Buffalo BRAND SEED

GREELEY, COLORADO

IMPROVING ALFALFA PRODUCTION

with HYBRID VIGOR & UNIFORMITY

from the Alfalfa Specialists of Buffalo Brand Seed Company & Dairyland Seeds

2022

DAIRYLAND SEED ALFALFA

MAXIMUM PRODUCTIVITY ON EVERY ACRE

Buffalo Brand Seed is proud to provide Dairyland Seed Alfalfa Hybrids and Varieties to Plains producers. Hybrid alfalfas with unparalleled plant population uniformity vigor, drought tolerance, water use efficiency, tonnage and forage quality. Industry-leading salt tolerance. Branch root growth capabilities providing superior saturated soil performance. The plant breeders at Dairyland Seed are raising alfalfa to new levels of productivity. Raise your productivity with Dairyland Seed alfalfa on your acreage.

VARIETY CHARACTERISTICS AT A GLANCE	Fall Dormancy	Winter Survival	DRI	Stem Size	Root Type	Spring Vigor	Summer Re-Growth	Drought Tolerance	Forage Yield	Forage Quality	Early Seedling Growth	Traffic Tolerance
HybriForce 4400	4	2	34/35	Very Fine	Tap	1	1	1	1	1	1	1
HybriForce 4420-Wet	4	3	35/35	Very Fine	Branch	1	1	1	1	2	1	1
HybriForce 3600	6	-	-	-	Tap	1	1	1	1	2	1	2
HybriForce 3430 HiGest	4	2.1	33/35	Very Fine	Tap	1	1	1	2	1	1	1
HybriForce 3420-Wet	4	1.8	35/35	Very Fine	Branch	1	1	2	1	1	1	1
HybriForce 3400	4	1.8	33/39	Very Fine	Tap	1	1	1	1	1	1	1
Magnum 8	4	2.2	34/35	Fine	Tap	2	2	2	2	1	2	1
Magnum 7	4	1.6	34/35	Fine	Tap	2	2	2	2	1	2	1
Magnum Salt	4	1.8	28/30	Average	Branch	3	3	2	3	2	2	2

Fall Dormancy:
1 - Most Dormant 11 - Non Dormant

Winter Survival: 1 - Superior 5 - Low

Buffalo BRAND SEED GREELEY, COLORADO

Spring Vigor, Summer Re-Growth, Drought Tolerance, Forage Yield, Forage Quality, Early Seedling Growth, Traffic Tolerance:
1 - Most Desirable 5 - Less Desirable

FallDormancy:
Varieties with large numerical ratings are less dormant, meaning that spring growth starts earlier and autumn growth continues later than varieties with smaller numerical ratings. The extended growing season utilized by less dormant,(larger numbered) varieties may produce more hay tonnage with available soil water since alfalfa growth is most efficient during the mild temperatures of spring and fall. Large dormancy numbered alfalfa varieties are typically ready for first cutting earlier in the spring than small dormancy numbered varieties. As a management strategy, acreages planted to Fall Dormancy 4 varieties can be complemented with other acreages of Fall Dormancy 6 varieties so that ideal scheduling of first cutting can be spread over a longer period of time.

Winter Survival:
Small numerical ratings indicate varieties with better winter hardiness (maximum winter survival with minimum winter injury) than varieties with large numerical ratings. Winter survival ratings of 3.5 and smaller numerical ratings exhibit good adaptability south of Interstate 70 through the Central Plains.

Stem Size:
Fine stems contribute to faster dry down and superior forage quality.

DRI:
Disease Resistance Index

Root Type:
Tap root growth habits are well adapted for growth in well drained soils with limited ability to persist in soils that are saturated for prolonged time periods. Varieties with the ability to produce branch roots are better able to persist and thrive in saturated soils that are typical in low areas of fields and sites with high water tables. In addition, varieties with branch root growth capabilities are also very productive on well drained soils.

HybriForce-4400

GEN-4 HYBRID ALFALFA

msSUNSTRA®

• RAISES THE BAR IN YIELD POTENTIAL

- 4th Generation hybrid alfafa using Sunstra Technology
- Excellent disease resistance
- Broadly adaptive, excels in wide range of environments
- Tall, dense, leafy alfalfa with fine stems

HybriForce-4420/WET

GEN-4 BRANCH-ROOTED HYBRID ALFALFA

msSUNSTRA®

•NEW RELEASE FOR WET SOILS

- 4th Generation hybrid alfafa using Sunstra Technology
- Excellent 35/35 disease resistance
- Best branch-root alfalfa for tough establishment
- Unique ability to modify root structure for conditions

HYBRIFORCE 3600

GEN-3 HYBRID ALFALFA

msSUNSTRA®

- Higher yield than HybriForce-2600
- Strong performance over the life of the stand
- Excellent pest resistances

MAGNUM8 NON-HYBRID

- Highest yielding non-hybrid genetics
- Unique ability to produce high yields in multiple environments
- Highly digestible forage resulting in high RFQ scores
- Fine stemmed

HYBRIFORCE 3430

GEN-3 HYBRID ALFALFA

msSUNSTRA® Hi-Gest ALFALFA TECHNOLOGY

- Low lignin hybrid alfalfa
- First and only low lignin hybrid alfalfa on the market
- Wider harvest window of up to 7 days
- Produces fine stemmed palatable forage
- Excellent disease resistance

HYBRIFORCE 3400

GEN-3 HYBRID ALFALFA

GENERATION 3 HYBRID ALFALFA
Building On & Surpassing the *HybriForce 2400* Yield Advantage

- New standard for yield potential
- msSunstra Hybrid Alfalfa Technology
- Exceptional yield in drought tolerance
- Provides a dense, uniform stand of high quality forage
- Very fine stemmed and palatable

HYBRIFORCE 3420/WET

GEN-3 HYBRID ALFALFA

msSunstra Hybrid Alfalfa Technology

- Highest yielding Branch-Root Alflafa
- Best alfalfa for tough establishment conditions and outstanding yield in good soil
- Designed and bred to handle the highest stress environments
- Excellent disease resistance
- Excellent leaf to stem ratio for high quality forage

MAGNUM 7

High Yielding FD4 Non-Hybrid Genetics!
Great forage quality potential with a wide harvest window
Consistent performance
Excellent disease resistance (34/35)
Scores very well for winter survival and persistence

MAGNUM SALT

Salt Tolerant Alfalfa!
Fall Dormancy 4
Winter Survival 1.8
Exhibits high level of the branch rooted trait
Able to thrive in wet soils

HYBRID ALFALFA ADVANTAGES

UNIFORM GROWTH

Uniform growth, closer to the **"TABLE TOP"** crop canopy that has always been the hallmark of good farming.
The majority of plants in a field of hybrid alfalfa are genetically very similar, like twins with hybrid vigor.
This results in a growth pattern that is **MORE UNIFORM IN HEIGHT & DENSITY.**

HYBRID ALFALFA VARIETIES = GENETICALLY UNIFORM

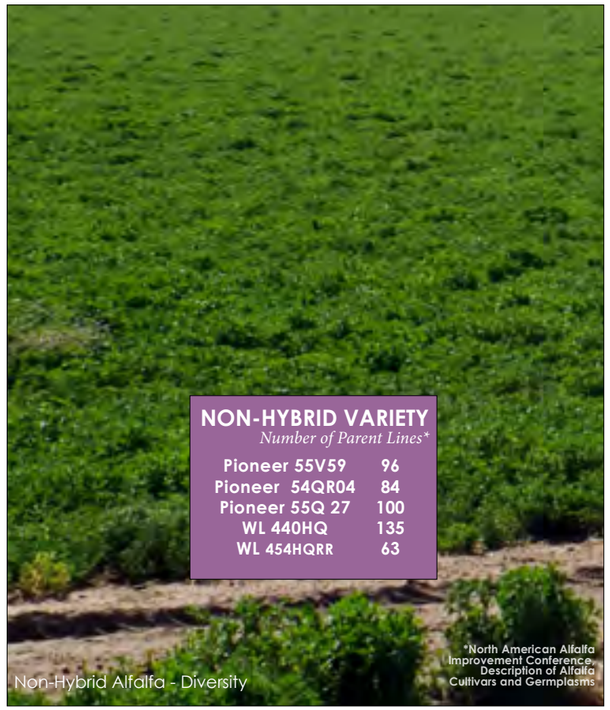
NON-HYBRID ALFALFA VARIETIES = GENETICALLY DIVERGENT

WHY?

Pollen carried by bees is responsible for alfalfa seed formation. Managing bees and the pollen they carry is one of the challenges faced by alfalfa breeders. And the reason that alfalfa varieties produced with conventional breeding methods do not have the very high level of genetic uniformity that is characteristic of other major crops that American farmers produce. "Imagine grazing a pure bred Angus herd on open range where your neighbor's Shorthorn, Holstein and Jersey bulls could wander through at any time. At weaning time you would have a strange looking calf crop with very different size and weights." says Mike Velde, Dairyland Seeds alfalfa breeder. "To produce hybrid alfalfa, we had to develop methods similar to that which have been used in producing hybrid corn but have never been used in any other alfalfa breeding program. We take extraordinary measures to control pollination in hybrid alfalfa seed production, to reduce the unpredictable open range scenario - the result being that we put seed in the bag that leads the industry in genetic uniformity."

"No one would plant a seed mix of 20 corn hybrids with different maturities **INTERMINGLED** in the same field. However this is similar to what we do when we plant conventional alfalfa varieties because the individual plants in a stand of conventional non-hybrid alfalfa **GROW & DEVELOP AT DIFFERENT RATES**. Alfalfa producers had no alternative until hybrid alfalfa became available."

HybriForce Hybrid Alfalfa - Uniformity



Non-Hybrid Alfalfa - Diversity

HARVEST TIMING

of conventional non-hybrid alfalfa varieties has always been a COMPROMISE against the competing goals of yield, forage quality and stand longevity. The plant populations in fields of HybriForce alfalfa are very uniform as compared to non-hybrid alfalfa fields. These improvements in uniformity increase the HybriForce alfalfa producer's ability to effectively meet the goals of yield, quality and stand longevity. This is best understood by analyzing the condition of the alfalfa plant population at harvest time.

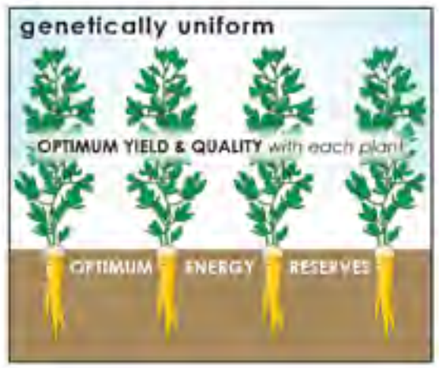
ABOVE GROUND

The majority of plants within the field have reached the optimum stage of forage production for high yields and excellent quality forage.

BELOW GROUND

Alfalfa root/crown energy reserves are uniformly recharged, enabling the millions/ billions of plants in the field to initiate uniform vigorous regrowth. In addition, when plant crowns are consistently recharged at the time of each cutting, plant health is maintained. Population density, stand life and the ability to suppress weeds are improved.

HYBRIFORCE HYBIRD ALFALFA



WHY PLANT HYBRIFORCE ALFALFA?

Hybrid vigor and uniformity has taken the guess work out of choosing the right harvest timing strategy for your alfalfa field. At late bud stage, the vast majority of plants in a field of HybriForce alfalfa will have optimum quality (no bloom), forage yield and plant health (carbohydrate levels at maximum recharge). HybriForce, the simple answer for better quality, yield and stand health.

WHAT'S THE GENETIC MAKEUP OF HYBRID ALFALFA?

Hybrid alfalfa is derived from 3 parent lines, similar to the breeding process that is used to produce 3 way cross corn or sorghum hybrids. As with corn and sorghum, the 3 parent lines are combined into one uniform hybrid. Hybrid alfalfa seed, like all other crop hybrids, must be at a minimum of 75% hybrid seed to be legally labeled and sold as a hybrid. HybriForce alfalfa seed typically ranges from 75 to 82% hybrid. This represents a level of uniformity that is far superior to any conventional alfalfa variety.

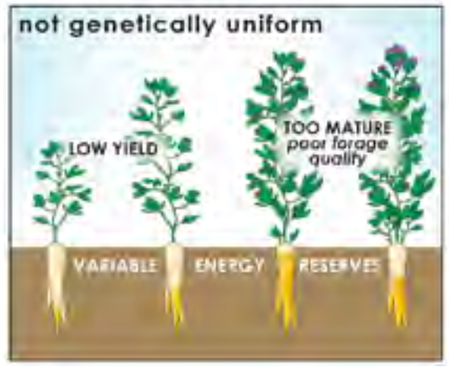
ABOVE GROUND

The flowering date of the plants within the field population can vary as much as 21 days. Some plants will be overly mature with poor forage quality at the same time that others are immature with poor yield. Forage yield and quality will be an average of a wide range of maturities with only a small percentage of plants at the optimum stage of development.

BELOW GROUND

Plants within the field will have variable levels of root/crown energy reserves. In the short term, regrowth is uneven. Long term, plants with low energy reserves weaken and die. As alfalfa stands thin, yields are lower and forage quality drops as the remaining plants become coarse stemmed and weeds increase.

NON-HYBRID ALFALFA



HOW DIVERSE IS THE GENETIC MAKEUP OF CONVENTIONAL NON-HYBRID ALFALFA VARIETIES?

The number of parent lines in most alfalfa varieties is documented in the North American Alfalfa Improvement Conference Description of Alfalfa Cultivars and Germplasms *(www.naaic.org/resource/cultivar.php)*. The number of parent lines of most varieties range from the low 30's to 150 or more. These multiple parent lines randomly cross pollinate during the seed production process and result in a mix of seed that will produce plants with varying maturities and levels of vigor.

HYBRIFORCE ALFALFA, NO COMPROMISE NEEDED

NON-HYBRID ALFALFA, REQUIRES COMPROMISE

YIELD ADVANTAGE

Yield advantage over non-hybrid alfalfa is commonly experienced with hybrid alfalfa production. Replicated trials indicate that the latest generations of hybrid alfalfa will typically out yield the best adapted varieties by a margin averaging 10%. Commercial producers frequently report a GREATER YIELD ADVANTAGE, especially when taking advantage of the aggressive early maturity harvest schedule to which HYBRIFORCE IS TOLERANT.

"The vigor of HybriForce **improves every aspect** of alfalfa production without changing management styles. The **GENETIC UNIFORMITY** of HybriForce responds well to **precision management** and will deliver additional benefits."

FINE STEMMED

Fine stemmed HybriForce alfalfa produces tightly packed, **HEAVIER BALES** than conventional non-hybrid alfalfa bales.

DENSE LEAFY GROWTH

Exceptional dense leafy growth pattern is characteristic of HybriForce Alfalfa. Growers comment that DENSE GROWTH is noticable, so dense that walking through their fields is difficult

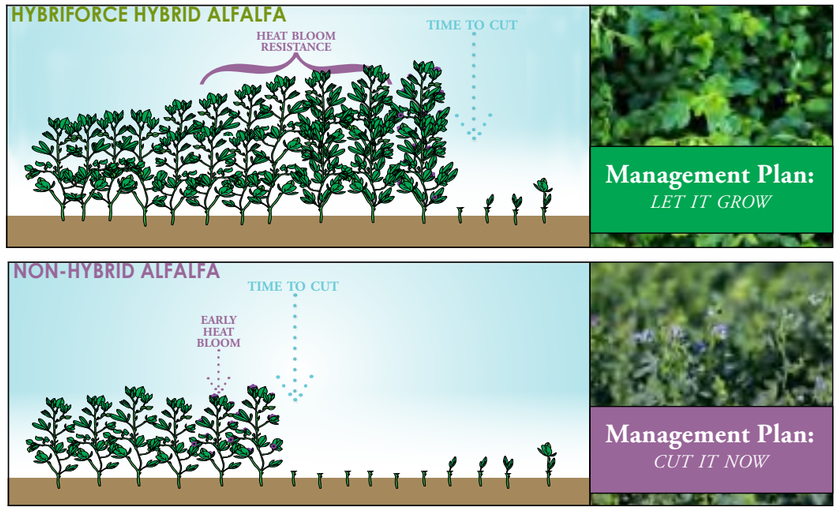
SEEDLING VIGOR & FAST REGROWTH

Superior SEEDLING VIGOR and FAST REGROWTH of established stands after cutting, the result of hybrid vigor and good energy reserves throughout the alfalfa plant population.

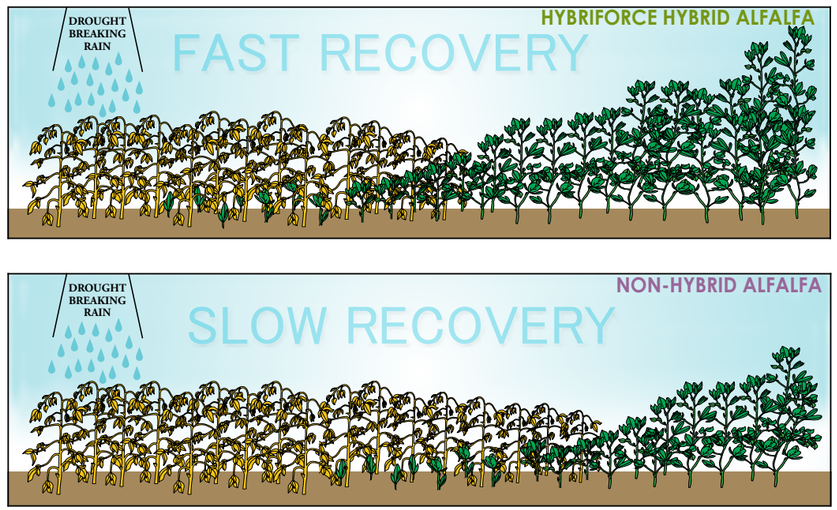
RESISTANT TO ENVIRONMENTAL STRESS

Heat bloom (early bloom during periods of summer heat) is noticeably delayed in hybrid fields as compared to non-hybrid alfalfa. Hybrids are more THRIFTY and capable of withstanding environmental stress than non-hybrids. As a result hybrid alfalfa fields are better able to "wait out" periods of hot dry weather by staying in a vegetative growth pattern. This positions the hybrid to produce additional forage when temperatures moderate and/or late moisture is received. After severe dormancy inducing drought, REPLENISHED soil moisture initiates RAPID RECOVERY and REGROWTH in HybriForce Alfalfa.

HEAT BLOOM RESISTANT

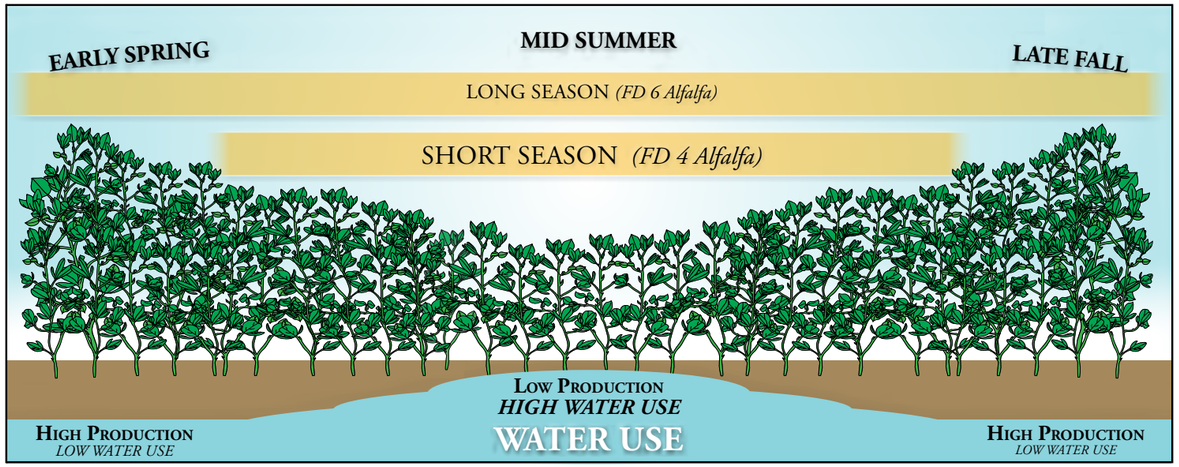


DROUGHT TOLERANT



HYBRID ALFALFA STRATEGIES

FULL SEASON STRATEGY



Central & Southern Plains: Take Advantage of Mild Temperatures in Spring & Fall With Full Season Varieties

Full season varieties initiate growth earlier in the spring and continue growth later into the fall than traditional short season varieties. Alfalfa produces the most tonnage with the least water consumption during mild temperatures typical of spring and fall. Full season growth habits must be teamed with winter hardiness and spring frost tolerance to complete a package that produces consistent yield advantages. Mike Velde, Dairyland Seeds alfalfa breeder, explains, "Through selection, breeding and testing in our northern nursery, we have been able to identify semi-dormant (full season) alfalfa strains that exhibit excellent winter survival as well as spring frost tolerance. We have incorporated this germplasm into our new HybriForce-2600 alfalfa hybrid, a full season semi dormant hybrid that is a great fit for the central and southern plains climate."

SPRING FROST TOLERANCE

Dairyland Seeds selects for spring frost tolerance during hybrid and varietal alfalfa breeding. Combining early spring growth with spring frost tolerance is the key to capturing the high yield potential accompanying semi dormant (FD 6) varieties. Dairyland Seeds alfalfa varieties lead the industry in spring frost tolerance, a trait incorporated into all the HybriForce Hybrids; an especially important trait in semi dormant, winter hardy alfalfas such as HybriForce 2600.

COMPLIMENTARY ALFALFA DORMANCIES

Establish a Well Timed Harvest Schedule With Complimentary Acreages of Different Fall Dormancy Alfalfa Varieties. First determine your primary dormancy, that being the dormancy that is most productive in your location. In most situations, your primary dormancy should be the least dormant variety that is adapted to your climate. Then compliment your fields planted to primary dormancy with acreages of more dormant varieties. An example would be for a producer on the central or southern plains who uses Fall Dormancy 6 HybriForce 2600 on the majority of his acreage. Complimentary additional acreages of HybriForce 2400, a Fall Dormancy 4, will be ready for first cutting somewhat later than HybriForce 2600, allowing more of the farm's total acreage to be harvested at the ideal time.

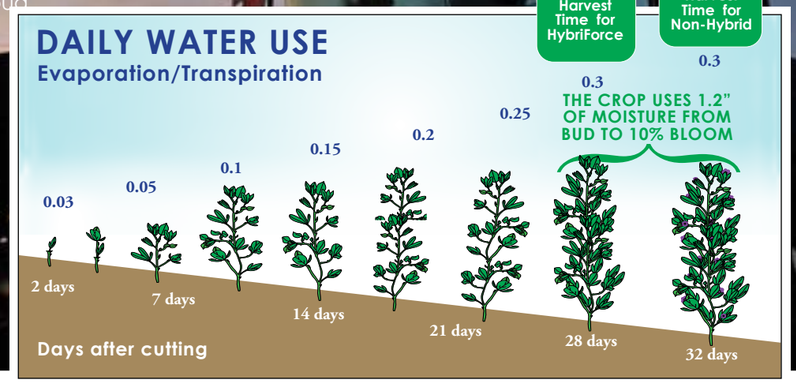
"If a producer needs **MORE THAN 7 DAYS** to swath **all** of his hay acreage, he should **consider planting** some of his acreage to a later developing, **MORE DORMANT VARIETY** to get **ideal** harvest dates spread over a longer period of time."

FINE TUNE SWATHING SCHEDULE

for Water Savings, Improved Hay Quality & Tonnage

In most instances the ideal harvest time with conventional non-hybrid alfalfa is in the early flowering stage. Non-hybrid alfalfa, being composed of a mix of maturities and with variable vigor is poorly adapted to an earlier harvest schedule since the late developing and less vigorous plants will **not withstand the stress of frequent harvest**, causing the stand to rapidly thin. Harvesting after the early flowering stage will lower hay quality but improve the stand life of conventional, non-hybrid alfalfa. **HYBRIFORCE ALFALFA**, because of its hybrid vigor and uniformity, is well adapted and **IDEALLY SUITED** to an early maturity, bud stage, swathing schedule. An early maturity swathing schedule is a great strategy to improve water use efficiency in alfalfa. For every day harvest is delayed after the bud stage of growth, your alfalfa crop is probably using inches of moisture. A delay, whether all at once or accumulated across four cuttings, is likely use about of soil moisture. 2" soil moisture could be used produce additional ¾ to 1 ton quality alfalfa hay.

"You can't always get the hay swathed when you want to. But you should have a target in your cross hairs, and get as close as you can."
TED HESSLINK
Sharp Brothers Seed - Alfalfa Sales Specialist



BRANCHED ROOT GROWTH
WHEN WATER TABLES ARE HIGH

Alfalfa with a **branched root growth** pattern is more productive and has **superior longevity** where **water tables are high**. HybriForce 3420-Wet and Magnum Salt will produce a pronounced branched root growth pattern when exposed to high water table settings. This root growth habit gives alfalfa growers a powerful new tool on problem fields. High water tables may occur in conjunction with high salt levels. Fortunately, **Dairyland Seeds** offers varieties with both **branched root** and **salinity tolerance** where this combination is needed. See "Manage Increased Soil Salinity with New Varieties" below.

MANAGING SOIL SALINITY WITH NEW VARIETIES

"Magnum Salt, is equipped with the **highest level of salinity tolerance in the alfalfa seed industry**, and has been used to reclaim saline soils that have become unproductive for general agriculture." says Mike Velde, alfalfa breeder with Dairyland Seeds.

Soil EC Rating as mmho/cm	2.0	3.0	4.0	5.0
ADAPTED VARIETIES	All alfalfa varieties, conventional or improved salinity tolerance	HybriForce 2600 Magnum Salt	Magnum Salt	Magnum Salt

Organic coated hybrid alfalfa
Harvested October 2019

DENNIS SCHWARTZKOPF

Colorado/Nebraska
970-302-4595
coloplumtreefarm@gmail.com

Buffalo BRAND SEED

GREELEY, COLORADO

Greeley, Colorado
101 East 4th Street Road
Greeley, Colorado 80631
800-421-4234
info@buffalobrandseed.com

PROUD PARTNERS

with Dairyland Seed

PROVIDING DAIRYLAND ALFALFAS

Hybrid Alfalfas
Salt Tolerance
High Water Table Tolerance

- Hybriforce 4400
- Hybriforce 4420 Wet
- HybriForce 3600
- HybriForce 3430 - HiGest
- HybriForce 3420 Wet
- HybriForce 3400
- Magnum 8
- Magnum 7
- Magnum Salt