



Selecting alfalfa varieties with high forage yield potential and persistence is fundamental to profitability. Yield potential of public and privately developed alfalfa varieties has been continually evaluated in research trials at the University of Minnesota over the past 80 years. As participation from alfalfa marketers and developers has declined, we have reduced the numbers of trials. This is the final year of the alfalfa variety testing program.

Yield results are for alfalfa varieties currently tested at Rosemount, MN. This is the final year of the 2018 trial.

There are many other alfalfa variety traits important for growers to consider in selecting a variety. These include winter survival, disease resistance, and leafhopper resistance. Variety comparisons for these traits provided by alfalfa marketers are described in the National Alfalfa and Forage Alliance's Alfalfa Variety

Ratings leaflet at https://www.alfalfa.org/pdf/2021_Alfalfa_Variety_Leaflet.pdf.

Winter Survival

The potential of severe winters makes winter survival a primary consideration in variety selection for most areas of Minnesota. Winter survival potential of varieties is difficult to determine because winter injury can occur as a result of weather events that cause varied responses in alfalfa plants of differing ages. A test has been developed to determine relative levels among varieties. Winter survival levels of alfalfa varieties are shown at <https://www.alfalfa.org/varietyratings.php>.

Forage Yield

Yield results for alfalfa varieties tested in 2017 and 2018 Minnesota trials are presented in Table 1. Yields are expressed as a percentage of check variety yields; for example, "113" means the variety had 13% greater yield than the average of the check varieties. Within the table, varieties are ranked according to their average performance across ALL current trials in which they have been tested (2018 seeding years). LSD numbers beneath yield columns indicate whether the difference between yields is due to genetics or to other factors, such as variations in the environment. If the yield difference between two entries exceeds the LSD value, the higher-yielding entry was superior in yield.

Varietal yield difference tends to increase with stand age. Thus, to choose a variety for short-term stands, consider yield performance the first and second years after seeding (e.g., yield performance in 2019 and 2020 for a 2018 seeding year).

Potato Leafhopper Tolerance

Potato leafhoppers (PLH) are usually the most damaging insect pest of alfalfa in Minnesota. Despite their potential for significant damage, PLH are not a problem in every harvest, year, and region of Minnesota. Variety resistance to potato leafhopper is available and described at <https://www.alfalfa.org/varietyratings.php>.

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). Variety resistance ratings for each disease are available at <https://www.alfalfa.org/varietyratings.php>.

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 that varieties with less than Very Good (2.0) Winter Survival have at least (R) levels of disease resistance to produce more than two years after the seeding year under intensive management (4 cuts/season) in the east central and southeastern areas of Minnesota.

Blends

Some 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. 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. Therefore, using certified seed of adapted, high-yielding varieties best assures trueness to name.

Authors and Researchers

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For a web version of this report, go to varietytrials.umn.edu/alfalfa

Alfalfa

Planting Rate and Date

Bushel Weight, Pounds.....60

Seeds/Pound.....220,000

Planting Rate, Pounds/Acre

Alone.....12-15

With Grass.....5-10

Planting Rate, Seeds/Sq. Ft.

Alone.....65

With Grass.....25-50

Planting Date....Late April-Early May
or Late July-Mid August

Table 1. Alfalfa variety yields as a percentage of check varieties at Rosemount (Dakota County) seeded in 2017 and 2018.

Variety ¹	Marketer	Rosemount							
		2017 Seeding				2018 Seeding			
		2018	2019	2020	3-Yr Total	2019	2020	2021	3-Yr Total
AFX 469	Alforex	120	130	124	124	—	—	—	—
SW 3407	SW	120	116	118	118	—	—	—	—
HybriForce-4400	Alforex	124	129	114	122	118	108	117	114
AFX 460	Alforex	119	103	103	109	125	121	112	119
AFX 429	Alforex	120	113	114	116	—	—	—	—
Finch	Blue River	—	—	—	—	115	114	125	118
SW 5210	SW	124	115	106	115	112	112	134	119
SW 4107	SW	125	114	101	114	110	115	139	121
Quail	Blue River	115	108	109	111	—	—	—	—
FSG 415 BR Alfalfa	La Crosse	115	108	100	108	—	—	—	—
Viking 372 HD	Albert Lea	109	106	106	107	—	—	—	—
Robin	Blue River	114	102	103	107	—	—	—	—
Swift	Blue River	—	—	—	—	103	105	127	112
Skylark	Blue River	—	—	—	—	106	98	105	103
Luka1 Alfalfa	Albert Lea	98	101	99	99	—	—	—	—
Luzelle Alfalfa	Albert Lea	102	95	101	100	—	—	—	—
King Bird	Blue River	108	91	97	99	—	—	—	—
5312	Check	104	106	101	104	112	106	103	107
Oneida VR	Check	97	94	97	96	96	99	102	99
Vernal	Check	99	100	102	100	92	95	95	94
Checks, ton/acre as hay		6.7	5.3	5.3	17.4	5.2	6.1	4.6	15.9
LSD 5%		13	23	16	15	13	13	18	16

¹Varieties are ranked according to their performance across all current trials.

Table 2. Sources of forage seed for 2018 trials.

Marketer	Company	Web URL
Albert Lea	Albert Lea Seed	www.alseed.com
Alforex	Alforex Seed	www.alforexseeds.com
Blue River	Blue River Hybrids	www.blueriverorgseed.com
La Crosse	LaCrosse Forage and Turf	www.lftseed.com
SW	S & W Seed	www.swseedco.com
U of MN	University of Minnesota Forages	www.extension.umn.edu/forages