i>	4	5	103	<i>102</i>	<i>99</i>
53V63	2.8	104	102	<i>96</i>	6	13	103	99	–
GH750	–	101	<i>102</i>	–	4	4	<i>102</i>	<i>102</i>	–
Emperor	2.6	99	102	–	2	4	99	102	–
Alliant	–	<i>99</i>	<i>101</i>	<i>113</i>	5	3	99	<i>101</i>	<i>113</i>
MP2000	2.7	102	101	108	3	9	<i>102</i>	<i>103</i>	<i>108</i>
Rhino	–	104	101	<i>106</i>	3	7	101	99	<i>106</i>
2888	3.2	102	101	104	4	11	102	101	104
205	1.6	103	101	102	7	19	104	101	103
Lactator	3.1	102	101	<i>100</i>	3	7	102	101	<i>100</i>
Empire	–	103	101	99	6	16	102	99	<i>96</i>
Clean Sweep 1000	–	<i>102</i>	<i>101</i>	<i>95</i>	1	3	<i>102</i>	<i>101</i>	<i>95</i>
Multi 5302	–	103	101	–	2	4	–	–	–
Vernal (check)	1.9	100	100	100	40	95	100	100	100
Oneida VR (check)	–	99	100	100	24	46	103	103	103
8498	3.1	98	100	100	3	8	99	101	<i>101</i>
Nutrimax	–	99	<i>100</i>	<i>95</i>	1	3	99	<i>100</i>	<i>95</i>
400SCL	–	<i>102</i>	<i>100</i>	–	1	2	<i>102</i>	<i>100</i>	–
Mariner II	–	<i>97</i>	<i>100</i>	–	1	2	<i>97</i>	<i>100</i>	–
Agate	–	98	99	106	20	56	99	101	110
AmeriGuard 301	–	99	99	95	2	6	97	<i>98</i>	<i>97</i>
9111	–	99	99	–	2	4	–	–	–

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year							
		All Sites			Test Sites ³ (Seedings)	Production ⁴ Years 1-3	Rosemount–Southeast ⁵		
		Yr 1	Yr 1+2	Yr 3			Yr 1	Yr 1+2	Yr 3
Guardian	3.0	99	98	104	3	9	109	109	110
Spredor 3 (check)	1.8	99	98	97	18	45	97	96	92
Banquet	–	101	96	96	3	8	98	97	99
Pointer	–	108	–	–	4	3	112	–	–
Forecast 3001	3.1	108	–	–	2	2	103	–	–
Forecast 1001	2.9	107	–	–	2	2	109	–	–
UltraLac	–	105	–	–	1	1	105	–	–
WL 327	–	103	–	–	3	2	109	–	–
54V54	2.5	102	–	–	7	3	104	–	–
NetYield 500	2.9	100	–	–	1	1	100	–	–
AC Viva	–	100	–	–	2	2	104	–	–
645-II	–	100	–	–	3	1	–	–	–
AmeriGuard 302+Z	–	93	–	–	1	1	–	–	–
AmeriStand 403T	2.1	–	–	–	3	0	–	–	–
Baralfa 42 IQ	2.3	–	–	–	1	0	–	–	–
Defense+EV	–	–	–	–	1	0	–	–	–
DK134	2.5	–	–	–	4	0	–	–	–
GH700	–	–	–	–	1	0	–	–	–
Lightning II	–	–	–	–	2	0	–	–	–
Monument II	–	–	–	–	3	0	–	–	–
Multiplier 3	–	–	–	–	3	0	–	–	–
Phabulous	–	–	–	–	2	0	–	–	–
Ripin	–	–	–	–	1	0	–	–	–
Value Plus I	2.3	–	–	–	2	0	–	–	–
227 LH	2.7	–	–	–	0	0	–	–	–
6310	2.8	–	–	–	0	0	–	–	–
YieldMax	2.3	–	–	–	0	0	–	–	–

¹ Each seeding in any location counts as one "Test." Test data from experimental seed is retired as data from tests on commercial seed is sufficient to replace it.

² Winter Survival Index: 1=superior, 2=very good, 3=good, 4=adequate, 5=low, 6=none. WSI is from joint Minnesota-Wisconsin 1996-2000 trials. ³ Locations: Rosemount–Southeast (Waseca/Lewiston/Plainview), Morris–Crookston–Stearns County, Lamberton, Grand Rapids. ⁴ Total production years (after seed year) for any location with reliable data. Year 1+2 averages 2 production years. Seed years or production years that winterkilled or developed unacceptably variable stands are excluded. ⁵ Seedings at Waseca were discontinued after 1994 and replaced by a Southeast site near Plainview.

Alfalfa yield as percent of Checks and Winter Survival Index (WSI) at West, Central, NE sites.

(**Bold** yield numbers represent 3 or more tests; regular type, 2 tests, *Italic* type, only 1 test.)¹

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year										
		All Sites		Morris–Crk–Stearns			Lamberton			Grand Rapids		
		Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3
Checks, T/Ac 15%mc Hay		5.90	5.31	5.82	5.81	5.93	6.35	6.36	5.41	4.26	4.11	3.86
Webfoot Supreme	–	<i>120</i>	–	–	–	–	–	–	–	–	–	–
Pasture Plus	–	<i>113</i>	–	–	–	–	–	–	–	–	–	–
Laser	–	112	<i>102</i>	<i>115</i>	<i>117</i>	–	<i>102</i>	<i>103</i>	–	–	–	–
Perfect	–	<i>112</i>	–	<i>115</i>	<i>112</i>	–	–	–	–	–	–	–
Persist	–	112	–	<i>117</i>	<i>116</i>	–	<i>107</i>	<i>105</i>	–	–	–	–
WinterMax	–	<i>111</i>	<i>105</i>	<i>111</i>	<i>111</i>	<i>105</i>	–	–	–	–	–	–
GH755	–	111	<i>91</i>	<i>130</i>	<i>117</i>	–	–	–	–	–	–	–
MultiQueen	–	<i>111</i>	–	<i>142</i>	<i>127</i>	–	<i>105</i>	<i>102</i>	–	–	–	–
Paragon BR	–	<i>110</i>	<i>116</i>	–	–	–	–	–	–	–	–	–
Magnum III	–	110	<i>114</i>	<i>100</i>	<i>106</i>	<i>103</i>	<i>111</i>	<i>116</i>	<i>132</i>	<i>114</i>	<i>104</i>	<i>108</i>
GoldLeaf	2.8	<i>110</i>	<i>113</i>	–	–	–	–	–	–	–	–	–
350	2.8	110	<i>113</i>	<i>106</i>	<i>108</i>	–	–	–	–	–	–	–
Surpass	–	110	<i>108</i>	<i>105</i>	<i>106</i>	–	–	–	–	<i>111</i>	<i>108</i>	<i>110</i>
MagnaGraze	–	<i>110</i>	<i>101</i>	–	–	–	–	–	–	–	–	–
Quantum	–	110	99	<i>127</i>	<i>118</i>	–	–	–	–	–	–	–
Magnum III-Wet	–	110	<i>99</i>	<i>110</i>	<i>111</i>	–	–	–	–	–	–	–
9326	–	110	<i>98</i>	<i>116</i>	<i>115</i>	–	<i>97</i>	<i>102</i>	–	–	–	–
Root 66	–	<i>110</i>	–	–	–	–	–	–	–	–	–	–
6410	2.7	<i>110</i>	–	<i>98</i>	–	–	<i>100</i>	–	–	–	–	–
Radiant	–	<i>109</i>	<i>117</i>	<i>112</i>	<i>108</i>	–	–	–	–	–	–	–
Magnum V	3.0	109	<i>112</i>	107	114	–	<i>101</i>	<i>105</i>	–	–	–	–
Imperial	–	109	<i>107</i>	<i>112</i>	<i>108</i>	–	–	–	–	–	–	–
Abundance	–	<i>109</i>	<i>107</i>	–	–	–	–	–	–	–	–	–
Voyager II	–	109	104	<i>109</i>	<i>108</i>	<i>105</i>	<i>114</i>	<i>109</i>	<i>105</i>	–	–	–
Monument	–	<i>109</i>	<i>102</i>	<i>105</i>	<i>111</i>	–	–	–	–	<i>107</i>	<i>110</i>	<i>102</i>
Magnum IV	–	<i>109</i>	<i>100</i>	<i>113</i>	<i>114</i>	–	<i>105</i>	<i>107</i>	–	–	–	–
Rebound 4.2	2.4	<i>109</i>	–	<i>113</i>	<i>114</i>	–	<i>102</i>	<i>104</i>	–	–	–	–
Target II Plus	–	108	<i>117</i>	<i>107</i>	<i>106</i>	–	–	–	–	–	–	–
Harvstar 812HY	–	<i>108</i>	<i>111</i>	–	–	–	–	–	–	–	–	–
631	–	108	109	<i>112</i>	<i>115</i>	<i>108</i>	<i>101</i>	<i>101</i>	<i>109</i>	–	–	–
Gateway	–	108	<i>108</i>	<i>112</i>	<i>109</i>	–	–	–	–	–	–	–
Prolific	–	<i>108</i>	<i>107</i>	–	–	–	–	–	–	–	–	–
620	2.5	108	106	113	110	<i>99</i>	<i>104</i>	<i>103</i>	<i>107</i>	–	–	–
WL 324	–	108	105	<i>108</i>	<i>108</i>	<i>106</i>	–	–	–	<i>110</i>	<i>104</i>	<i>92</i>
2444	–	<i>108</i>	<i>103</i>	<i>104</i>	<i>104</i>	<i>93</i>	<i>110</i>	<i>111</i>	<i>114</i>	–	–	–
FQ315	–	<i>108</i>	<i>100</i>	<i>111</i>	<i>109</i>	–	–	–	–	–	–	–
Extend	2.9	108	<i>99</i>	–	–	–	–	–	–	<i>111</i>	<i>108</i>	<i>98</i>
BigHorn	3.1	108	<i>97</i>	<i>111</i>	<i>114</i>	–	–	–	–	–	–	–
WL 325 HQ	–	108	<i>94</i>	<i>111</i>	<i>109</i>	<i>92</i>	<i>92</i>	–	–	<i>111</i>	<i>110</i>	<i>96</i>
Geneva	2.8	108	–	<i>106</i>	<i>104</i>	–	<i>106</i>	<i>108</i>	–	–	–	–
Spirit	–	108	–	<i>106</i>	<i>108</i>	–	<i>103</i>	<i>103</i>	–	–	–	–
A4230	–	<i>107</i>	<i>117</i>	–	–	–	–	–	–	–	–	–
Jade II	–	107	<i>109</i>	–	–	–	<i>107</i>	<i>107</i>	<i>109</i>	–	–	–

¹ Each seeding in any location counts as one "Test." Test data from experimental seed is retired as data from tests on commercial seed is sufficient to replace it.

² Winter Survival Index: 1=superior, 2=very good, 3=good, 4=adequate, 5=low, 6=none. WSI is from joint Minnesota-Wisconsin 1996-2000 trials. ³ Locations: Rosemount–Southeast (Waseca/Lewiston/Plainview), Morris–Crookston–Stearns County, Lamberton, Grand Rapids. ⁴ Total production years (after seed year) for any location with reliable data. Year 1+2 averages 2 production years. Seed years or production years that winterkilled or developed unacceptably variable stands are excluded. ⁵ Seedings at Waseca were discontinued after 1994 and replaced by a Southeast site near Plainview.

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year										
		All Sites		Morris-Crk-Stearns			Lamberton			Grand Rapids		
		Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3
630	-	107	109	100	102	100	105	107	107	102	99	112
AlfaStar	-	107	106	118	-	-	117	108	102	-	-	-
Vitro	2.6	107	106	107	105	109	-	-	-	-	-	-
Baralfa 32 IQ	3.0	107	105	124	119	-	-	-	-	-	-	-
5454	2.3	107	104	110	111	111	101	102	99	107	105	100
Innovator+Z	2.3	107	104	116	120	-	91	94	105	-	-	-
Defiant	2.3	107	102	110	105	95	105	107	106	-	-	-
Green Feast	2.9	107	101	-	-	-	-	-	-	-	-	-
Milk River	-	107	-	119	115	-	106	102	-	-	-	-
FQ314	3.0	107	-	107	108	-	-	-	-	-	-	-
Garst 645	2.8	106	114	111	108	116	106	104	119	-	-	-
Trident II	-	106	112	107	106	113	112	108	134	105	104	106
Enhancer	-	106	111	-	-	-	108	105	116	-	-	-
Dominator	-	106	108	-	-	-	101	99	-	-	-	-
Bounty	-	106	108	110	110	108	-	-	-	-	-	-
DK142	2.9	106	108	-	-	-	-	-	-	-	-	-
Notice	2.6	106	104	113	111	104	102	102	105	-	-	-
WinterStar	2.4	106	102	110	108	99	100	104	-	105	104	104
Evolution	-	106	100	106	105	95	-	-	-	101	98	105
Iroquois	-	106	99	105	105	103	102	100	99	108	111	96
DK140	2.8	106	98	112	111	96	100	100	95	102	100	97
Aspen	3.2	106	97	-	-	-	-	-	-	120	112	94
Columbia 2000	3.1	106	97	109	110	-	104	106	-	111	105	93
Rustler II	-	106	-	113	111	-	-	-	-	-	-	-
AmeriStand 201+Z	2.0	106	-	106	106	-	101	103	-	-	-	-
Platinum	-	106	-	-	-	-	98	-	-	-	-	-
5312	3.0	105	105	101	104	101	106	104	99	107	104	107
Breakout	2.5	105	104	-	-	-	-	-	-	104	104	104
Yielder	-	105	104	-	-	-	-	-	-	-	-	-
TMF 421	-	105	103	112	112	-	108	105	-	103	100	97
Rainier	2.9	105	103	-	-	-	102	103	108	96	100	98
WinterKing	2.5	105	102	110	107	-	108	106	-	102	99	97
Avalanche+Z	2.4	105	102	99	106	106	91	95	107	95	100	94
A-395	-	105	101	111	106	-	108	105	-	-	-	-
329	-	105	100	-	-	-	-	-	-	114	103	101
WinterGold	2.6	105	99	110	108	-	-	-	-	-	-	-
GH766	-	105	99	99	104	-	105	105	-	103	105	98
DK124	2.8	105	98	107	109	-	100	101	-	104	101	98
Forecast 3000	-	105	-	101	103	-	104	107	-	-	-	-
A 30-06	1.9	105	-	-	-	-	87	-	-	-	-	-
AmeriGraze 401+Z	-	104	106	108	114	-	-	-	-	-	-	-
Sterling	-	104	105	111	111	111	102	99	100	-	-	-
DK127	2.6	104	104	103	103	105	100	97	103	104	107	95
WetLand	-	104	102	108	-	-	-	-	-	-	-	-
WL 232 HQ	2.8	104	102	106	105	-	101	100	-	-	-	-
Award	3.3	104	101	97	-	-	100	-	-	114	112	101
Viking 1	3.0	104	101	107	105	99	93	94	96	112	112	106
Nemesis	-	104	101	105	107	97	100	100	97	-	-	-
GH757	3.1	104	101	-	-	-	-	-	-	-	-	-
Affinity+Z	-	104	100	-	-	-	-	-	-	105	104	100
Ace	3.1	104	99	118	113	-	-	-	-	-	-	-
Mainstay	2.7	104	97	-	-	-	-	-	-	-	-	-

Alfalfa yield as percent of Checks and Winter Survival Index (WSI) at West, Central, NE sites (continued).

(Bold yield numbers represent 3 or more tests; regular type, 2 tests, *italic* type, only 1 test.)¹

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year										
		All Sites		Morris-Crk-Stearns			Lamberton			Grand Rapids		
		Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3
WinterGreen	2.5	104	<i>96</i>	—	—	—	—	—	—	<i>103</i>	<i>100</i>	<i>96</i>
53Q60	3.0	104	<i>94</i>	106	107	—	103	103	—	<i>101</i>	<i>98</i>	<i>94</i>
Somerset	2.2	<i>104</i>	—	—	—	—	—	—	—	—	—	—
Reliance	—	<i>103</i>	<i>120</i>	—	—	—	—	—	—	—	—	—
Depend+EV	—	103	114	—	—	—	—	—	—	<i>107</i>	<i>103</i>	<i>130</i>
Feast+EV	2.2	103	105	104	103	105	—	—	—	—	—	—
Complete	2.7	103	104	—	—	—	<i>96</i>	<i>99</i>	<i>106</i>	—	—	—
Demand	—	103	102	—	—	—	<i>104</i>	<i>102</i>	<i>103</i>	—	—	—
GH767	3.0	103	102	—	—	—	—	—	—	—	—	—
Blazer XL	2.8	103	101	<i>106</i>	<i>101</i>	<i>98</i>	<i>111</i>	<i>105</i>	<i>103</i>	—	—	—
Wrangler	—	103	101	100	106	103	<i>97</i>	<i>98</i>	<i>106</i>	103	100	91
DK141	3.4	103	98	110	108	<i>100</i>	106	<i>106</i>	<i>109</i>	<i>97</i>	<i>89</i>	<i>82</i>
LegenDairy 2.0	2.8	103	98	<i>117</i>	<i>113</i>	—	—	—	—	—	—	—
Multi 5301	—	103	<i>97</i>	103	103	—	<i>106</i>	<i>104</i>	—	—	—	—
Multiplier II	—	103	96	<i>107</i>	<i>109</i>	—	<i>104</i>	<i>102</i>	—	<i>104</i>	<i>100</i>	<i>96</i>
Legend Gold	—	<i>103</i>	<i>96</i>	<i>103</i>	—	—	<i>89</i>	—	—	—	—	—
Spur	—	103	—	—	—	—	—	—	—	—	—	—
Samurai	—	<i>103</i>	—	—	—	—	—	—	—	—	—	—
Pristine	—	103	—	—	—	—	—	—	—	—	—	—
Magnum V-Wet	—	<i>103</i>	—	—	—	—	—	—	—	—	—	—
Abound	—	<i>102</i>	<i>111</i>	<i>104</i>	—	—	<i>96</i>	—	—	—	—	—
Gold Plus	—	102	<i>109</i>	<i>110</i>	<i>106</i>	—	—	—	—	—	—	—
TMF Generation	—	102	105	<i>106</i>	<i>101</i>	<i>100</i>	99	99	107	—	—	—
WL 252 HQ	—	102	<i>105</i>	<i>71</i>	—	—	—	—	—	—	—	—
Passport	—	<i>102</i>	<i>104</i>	—	—	—	—	—	—	—	—	—
Oneida (check)	—	102	104	105	<i>103</i>	<i>102</i>	<i>96</i>	<i>98</i>	<i>106</i>	<i>110</i>	<i>106</i>	<i>108</i>
Ranger	2.9	102	102	<i>119</i>	<i>125</i>	<i>117</i>	98	97	99	—	—	—
Hunter	—	<i>102</i>	<i>99</i>	—	—	—	—	—	—	—	—	—
9429	2.8	102	<i>99</i>	<i>116</i>	<i>107</i>	—	<i>91</i>	—	—	—	—	—
Sprint	2.6	<i>102</i>	<i>99</i>	<i>100</i>	—	—	—	—	—	—	—	—
53V63	2.8	102	<i>96</i>	107	107	—	<i>99</i>	<i>97</i>	—	<i>107</i>	<i>101</i>	<i>96</i>
GH750	—	<i>102</i>	—	<i>105</i>	—	—	<i>96</i>	—	—	—	—	—
Emperor	2.6	102	—	—	—	—	—	—	—	—	—	—
Alliant	—	<i>101</i>	<i>113</i>	—	—	—	—	—	—	—	—	—
MP2000	2.7	101	108	<i>106</i>	<i>107</i>	<i>113</i>	<i>97</i>	<i>94</i>	<i>105</i>	—	—	—
Rhino	—	101	<i>106</i>	<i>109</i>	<i>105</i>	—	—	—	—	—	—	—
2888	3.2	101	104	—	—	—	—	—	—	—	—	—
205	1.6	101	102	112	105	<i>104</i>	<i>92</i>	<i>94</i>	<i>100</i>	<i>93</i>	<i>100</i>	<i>102</i>
Lactator	3.1	101	<i>100</i>	—	—	—	—	—	—	—	—	—
Empire	—	101	99	108	105	<i>104</i>	<i>92</i>	<i>95</i>	<i>98</i>	<i>104</i>	<i>102</i>	<i>100</i>
Clean Sweep 1000	—	<i>101</i>	<i>95</i>	—	—	—	—	—	—	—	—	—
Multi 5302	—	101	—	<i>108</i>	<i>104</i>	—	<i>99</i>	<i>98</i>	—	—	—	—
Vernal (check)	1.9	100	100	99	99	99	102	101	99	100	100	100
Oneida VR (check)	—	100	100	98	100	104	92	93	96	98	99	96
8498	3.1	100	100	—	—	—	—	—	—	<i>94</i>	<i>96</i>	<i>99</i>
Nutrimax	—	<i>100</i>	<i>95</i>	—	—	—	—	—	—	—	—	—
400SCL	—	<i>100</i>	—	—	—	—	—	—	—	—	—	—
Mariner II	—	<i>100</i>	—	—	—	—	—	—	—	—	—	—
Agate	—	99	106	99	97	101	100	100	100	86	89	<i>96</i>
AmeriGuard 301	—	99	95	—	—	—	<i>100</i>	<i>100</i>	<i>93</i>	—	—	—

Variety, by Year 1+ Year 2 Average, Year 3, year 1	WSI ²	Average Yield for Years 1, 1+2, and 3 After Seeding Year										
		All Sites		Morris-Crk-Stearns			Lamberton			Grand Rapids		
		Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3	Yr1	Yr1+2	Yr3
9111	—	99	—	97	100	—	101	99	—	—	—	—
Guardian	3.0	98	104	99	98	104	89	87	97	—	—	—
Spredor 3 (check)	1.8	98	97	104	103	100	101	101	108	97	96	100
Banquet	—	96	96	—	—	—	—	—	—	105	95	94
Pointer	—	—	—	110	—	—	102	—	—	—	—	—
Forecast 3001	3.1	—	—	113	—	—	—	—	—	—	—	—
Forecast 1001	2.9	—	—	105	—	—	—	—	—	—	—	—
UltraLac	—	—	—	—	—	—	—	—	—	—	—	—
WL 327	—	—	—	97	—	—	—	—	—	—	—	—
54V54	2.5	—	—	113	—	—	90	—	—	—	—	—
NetYield 500	2.9	—	—	—	—	—	—	—	—	—	—	—
AC Viva	—	—	—	—	—	—	96	—	—	—	—	—
645-II	—	—	—	—	—	—	100	—	—	—	—	—
AmeriGuard 302+Z	—	—	—	—	—	—	93	—	—	—	—	—
AmeriStand 403T	2.1	—	—	—	—	—	—	—	—	—	—	—
Baralfa 42 IQ	2.3	—	—	—	—	—	—	—	—	—	—	—
Defense+EV	—	—	—	—	—	—	—	—	—	—	—	—
DK134	2.5	—	—	—	—	—	—	—	—	—	—	—
GH700	—	—	—	—	—	—	—	—	—	—	—	—
Lightning II	—	—	—	—	—	—	—	—	—	—	—	—
Monument II	—	—	—	—	—	—	—	—	—	—	—	—
Multiplier 3	—	—	—	—	—	—	—	—	—	—	—	—
Phabulous	—	—	—	—	—	—	—	—	—	—	—	—
Ripin	—	—	—	—	—	—	—	—	—	—	—	—
Value Plus I	2.3	—	—	—	—	—	—	—	—	—	—	—
227 LH	2.7	—	—	—	—	—	—	—	—	—	—	—
6310	2.8	—	—	—	—	—	—	—	—	—	—	—
YieldMax	2.3	—	—	—	—	—	—	—	—	—	—	—

¹ Each seeding in any location counts as one "Test." Test data from experimental seed is retired as data from tests on commercial seed is sufficient to replace it.

² Winter Survival Index: 1=superior, 2=very good, 3=good, 4=adequate, 5=low, 6=none. WSI is from joint Minnesota-Wisconsin 1996-2000 trials. ³ Locations: Rosemount-Southeast (Waseca/Lewiston/Plainview), Morris-Crookston-Stearns County, Lamberton, Grand Rapids. ⁴ Total production years (after seed year) for any location with reliable data. Year 1+2 averages 2 production years. Seed years or production years that winterkilled or developed unacceptably variable stands are excluded. ⁵ Seedings at Waseca were discontinued after 1994 and replaced by a Southeast site near Plainview.

Alfalfa winter survival test results for Wisconsin and Minnesota, planted in April 1999 and rated in April 2000.

Variety	Winter Survival Index: 1=Superior, 2=Very Good, 3=Good, 4=Adequate, 5=Low, 6=No Winter Survival		Mean
	Arlington, Wis.	Morris, Minn.	
Beaver (index 1 check)	0.8	1.0	0.9
Spredor 3 (index 1 check)	1.0	2.0	1.5
526 (index 2 check)	2.2	1.9	2.0
Vernal (index 2 check)	2.1	2.0	2.1
Ameristand 403T	1.7	2.5	2.1
Somerset	2.3	2.1	2.2
Reliance	2.5	2.3	2.4
54V54	2.6	2.3	2.5
Wintergold	2.6	2.4	2.5
620	2.8	2.5	2.6
Mainstay	2.6	2.7	2.7
DK 140	3.2	2.4	2.8
DK 124	2.8	2.8	2.8
Netyield 500	3.3	2.4	2.9
Ranger (index 3 check)	2.5	3.2	2.9
Green Feast	3.2	2.6	2.9
Forecast 1001	3.5	2.4	2.9
Forecast 3001	3.5	2.7	3.1
DK 141	3.4	3.3	3.3
Dart (index 3 check)	4.1	2.9	3.5
Fortress (index 4 check)	3.9	3.9	3.9
G-2852 (index 4 check)	4.1	–	4.1
WL 316 (index 4 check)	–	4.3	4.3
Southern Special (index 5 check)	4.6	4.7	4.6
Archer (index 5 check)	4.4	5.0	4.7
CUF 101 (index 6 check)	6.0	5.9	6.0
Moapa 69 (index 6 check)	6.0	6.0	6.0

WSI values in preceding alfalfa tables are from this trial or prior Wisconsin WS trials, with some Winter Survival Indexes averaged.

Forage quality as Relative Food Value and Milk Per Acre of Alfalfa Varieties, percent of checks.¹

Seed years 1991-1999 Minn., 1995-1999 Wis.

Production Years. 1992-2000 Minn, 1996-2000 Wis.

Variety	RFV ²	Milk/Acre	N
205	102	110	2
2888	102	112	2
329	104	110	2
53Q60	101	105	4
53V63	103	105	2
5454	102	105	1
630	107	109	1
8498	102	118	2
9111	112	105	1
9326	104	113	2
9429	101	119	2
Abound	104	110	2
Agate	108	104	2
Breakout	105	111	2
Colombia 2000	95	99	2
DK 124	105	114	4
DK 127	105	113	5
DK 134	103	105	3
DK 140	100	107	4
DK 141	98	108	4
Dominator	105	98	1
Extend	102	111	2
FQ 314	105	118	2
Garst 645	106	105	1
Geneva	100	110	4
GH 755	108	102	1
GH 757	99	104	2
GH 766	102	100	2
GH 767	105	109	4
Imperial	102	109	1
Innovator +Z	103	105	2
Legend Gold	104	117	2
Magnum III	102	105	1
Magnum III-Wet	111	102	1
Magnum IV	99	102	1
Oneida	104	106	2
Rainier	103	110	2
Spirit	98	114	2
Sterling	103	107	1
Target II Plus	105	108	1
Viking 1	106	103	1
WinterGold	102	117	2
WinterKing	103	107	2
WL 252 HQ	105	108	3
Vernal-ck	99	98	10
WL 322 HQ-check	104	104	8
Vernal, checks ⁵	153	10578	10
Test Mean	157	11254	10
LSD .05	6	10	7
CV%	4	7	7

Seed year 1999, production year, 2000

Variety	Minn., Cut 6/1, *, 8/24		Wis., Cut 5/24, 7/13, 8/14	
	RFV ²	Milk/Acre ³	RFV	Milk/Acre ⁴
53Q60	92	97	104	109
9429	99	114	104	125
Colombia 2000	95	97	94	101
DK 124	100	110	110	125
DK 134	100	106	--	--
DK 140	100	113	98	110
DK 141	95	107	97	109
Geneva	91	103	102	115
WinterGold	99	114	105	121
Cimarron VR-check	102	98	--	--
Vernal-check	98	100	95	97
WL 322 HQ-check	100	102	105	103
Vernal, checks ⁵	136	6,357	158	11,642
Test Mean	132	6,670	160	12,976
LSD .05	NS	NS	5	9
CV%	8	10	4	6

*No second-cut 7/13 quality data due to hail damage.

Seed year 2000, production year, 2000.

Variety	Minn., Cut 8/24		Wis., Cut 7/13, 8/14	
	RFV ²	Milk/Acre ³	RFV	Milk/Acre ⁴
6410	114	106	109	123
A 30-06	107	97	104	119
A4230	103	96	98	128
Abound	109	100	97	121
Alliant	115	104	97	120
DK 124	113	103	107	112
DK 127	102	91	106	114
DK 134	111	99	104	116
GH 700	106	101	106	136
Somerset	112	91	101	131
Value Plus	106	95	103	110
Cimarron VR-check	95	95	--	--
Vernal-check	100	100	100	100
WL 322 HQ-check	105	105	--	--
Vernal, checks ⁵	152	3,086	197	5,270
Test Mean	164	3,049	204	6,265
LSD .05	11	NS	5	19
CV%	7	14	3	11

¹ Varieties listed include joint Minnesota – Wisconsin quality trials (seed years 1995-2000) plus varieties from prior Minnesota quality trials currently marketed in Minnesota.

² RFV = Relative Feed Value index (calculated from NDF and ADF).

³ Milk per acre is calculated using season average quality and season average yield at Rosemount, Minn.

⁴ Milk per acre is calculated using season average quality and season average yield at Arlington, Wis.

⁵ Checks: Vernal used until 1994; Vernal and WL322HQ for 1995-2000 seed years

⁶ CV = Coefficient of Variation. Smaller number indicates less variation between replicates.

Disease resistance and fall dormancy of alfalfa varieties marketed in Minnesota.

Variety ¹	Developer or Marketer ²	Seed Source ³	Fall Dormancy ⁴	Disease Resistance Ratings ^{5,6}					
				BW	VW	FW	An	PRR	Aph
Dormant									
205	Allied Seed	38	2	HR	R	HR	R	HR	R
227LH	Allied Seed	38	2	HR	R	R	HR	HR	R
2444	Novartis	0	3	HR	R	HR	HR	HR	R
2888	Novartis	50	3	HR	HR	HR	HR	HR	R
329	L & H Seeds	37	3	HR	HR	HR	HR	HR	R
350	Allied Seed	38	3	HR	HR	HR	HR	HR	HR
400 SCL	Allied Seed	38	4	HR	HR	HR	HR	HR	HR
5312	Pioneer Hi-Bred International	53	3	HR	HR	HR	HR	HR	R
53Q60	Pioneer Hi-Bred International	53	3	HR	R	R	HR	HR	R
53V63	Pioneer Hi-Bred International	53	3	HR	HR	HR	HR	HR	HR
5454	Pioneer Hi-Bred International	53	4	R	MR	HR	HR	HR	LR
54V54	Pioneer Hi-Bred International	53	4	HR	HR	HR	HR	HR	HR
5-Star	Croplan Genetics	18	5	HR	R	HR	HR	HR	R
620	Garst Seed/Interstate	24, 32	2	HR	R	HR	HR	HR	R
630	Garst Seed	24	4	HR	MR	R	MR	R	–
631	Garst Seed	24	4	HR	R	HR	R	HR	MR
6310	Garst Seed	24	3	HR	HR	HR	HR	HR	R
6410	Garst Seed	24	4	HR	HR	HR	HR	HR	HR
6420	Garst Seed	24	4	HR	R	HR	R	HR	R
645-II	Garst Seed	24, 32	3	HR	HR	HR	HR	HR	R
8498	Mallard Seeds	43	3	HR	R	HR	HR	HR	R
9326	LG Seeds	42	3	HR	R	HR	R	HR	R
9429	LG Seeds	42	4	HR	R	HR	HR	HR	HR
A 30-06	PGI/MBS	52	3	HR	HR	HR	HR	HR	HR
A-395	PGI/MBS	52	3	HR	R	HR	HR	HR	R
A4230	CW / United Suppliers	68	4	HR	HR	HR	HR	HR	HR
Abound	Monsanto	45	3	HR	HR	HR	HR	HR	HR
Abundance	Bio-Plant Research	13	4	HR	MR	HR	R	HR	R
AC Viva	Oseco	0	3	HR	HR	–	MR	–	–
Ace	W-L Research / UAP Seeds	0	4	HR	R	HR	HR	HR	R
Affinity+Z	America's Alfalfa	9, 51, 61	4	HR	HR	HR	HR	HR	R
Agate	USDA / Minn.AES	2, 70	2	HR	–	HR	MR	R	–
AlfaStar	Shepard Seed / Kaystar	35, 58	4	HR	R	HR	HR	HR	R
Alliant	Monsanto	45	4	HR	R	HR	HR	HR	HR
AmeriGraze 401+Z	America's Alfalfa	9, 61	4	HR	HR	HR	HR	HR	R
AmeriGuard 301	America's Alfalfa	0	3	HR	R	HR	HR	HR	R
AmeriGuard 302+Z	America's Alfalfa	9, 61	3	HR	HR	HR	HR	HR	HR
AmeriStand 201+Z	America's Alfalfa	9, 61	2	HR	HR	HR	R	HR	HR
AmeriStand 403T	America's Alfalfa	9, 61	4	HR	HR	HR	HR	HR	HR
Aspen	SeedTec / Brown Seed	14	4	HR	R	HR	HR	HR	R
AV3420	AgVenture	5	4	HR	R	HR	HR	HR	HR
Avalanche+Z	America's Alfalfa	9, 61	2	HR	HR	HR	HR	HR	R
Award	Asgrow Seed	45	4	HR	HR	HR	HR	HR	R

¹ Varieties includes those marketed in Minnesota for which disease resistance ratings were provided. Varieties not seeded in a recent Minnesota yield trial are excluded from the yield tables on pages 12-19. ² Developers and ratings generally follow Certified Alfalfa Seed Council report (if available), or from developer.

³ Seed source numbers reference Forage Seed Sources list, pages 26, 27.

⁴ Fall dormancy and pest resistance Ratings are as reported in CASC publication or provided by a developer, with dormancy based on fall growth in mid-October after cutting 1st week of September: 9=tallest (tend to be least winterhardy), 1=shortest.

⁵ Diseases abbreviated as BW: Bacterial Wilt, PRR: Phytophthora Root Rot, FW: Fusarium Wilt, An: Anthracnose, VW: Verticillium Wilt, Aph: Aphanomyces Root Rot

⁶ CASC Resistance Rating (percent resistant plants): HR=high resistance (51 +), R=resistant (31-50), MR=moderate resistance (16-30), LR=low resistance (6-15), and S=susceptible (0-5).

Variety ¹	Developer or Marketer ²	Seed Source ³	Fall Dormancy ⁴	Disease Resistance Ratings ^{5,6}					
				BW	VW	FW	An	PRR	Aph
Dormant									
Banquet	Tri-State Seed	23	4	HR	HR	HR	HR	HR	R
Baralfa 32 IQ	Barenbrug USA	6, 12	3	HR	R	HR	HR	HR	HR
Baralfa 42 IQ	Barenbrug USA	6	4	HR	HR	HR	HR	HR	HR
Baralfa 54	Barenbrug USA	12	5	R	R	HR	HR	HR	—
BigHorn	Cargill Hybrid Seeds	16	4	HR	R	HR	HR	HR	HR
Blazer XL	CroPlan Genetics	18	3	R	R	HR	HR	HR	R
Bounty	PGI / MBS	52, 54	2	HR	R	HR	HR	HR	R
Breakout	Brown Seed	14	4	HR	R	HR	HR	HR	R
Buck	Cargill Hybrid Seeds	16	3	HR	R	HR	R	R	R
Clean Sweep 1000	Agway / Allied Seed	8	3	HR	R	HR	HR	HR	R
Columbia 2000	Allied Seed	2, 6	4	R	R	R	LR	LR	S
Complete	Arrow Seed / Fontanelle Hybrids	23	3	HR	HR	HR	HR	HR	R
Cyclone	Tri-State Seed	65	3	HR	HR	HR	HR	HR	HR
Defense+EV	AgriPro Seeds	3	3	HR	HR	HR	HR	HR	HR
Defiant	AgriPro Seeds	3	2	HR	HR	HR	R	HR	R
Demand	AgriPro Seeds	3	3	HR	HR	HR	HR	HR	R
Depend+EV	AgriPro Seeds	3	4	HR	HR	HR	HR	HR	R
DK124	Monsanto	45	2	HR	HR	HR	HR	HR	HR
DK127	Monsanto	45	3	HR	R	R	HR	HR	HR
DK131HG	Monsanto	45	3	HR	HR	HR	HR	HR	R
DK134	Monsanto	45	3	HR	HR	HR	HR	HR	HR
DK140	Monsanto	45	4	HR	R	HR	HR	HR	HR
DK141	Monsanto	0	4	HR	HR	HR	HR	HR	HR
DK142	Monsanto	45	4	HR	R	HR	R	HR	HR
Dominator	AgriPro Seeds	3	4	HR	R	HR	HR	HR	R
Emperor	ABI Alfalfa / Terner Seeds	1, 61	4	HR	HR	HR	HR	HR	HR
Empire	Brunner Seed Farm	15	2	HR	R	HR	HR	HR	R
Enhancer	Bio-Plant Research	13, 23	4	HR	R	HR	R	HR	MR
EverGreen	Novartis	50	3	HR	R	HR	HR	HR	R
Evolution	Mycogen Seeds	16, 46	2	HR	R	HR	HR	HR	R
Extend	Spangler / Grassland West	59	4	HR	R	R	HR	HR	R
Feast+EV	AgriPro Seeds	3	3	HR	R	HR	HR	HR	R
Forecast 1000	Dairyland Seed	21	3	HR	R	HR	R	HR	R
Forecast 1001	Dairyland Seed	21	4	HR	R	HR	R	HR	R
Forecast 3000	Dairyland Seed	21	4	HR	R	HR	R	R	MR
Forecast 3001	Dairyland Seed	21	3	HR	R	HR	R	HR	R
FQ 302HR	Cargill Hybrid Seeds	16	3	HR	R	HR	HR	HR	R
FQ 314	Cargill Hybrid Seeds	16	3	HR	HR	HR	HR	HR	HR
FQ 315	Cargill Hybrid Seeds	16	3	HR	R	HR	HR	HR	HR
Garst 645	Garst Seed	0	3	HR	R	R	HR	HR	MR
Gateway	Jung Seed Genetics	33	4	HR	R	HR	HR	HR	R
Geneva	Novartis	50	4	HR	HR	HR	HR	HR	HR
GH700	Golden Harvest	28	4	HR	HR	HR	HR	HR	HR
GH750	Golden Harvest	27	4	HR	HR	HR	HR	HR	HR
GH755	Golden Harvest	27	4	HR	R	HR	HR	HR	R
GH757	Golden Harvest	28	4	HR	HR	HR	HR	HR	HR
GH766	Golden Harvest	27	3	HR	R	HR	HR	HR	R
GH767	Golden Harvest	28	2	HR	R	HR	HR	HR	R
Gold Plus	PGI / MBS	52, 63	4	HR	R	HR	HR	HR	R
GoldLeaf	BPR / Gold Country Seed	6, 26	3	HR	R	HR	R	HR	R
GreenFeast	Minnesota Seed Solutions	44	2	HR	HR	HR	HR	HR	HR
Guardian	AgVenture	5	3	HR	HR	HR	HR	HR	R

Disease resistance and fall dormancy of alfalfa varieties marketed in Minnesota (continued).

Variety ¹	Developer or Marketer ²	Seed Source ³	Fall Dormancy ⁴	Disease Resistance Ratings ^{5,6}					
				BW	VW	FW	An	PRR	Aph
Dormant									
Harvstar 812HY	Landec Ag	39	4	HR	R	HR	R	HR	MR
Hay Maker II	Mid-Atlantic / Kussmaul Seeds	36	4	HR	R	HR	HR	HR	R
Hunter	Ramy International	56	4	HR	R	HR	HR	HR	R
Imperial	ABI / Terning Seeds	1, 61	3	HR	R	HR	HR	HR	R
Innovator+Z	America's Alfalfa	9, 61	3	HR	HR	HR	HR	HR	R
Iroquois	Cornell University	2, 6, 55	2	HR	S	MR	S	S	–
Jade II	NC+ Hybrids	47	4	HR	R	HR	R	HR	MR
Lactator	Elk Mound Seed	0	2	HR	HR	HR	HR	R	R
Laser	AMPAC / DeLong	10, 62	4	HR	R	HR	R	HR	MR
Legend Gold	Legend Seeds	40	3	HR	HR	HR	HR	HR	HR
LegenDairy 2.0	CroPlan Genetics	18	3	HR	R	HR	HR	HR	R
LegenDairy YPQ	CroPlan Genetics	18	3	HR	R	HR	HR	HR	HR
LH 3000	Jung Seed Genetics	33	3	HR	HR	HR	HR	HR	R
Lightning II	Jung Seed Genetics	33	4	HR	HR	HR	HR	HR	HR
MagnaGraze	Dairyland Seed	21	3	HR	R	HR	R	HR	R
Magnum III	Dairyland Seed	21	4	R	MR	R	MR	R	LR
Magnum III-Wet	Dairyland Seed	21	3	R	MR	R	MR	R	MR
Magnum IV	Dairyland Seed	21	4	HR	R	HR	R	HR	MR
Magnum V	Dairyland Seed	21	4	HR	R	HR	R	HR	MR
Magnum V-Wet	Dairyland Seed	21	3	HR	R	HR	R	HR	R
Mainstay	AgVenture	5	3	HR	R	HR	HR	HR	R
Mariner II	Bio-Plant Research	13	2	HR	R	HR	R	HR	R
Maxi-Graze GT	CroPlan Genetics	18	2	HR	R	HR	HR	HR	R
Maximum I	Fred Gutwein & Sons	31	3	HR	HR	HR	HR	HR	R
Milk River	R.J. Hunt Seed	55	3	HR	R	HR	HR	HR	R
Monument	Geertson Seed Farms	25	3	R	LR	R	–	MR	–
Monument II	Geertson Seed Farms	25	4	R	LR	HR	S	R	–
MP2000	Croplan Genetics	18	3	HR	R	HR	HR	HR	HR
Multi 5301	Geertson Seed Farms	25	4	R	R	HR	HR	MR	–
Multiplier 3	Mycogen Seeds	16, 46	3	HR	R	HR	HR	HR	HR
Multiplier II	Mycogen Seeds	16	3	HR	HR	HR	HR	HR	R
MultiQueen	Fred Gutwein & Sons	31	4	HR	R	HR	HR	HR	R
Nemesis	Renk Seed	57	3	R	HR	HR	HR	HR	HR
NetYield 500	NetSeeds	48	4	HR	R	HR	R	HR	MR
Notice	Midwest Seed Genetics	19	3	HR	R	HR	HR	HR	R
NutriMax	Alfalfa Genetics Direct	7	4	HR	HR	HR	HR	HR	R
Oneida (check)	Cornell Univ.	0	3	HR	–	HR	S	HR	–
Oneida VR (check)	N.Y.S.I.P. / Public	0	3	R	HR	HR	MR	MR	–
Paragon BR	Bio-Plant Research	13	3	HR	R	HR	R	HR	R
Passport	Wyffels Hybrids / Chempro	0	3	HR	–	–	HR	HR	R
Pasture Plus	PGI / MBS	52	3	HR	R	HR	R	HR	R
Perfect	Grassland Central	29	–	HR	HR	HR	HR	HR	HR
Persist	Kaltenberg Seed Farms	34	4	HR	R	HR	R	HR	MR
Phabulous	Trelay	64	4	HR	HR	HR	HR	HR	HR
Platinum	Midwest Seed Genetics	19	4	HR	HR	HR	HR	HR	HR
Pointer	Dahlco Seeds	20	3	HR	R	HR	HR	HR	HR
Pristine	Trelay	64	4	HR	R	HR	HR	HR	R
Prolific	Bio-Plant Research	13	3	HR	R	HR	R	HR	R
Quantum	Renk Seed	57	2	HR	HR	HR	HR	HR	R
Radiant	AMPAC / DeLong	10, 62	4	HR	HR	HR	HR	HR	HR
Rainier	Novartis	50	3	HR	R	HR	HR	HR	HR

Variety ¹	Developer or Marketer ²	Seed Source ³	Fall Dormancy ⁴	Disease Resistance Ratings ^{5,6}					
				BW	VW	FW	An	PRR	Aph
Dormant									
Ranger	USDA / Nebraska AES	2	3	MR	S	MR	S	S	–
Rebound 4.2	CroPlan Genetics	18	4	HR	HR	HR	HR	HR	HR
Reliance	Forage Genetics	0	3	HR	HR	HR	HR	HR	R
Rhino	Geertson Seed Farms	25	3	HR	R	R	R	R	R
Ripin	AMPAC / DeLong	10, 62	4	HR	R	HR	R	HR	R
Root 66	Trelay	64	4	HR	HR	HR	HR	HR	HR
Rustler II	Andrews Seed	11	4	HR	HR	HR	HR	HR	R
Samurai	ABI Alfalfa	0	3	HR	R	HR	HR	HR	R
Somerset	Novartis	50	3	HR	HR	HR	HR	HR	HR
Spirit	Fontanelle Hybrids	52	3	HR	R	HR	R	HR	MR
Spredor 3 (check)	Novartis	50	1	HR	MR	HR	R	MR	S
Sprint	Specialty Seeds	60	3	HR	R	HR	R	HR	HR
Spur	Albert Lea Seed House	6	4	HR	R	HR	HR	HR	R
Sterling	Cargill Hybrid Seeds	16	2	HR	R	HR	HR	HR	R
Surpass	Andrews Seed	6, 11	3	HR	R	HR	MR	R	–
Target II Plus	BPR / Producer's Hybrids	54	3	HR	R	HR	R	HR	MR
TMF 421	Mycogen Seeds	16, 46	2	HR	HR	R	HR	HR	HR
TMF 4355LH	Mycogen Seeds	16, 46	3	HR	R	HR	HR	HR	R
TMF Generation	Mycogen Seeds	16, 46	4	HR	HR	HR	HR	HR	R
Trident II	Cargill Hybrid Seeds	16	3	HR	R	R	R	HR	MR
UltraLac	Elk Mound Seed	22	2	HR	HR	HR	HR	HR	HR
Value Plus 1	Brown Seed	14	4	HR	R	HR	HR	HR	R
Vernal (check)	USDA / Wisconsin AES	2, 6, 55, 70	2	R	–	MR	–	–	–
Viking 1	Novartis	50	2	R	HR	HR	R	R	–
Vitro	North-Gro Seed	49	3	HR	HR	HR	HR	HR	R
Voyager II	Lemke Seeds / Ziller Seed	41, 72	4	HR	R	HR	R	HR	MR
Webfoot Supreme	Great Lakes Hybrids	30	4	R	R	R	R	R	LR
WetLand	Lemke Seeds / Ziller Seed	54, 72	3	R	MR	R	R	HR	MR
WinterGold	Renk Seed	57	4	HR	HR	HR	HR	HR	HR
WinterGreen	Renk Seed	57	3	HR	HR	HR	HR	HR	R
WinterKing	Wensman Seed	69	3	HR	HR	HR	HR	HR	R
WinterMax	Alfalfa Genetics Direct	7	2	HR	HR	HR	HR	HR	R
WinterStar	Wensman Seed	69	2	HR	HR	HR	HR	HR	R
WL 232 HQ	W-L Research	4, 44, 51, 67, 71	2	HR	HR	HR	HR	HR	HR
WL 252 HQ	W-L Research	4, 44, 67, 71	2	HR	R	HR	HR	HR	LR
WL 324	W-L Research	4, 44, 51, 67, 71	3	HR	R	HR	HR	HR	HR
WL 325 HQ	W-L Research	4, 44, 51, 67, 71	3	HR	R	HR	HR	HR	R
WL 327	W-L Research	0	4	HR	R	HR	HR	HR	HR
Wrangler	USDA / Nebraska AES	6, 55, 70	2	R	LR	R	LR	HR	–
Yielder	AgriPro Seeds	3	3	HR	R	HR	HR	HR	R
YieldMax	Alfalfa Genetics Direct	7	4	HR	HR	HR	HR	HR	HR

¹ Varieties includes those marketed in Minnesota for which disease resistance ratings were provided. Varieties not seeded in a recent Minnesota yield trial are excluded from the yield tables on pages 12-19. ² Developers and ratings generally follow Certified Alfalfa Seed Council report (if available), or from developer.

³ Seed source numbers reference Forage Seed Sources list, pages 26, 27.

⁴ Fall dormancy and pest resistance Ratings are as reported in CASC publication or provided by a developer, with dormancy based on fall growth in mid-October after cutting 1st week of September: 9=tallest (tend to be least winterhardy), 1=shortest.

⁵ Diseases abbreviated as BW: Bacterial Wilt, PRR: Phytophthora Root Rot, FW: Fusarium Wilt, An: Anthracnose, VW: Verticillium Wilt, Aph: Aphanomyces Root Rot

⁶ CASC Resistance Rating (percent resistant plants): HR=high resistance (51 +), R=resistant (31-50), MR=moderate resistance (16-30), LR=low resistance (6-15), and S=susceptible (0-5).

Forage Seed Sources, key number refers to Seed Source column in preceeding table.

0	No marker, or discontinued for 2001. The variety is listed to update previous report with 2000 production year data.	11	Andrews Seed Co. 580 S. Oregon, Ontario, OR 97914 541-889-9109	24	Garst Seed Co. 2369 330th St. Slater, IA 50244 800-831-6630
1	ABI Alfalfa, Inc. 2316 259th St., Ames, IA 50014 515-292-2432	12	Barenbrug Midwest 1506 West 32nd. St., Vinton, IA 52349 888-470-5569, 319-472-5569	25	Geertson Seed Farm 1665 Burroughs Rd, Adrian, OR 97901 800-843-0390
*2	Agassiz Seed & Supply 445 7th St. NW, West Fargo, ND 58078 701-282-8118	12	Barenbrug USA P.O. Box 239, Tangent, OR 97389 800-547-4101	26	Gold Country Seed 16506 Hwy 15N, P.O. Box 6043 Hutchinson, MN 55350 320-587-1050
3	AgriPro Seeds, Inc. 2369 330th St., Slater, IA 50244 800-831-6630	13	Bio Plant Research P.O. Box 320, 116E.State St., Camp Point, IL 62320 800-593-7708, 217-593-7707	27	Golden Harvest Box A, 100 J.C. Robinson Blvd. Waterloo, NE 68069 402-779-2531
4	AgVenture East 65064 250th Ave., Kasson, MN 55944 800-657-4890	*14	Brown Seed Farms P.O.Box 186, Prescott, WI 54021 800-712-7696, 715-262-4331	28	Golden Harvest Seeds 27525 135th Ave. North, Cordova, IL 61242 309-654-2234
5	AgVenture Central 513 Main St., Madison Lake, MN 56063 507-243-3263	15	Brunner Seed W3850 U.S. Hwy 10, Durand, WI 54736 715-672-5887	28	Golden Harvest Seeds 251 West Main St., Wabasha, MN 55981 612-565-2945
5	AgVenture Inc. P.O. Box 29, 207 N 7th St. Kentland, IN 47951-0029 888-999-0859, 219-474-5557	16	Cargill Hybrid Seeds P.O. Box 5645 MS16 Minneapolis, MN 55440, 612-742-6743	29	Grassland Central 12912 Ventura Court #24 Shakopee, MN 55379 952.233.5181
5	AgVenture West P.O.Box 184, Jeffers, MN 56145 507-628-4929	*17	CEBECO International Seeds Inc. P.O. Box 229, Halsey, OR 97348 541-369-2251	30	Great Lakes Hybrids 56997 Juneau Rd., Mankato, MN 56001 507-278-4202
5	AgVenture West Central 37752 880 Ave., Olivia, MN, 56277 320-523-2250	*18	CroPlan Genetics P.O. Box 64406, MS7455 St. Paul, MN 55164-0406 800-851-8810, 651-634-8105	30,	Great Lakes Hybrids 9915 W. M-21, Ovid, MI 48866 800-257-7333, 517-834-2251
*6	Albert Lea Seed House 1414 West Main, P.O. Box 127 Albert Lea, MN 56007 800-352-5247, 507-373-3161	19	Crows Hybrid/Midwest Seed Genetics P.O. Box 518, 23751 Hwy. 30 E. Carroll, IA 51401 800-369-8218, 712-792-6691	31	Gutwein/Garst Seeds 15691 West 600 South, Francesville, IN 47946 800-457-2700, 219-567-9141
7	Alfalfa Genetics Direct P.O. Box 404, Princeton, IL 61356-0404 866-233-7283	19	Crows Hybrid/Midwest Seed Genetics 5932 Schuman Drive, Madison, WI 53711 608-274-8215	32	Interstate Payco Seed Co. P.O. Box 338, West Fargo, ND 58078 701-282-7338
8	Allied Seed 1108 Hillsdale Drive, Macon, MO 63552 800-880-8127	20	Dahlco Seeds 14730 15th St., Cokato, MN 55321 320-286-5982	33	Jung Seed Genetics, Inc. 341 South High St., Randolph, WI 53956 800-242-1855, 920-326-5891
8	Allied Seed 9311 Highway 45, Nampa, ID 83686 219-833-6992	*21	Dairyland Seed Co. P.O. Box 958, West Bend, WI 53095 800-236-0163	33	Jung Seed Genetics, Inc. 1229 NW 41st St, Rochester, MN 55901 507-288-1930
9	America's Alfalfa 12351 W.96th Terrace, Suite 101 Lenexa, KS 66215 913-599-2240 Ext. 11	22	Elk Mound Seed P.O. Box 187, 308 Railroad Ave Elk Mound, WI 54739 715-879-5556	34	Kaltenberg Seed Farms P.O. Box 278, 55506 State Rd.19 Waunakee, WI 53597 800-383-3276, 608-849-5021
10	AMPAC Seed Co. P.O. Box 318, Tangent, OR 97389 614-890-2929	23	Fontanelle Hybrids 10981 8th St., Fontanelle, NE 68044-2505 402-721-1410	35	KayStar Seeds P.O. Box 947, Huron, SD 57350 605-352-8791
10	AMPAC Seed Co. 403 Wooster Rd., Winona Lake, IN 46590 219-268-9549			36	Kusmaul Seeds 9020 Hwy. 18, Mt. Hope, WI 53816 608-988-4568

- 37 L & H Seed
4756 West Hwy. 260, Connell, WA 99326
509-234-4443
- *38 La Crosse Forage & Turf Seed Co.
P.O. Box 995, LaCrosse, WI 54602-0995
800-329-1909
- 39 Landec Ag
P.O. Box 898, 306 North Main St.
Monticello, IN 47960-0898
800-321-3177
- 40 Legend Seeds
P.O. Box 241, DeSmet, SD 57006
605-854-3346
- 41 Lemke Seeds
10220 N. Granville Rd., Mequon, WI 53097
262-242-2647
- 42 LG Seeds, P.O. Box 216, 905 Dexter St.
Prescott, WI 54021
800-637-2887
- 43 Mallard Seed
P.O. Box 637, 311 W.Broadway
Plainview, MN 55964
800-562-1768, 507-534-2300
- *44 Minnesota Seed Solutions
P.O. Box 346, Savage, MN 55378
800-328-5898, 952-445-2606
- 45 Monsanto
3670 CR 207, Liberty Hill, TX, 78642
512-778-5316
- 46 Mycogen Seeds/Dow Agroscience
9330 Zionville Road, Indianapolis, IN 46268
317-337-7560
- 47 NC+ Hybrids
Box 4408, Lincoln, NE 68504
402-467-2517
- 48 NetSeeds
9001 Hickman Rd., Ste.320
Urbandale, IA 50322
515-331-0939
- 49 North-Gro Seeds Inc.
613 N. Randolph St., Cuba City, WI 53807
608-744-7333
- 50 Novartis Seeds
P.O. Box 959
7500 Olson Memorial Highway
Golden Valley, MN 55427
612-593-7286
- *51 Olds Seed Solutions
2901 Packers Ave., Madison, WI 53704
800-356-7333, 608-249-9291
- 52 PGI / MBS Genetics LLC
225 West 1st St., Story City, IA 50248
800-247-3967, 515-733-5274
- 53 Pioneer Hi-Bred International Inc.
7100 NW 62nd Ave., Box 1150
Johnston, IA 50131
515-334-6645
- 54 Producers Hybrids, Inc.
P.O. Box C, Battle Creek, NE 68715
888-675-3190, 402-675-2975
- *55 R.J. Hunt Seed Co.
13477 Co. Rd. 101, Wadena, MN 56482
218-631-4190
- 56 Ramy International Ltd.
1329 N. River Front Drive
Mankato, MN 56001
800-658-7269, 507-387-4091
- *57 Renk Seed Company
6800 Wilburn Rd., Sun Prairie, WI 53590
800-289-7365, 608-837-7351
- 58 Shepherd Seeds
RR 1 535 Middle Rd., South Beloit, IL 61080
800-383-2676
- 59 Spangler Seeds
803 W. Racine St., Jefferson, WI 53549
414-674-4606
- *60 Specialty Seeds
1600 Railroad Ave., Albany, MN 56307
320-845-7689
- 61 Terning Seeds, Inc.
15365 60th St. SW, Cokato, MN 55321
320-286-2168
- 62 The DeLong Company
513 Front St., Clinton, WI 53525
608-676-2255
- *63 Top Farm Hybrids
P.O. Box 850, Cokato, MN 55321
320-286-5516
- 64 Trelay, Inc.
11623 State Rd 80, Livingston, WI 53554
800-421-0397, 608-943-6363
- 65 Tri-State Seed
28401 Golden Gate Rd.
Sleepy Eye, MN 56085
800-203-8581, 507-794-3078
- 66 Twin Cities Seeds
7265 Washington Ave. South, Edina, MN 55439
800-545-8873, 612-545-8879
- 67 UAP Midwest
P.O. Box 10, Wall Lake, IA 51466
712-664-2444
- 68 United Suppliers Inc.
P.O. Box 538, Eldora, IA 50627
515-858-2341
- 69 Wensman Seed Co.
P.O. Box 190, Wadena, MN 56482
218-631-2954
- *70 Werner Farm Seeds
3104 Millersburg Blvd., Dundas, MN 55019
507-645-7995
- 71 W-L Research, Inc.
P.O. Box 8112, 2901 Packers Ave.
Madison, WI 53708-8112
800-406-7662, 608-240-0630
- 72 Ziller Seed Co., Inc.
76374 380th St., Bird Island, MN 55310
320-365-3674
- * These sources are useful contacts for public alfalfas (2,6,55,70) and several other forages species, such as
Red clover (17,18,21,38,44,51,55,57,60,63,70)
Birdsfoot trefoil (2,6,17,38,44,51,55,70)
Kura clover (6,38,70)
Reed canarygrass (2,6,14,38,44,51,55,70)
Smooth bromegrass (2,6,14,18,57)
Orchardgrass (2,6,14,17,18,38,44,51,55,57,70)
Timothy (2,6,14,17,18,38,55,57,63,70)
Tall fescue (2,6,17,18,38,44,51).