NORTHSTAR SEED

Product Guide 2025

Next Generation Forage Seed

DSV

Innovation for your growth

www.dsv-northstar.com

DSV Worldwide

As a worldwide breeding and seed company with 100 years of experience, Deutsche Saatveredelung AG (DSV) offers its customers innovative varieties and complex cultivation methods. DSV is a full-service provider for the entire agricultural crop rotation and turf grasses. We are a successful breeder of oilseed rape and cereals, as well as grasses and small-seeded forage legumes. Furthermore, we are specialists in cover crops and offer a wide-ranging maize portfolio as well as sorghum. We provide turf customers with several solutions, beginning with single varieties for all kind of turf use, high quality mixtures for professional or private use up to complete programs for the do-it-yourself market. Our activities encompass not only the breeding and production of new varieties with the properties and combinations of features desired by our customers, but also expert advice, high quality service and extensive marketing through a global distribution network. Working on the 'one-stop shop' principle, we are a full-service supplier in the seed sector.

RESEARCH • BREEDING • DISTRIBUTION • CONSULTING • PRODUCTION
IQ INTEGRATED QUALITY

DSV Northstar: Innovation for your Growth

In 2022 Northstar Seed merged with Deutsche Saatveredelung AG (DSV) and DSV Northstar Ltd. was built. With this union 100 years of European experience in plant breeding and research was joined with 40 years of Western Canadian seed production and agronomic service excellence. The combination of the strengths of both companies would benefit seed producers across Western Canada. DSV Northstar stands for extensive breeding and testing on forage grass species and small-seeded legumes. This includes Italian, Annual and Hybrid Ryegrass, Timothy, Meadow Fescue, Tall Fescue, Orchardgrass as well as different Clover species and Alfalfa.

DSV as a grass breeder selects new forage crops not only for yield, tolerance to diseases and abiotic stress factors, they also place a special focus on forage quality. The aim is to select forage plants for a high milk yield. Therefore varieties are especially selected for an extraordinary digestibility and a high nutrient concentration. Once varieties are selected for yield and quality, cold weather testing and climate suitability takes place in our testing facilities in Neepawa, Manitoba. Varieties have to endure and thrive in the harsh Canadian climate before they can go out in a DSV Northstar branded seed bag.

Prior to Northstar Seed joining DSV, 30 years of experience in testing and producing of DSV varieties were present. After intensive testing, DSV products such as ELUNARIA Annual Ryegrass, NOVIO Timothy and PREVAL Meadow Fescue were made available through Northstar Seed. The result of this strategic relationship finally ended in DSV Northstar Ltd.

Cover crops and soil health are important topics of conversation today. Experience from 100 years of breeding has taught that healthy soil is the basis for sustainable growth. Without a profound understanding of the interactions and processes, resource-conserving agriculture is not possible. DSV breeds healthy, nutrient-efficient varieties and are experts in sustainable crop rotation systems, such as cover crops and undersowing crops.

All this is based on effective quality management which is called Integrated Quality (IQ). This approach encompasses all divisions of the company to implement one integrated and comprehensive product offering that is based on high production standards. DSV Northstar sales agronomists listen to their customers and provide extensive and individualized advice, relaying customer´s needs back to the breeders.

Our goal is to help to create a forage and cover crop plan that will benefit your animals, your soil, and your income. **Innovation for your Growth.**

New Products for 2025

NEW!

FORCE MAX Italian annual ryegrass blend

50% SENDERO & 50% DOLOMIT

DSV Northstar offers producers another great option with this high yielding, exceedingly palatable and digestible blend by combining the strengths of SENDERO and DOLOMIT. **FORCE MAX** will deliver results whether you're planting for silage, hay or using in a cover crop.

MEADOW MAX Meadow Fescue Blend

50% TETRAX & 50% PREVAL

Power up your pastures with **MEADOW MAX** a combination of 2 top performing varieties designed to deliver exceptional yields, superior forage quality, and excellent adaptability. **MEADOW MAX** was designed for its robust winterhardiness with fast spring regrowth, high digestibility, recovery time after grazing or cutting, and its ability to adapt to a wide range of soil types and growing conditions.

Benefits of combining diploid and tetraploid genetics in a grass blend:

Tetraploid ryegrasses usually have higher water and sugar content than diploids, which can improve palatability and animal intake. This combination makes the blend attractive to livestock, leading to better grazing and feed efficiency.

A mix of diploid and tetraploid ryegrass can improve resilience against diseases and environmental stress. Tetraploids often have better tolerance to drought and disease, while diploids tend to withstand cold weather and close grazing.

The balance of traits in a diploid-tetraploid blend can create a versatile, resilient, and nutritionally valuable pasture option suited for diverse climates and management practices.

NEW!

TUNDRA LATE Orchardgrass

Highly digestible variety offers excellent protein content, and unmatched palatability for healthier livestock. This late winter hardy variety provides farmers and ranchers more productive grazing and haying later into the season. Ideal for hay, grazing or silage.

YUKON Tall Fescue

YUKON is bred alongside its sister variety COURTENAY Tall Fescue offering unmatched durability, productivity, and nutrition for your livestock. This hardy performer thrives in harsh conditions ensuring producers consistent production. (Endophyte free)

Alfalfa Selection Guide

Variety	Fall Dormancy	Winter Hardiness	Root Type	Key Features
REVOLUTION MD Maximum Digestibility	3.7	1.7	Tap	Exceptional forage quality – High RFQ (Relative Feed Quality) rating and rate of digestion – Large leaf area with an increased leaf to stem ratio – Outstanding disease and pest resistance package – Excellent winter hardiness combined with high yield potential
PERFECTION Rapid Growth	4	2	Tap	The latest advancement in StandFast Technology – Selected for high forage DM and NDF levels – High multifoliate expression and fast recovery – Well suited for silage production & dairy producers
ROBUST High Yield, Low Dormancy	2	1.5	Tap	High performance synthetic variety – Multifoliate with high leaf to stem ratio – High forage dry matter yield and RFV (Relative Feed Value) – Vigorous roots – Dense crowns
RUGGED ST Salt Tolerant	3	2	Tap	A very hardy variety – Large, broad, deep set crowns – Tolerance to increased salt level
SIDEWINDER Creeping Root	2	1.6	Creeping	Selected for high forage yield with excellent winter hardiness and persistence – Later maturity which adds value to a grass blend – Deep set crown with wheel traffic tolerance – Excellent disease resistance package – Multipurpose variety for forage hay or pasture
EXCEED Branch Root	4	1.8	Branching	Very high forage quality with large multifoliate and trifoliate leaves – Excellent forage quality – High yielding branch rooted variety – Strong disease resistance package combined with branch root technology for all soil moisture conditions
AAC MEADOWVIEW Acid Tolerant	2	3	Branching tap	Acid tolerant variety ideally suited for the foothills of AB and Peace region of AB and BC – Deep set crowns – Erect spring growth habit – Rapid regrowth after cutting
HAYGRAZER Grazing Tolerant	4	2	Fibrous	A flexible variety that is bred for high hay yields as well as grazing tolerance – Aggressive fibrous root system – Sunken crown stands up to grazing pressure and high traffic from equipment – Tolerant to defoliation by the Alfalfa Weevil

Fall Dormancy: 1–4 dormant, 5–7 semi-dormant, 8–11 non-dormant | Winter hardiness: 1 extremely hardy – 6 non winterhardy

Variety	Fall Dormancy	Winter Hardiness	Root Type	Key Features
ALFALFA BLEND 10-5 Adapted to Variable Conditions	Mix of 2-4	Mix of 1.5-2	Creeping, tap, branch and fibrous	Premium blend of five certified varieties with unique traits that enhance plant population across variable field conditions – Now contains Robust and Sidewinder alfalfas, as well as Response, Rugged, and Haygrazer alfalfa
RANCHERS CHOICE BRAND Common #1 Blend	n/a	n/a	Combined creeping and tap	Consistent performing alfalfa blend – Blend of multifoliate, trifoliate and creeping root varieties that are consistent performers

Fall Dormancy: 1–4 dormant, 5–7 semi-dormant, 8–11 non-dormant | Winter hardiness: 1 extremely hardy – 6 non winterhardy

Legume Selection Guide

Species	Hay	Pasture	Flood Tolerance	Drought Tolerance	Key Features
AAC MOUNTAINVIEW Sainfoin	•	•		•	– Non bloating – Similar maturity and regrowth to alfalfa – Suited for multi cut hay or grazing with alfalfa
Cicer Milkvetch		•		•	– Non bloating – Very competitive once established
Birdsfoot Trefoil		•	•		– Non bloating – Reseeds itself – Excellent feed quality
Yellow Blossom Sweet Clover	•			•	– Biennial – Improves soil drainage – Harvest early for best quality
Red Clover	•	•	•		– Tolerates wetter and more acidic soils than alfalfa
Alsike Clover	•	•	•		– Tolerates wet soils with poor drainage
White Dutch Clover		•			– Good for grazing – Good regrowth, also spreads by rhizomes and reseeding itself
Berseem Clover	•				– Annual crops only – Low bloat – Tolerates wet soils
Crimson Clover	•				– Annual crops only – Grows on many different types of soil

Forage Grass Selection Guide

Variety	Hay	Pasture	Saline Tolerance	Flood Tolerance	Drought Tolerance	Key Features
AAC MAXIMUS Meadow Bromegrass	•	•			•	– Taller than FLEET meadow bromegrass – More upright growth habit than FLEET
CARLTON Smooth Bromegrass	•	•	•	•	•	– Widely adaptable – Sod forming – Moderate saline, moisture and drought tolerance
AC KNOWLES Hybrid Bromegrass	•	•	•	•	•	– Smooth and meadow bromegrass hybrid – Yields like smooth brome with a longer growing season similar to meadow brome – Improved leaf expression compared to smooth brome
FALLADINO Annual Ryegrass	•	•		•		– Tetraploid variety – Outstanding rust resistance – Good option for inter & intra cropping
ELUNARIA Annual Ryegrass	•	•		•		– Suitable for hay, haylage or pasture – High yield opportunity – Very good quality with broad leaves
DOLOMIT Italian Ryegrass	•	•		•		– Tetraploid variety – Similar yield and maturity to NABUCCO – Improved disease package
VALERIO Perennial Ryegrass	•	•				– Tetraploid variety – Late maturity – Strong yield – Excellent persistence
SATIN Soft Leaf Tall Fescue	•	•	•	•	•	– SATIN provides excellent forage quality combined with a strong disease package – Very compatible in a stand with other legumes – Very adaptable to high moisture stress and early signs of salinity
TUNDRA Late Orchardgrass NEW!	•	•	•	•		– Exceptional orchardgrass that demonstrated above average winder hardiness – Excellent companion when blended with alfalfa – Moderate drought and flooding tolerance – Selected for high quality (leafy)

Variety	Hay	Pasture	Saline Tolerance	Flood Tolerance	Drought Tolerance	Key Features
YUKON Tall Fescue NEW!	•	•	•	•	•	– Good flood and saline tolerance – Large basal leaves, high quality – Exceptional yield potential – Improved winter hardiness
PREVAL Meadow Fescue	•	•	•	•		– Tolerates wet soils – Withstands close grazing, excellent for rotational grazing – Use in hay and pasture blends
TETRAX Meadow Fescue	•	•	•	•		– Extremely robust tetraploid variety – Winter hardy – High digestibility values
BOREAL Creeping Red Fescue		•		•		– Great performance in pastures under high moisture conditions – Tolerates close grazing – Good quality in fall to freeze up
ATURO Timothy	•	•		•		– Good yielding and persistent – Low tendency for lodging – Large soft leaves
NOVIO Timothy	•	•		•		– Export quality with medium maturity – Large soft leaves – Extremely winter hardy
AAC RENEGADE Crested Wheatgrass	•	•			•	– Excellent persistence – Performed well in all soil zones in Canadian Prairies – Out performs KIRK
KIRK Crested Wheatgrass	•	•			•	– Fibrous root system provides good drought tolerance and winter hardiness – Excellent early spring pasture grass – Great fit for high traffic areas
SPRING GREEN Festulolium	•	•		•	•	– Meadow fescue x perennial ryegrass cross – Improved tolerance to dry conditions and cold stress due to its deep root system – Very good winter hardiness for a festulolium

Max Seed Blends

Hay

PREMIUM HAY MAX

A very hardy mixture that includes ATURO Timothy, our high quality leafy timothy and Alfalfa Blend 10-5, our premium alfalfa blend. This blend delivers a multi-cut hay stand under good management and variable soil conditions.

65 %	ALFALFA BLEND 10-5
30 %	AAC MAXIMUS Meadow Bromegrass
5 %	ATURO Timothy

Seeding rate 10 – 12 lb/ac*

MAXI

High production blend for producers wanting a top quality alfalfa and timothy hay. ATURO Timothy performs well in low lying areas, and will assist in holding up the swath.

90 %	ALFALFA BLEND 10-5
10 %	ATURO Timothy

Seeding rate 10 – 12 lb/ac*

SALINE HAY MAX

This salt tolerant blend is suited for productive soils that are showing the early signs of salt stress.

40 %	COURTENAY Tall Fescue
30 %	RUGGED ST Alfalfa
20 %	CARLTON Smooth Bromegrass
10 %	Tall Wheatgrass

Seeding rate 10 – 12 lb/ac*

RANCHER'S HAY MAX

A very adaptable blend that will deliver high yield potential under good fertility and moisture conditions.

50 %	RANCHER'S CHOICE BRAND Alfalfa
30 %	AAC MAXIMUS Meadow Bromegrass
20 %	CARLTON Smooth Bromegrass

Seeding rate 12 – 14 lb/ac*

LOWLAND MAX

The ideal blend for hay or pasture in areas with poor drainage as it has tolerance to increased moisture conditions.

50 %	COURTENAY Tall Fescue
30 %	PALATON Reed Canary Grass
20 %	ATURO Timothy

Seeding rate 10 – 14 lb/ac*

Dual Purpose: Hay or Pasture

DUAL MAX

This blend of high quality grasses, that have very good regrowth habits and prefer medium to heavy soils, is suited to most grazing or haying systems.

50 %	AAC MAXIMUS Meadow Bromegrass
25 %	CARLTON Smooth Bromegrass
20 %	HIGH ARCTIC BRAND Orchardgrass
5 %	ALFALFA BLEND 10-5

Seeding rate 12 – 14 lb/ac*

WESTERN GRASS MAX

When managed properly, this high quality all grass mix, can be a very productive hay and pasture blend that has no concerns with bloat.

45 %	AAC MAXIMUS Meadow Bromegrass
25 %	HIGH ARCTIC BRAND Orchardgrass
15 %	COURTENAY Tall Fescue
10 %	ATURO Timothy
5 %	Creeping Red Fescue

Seeding rate 14 – 16 lb/ac*

EQUINE PASTURE MAX

An all grass blend for horse owners providing a palatable grazing option from spring to late fall. This blend can also be used as baled forage to provide a nutritious feed source for all classes of horses.

40 %	AAC MAXIMUS Meadow Bromegrass
20 %	HIGH ARCTIC BRAND Orchardgrass
10 %	PREVAL Meadow Fescue
10 %	VALERIO Perennial Ryegrass
10 %	BOREAL Creeping Red Fescue
10 %	ATURO Timothy

Seeding rate 12 – 14 lb/ac*

BLOAT FREE MAX

Utilizes non-bloating legumes AAC MOUNTAINVIEW Sainfoin and Cicer Milkvetch combined with highly palatable grasses.

40 %	AAC MAXIMUS Meadow Bromegrass
25 %	AAC MOUNTAINVIEW Sainfoin
25 %	Cicer Milkvetch
10 %	COURTENAY Tall Fescue

Seeding rate 16 – 18 lb/ac*

DRYLAND DUAL MAX

For dryland pasture production. Meadow Bromegrass offers a long grazing season with very good quality and regrowth. Crested Wheatgrass has excellent early season growth.

65 %	AAC MAXIMUS Meadow Bromegrass
15 %	AAC RENEGADE Crested Wheatgrass
15 %	Pubescent Wheatgrass
5 %	SIDEWINDER Alfalfa

Seeding rate 10 – 12 lb/ac*

SALINE PASTURE MAX

High quality all grass blend designed for saline areas in the low to mid EC levels.

30 %	COURTENAY Tall Fescue
30 %	CARLTON Smooth Bromegrass
20 %	Slender Wheatgrass
20 %	Dahurian Wildrye

Seeding rate 12 – 14 lb/ac*

* On the above Max Seed Blends seeding rates need to be adjusted if coated seeds are used.

Forage Adaption Guide

Grasses

Species	Use	Longevity	Winter Hardiness	Root	Average Seeds/lb.	Growing Period
Creeping Foxtail	Pasture	Long	Good	Sod forming	750,000	Early Spring – Fall
Dahurian Wildrye	Pasture	Short	Good	Bunch grass	80,000	Spring – Fall
Meadow Fescue	Pasture	Short/ Medium	Good	Bunch grass	230,000	Early Spring – Late Fall
Russian Wildrye	Pasture	Long	Excellent	Bunch grass	175,000	Early Spring – Mid Summer
Tall Fescue	Pasture	Medium	Good	Bunch grass	225,000	Late Spring – Fall
Creeping Red Fescue	Pasture/Lawn	Long	Excellent	Sod forming	615,000	Spring – Fall
Kentucky Bluegrass	Pasture/Lawn	Long	Excellent	Sod forming	2,180,000	Spring – Fall
Crested Wheatgrass	Pasture/Hay	Long	Excellent	Bunch grass	175,000	Early Spring
Annual Ryegrass (Italian)	Hay/Pasture	Annual	Poor	Bunch grass	230,000	Spring – Fall
Intermediate Wheatgrass	Hay/Pasture	Short/ Medium	Good	Sod forming	88,000	Late Spring – Mid Summer
Meadow Bromegrass	Hay/Pasture	Long	Good	Bunch grass	80,000	Early Spring – Late Summer
Orchardgrass	Hay/Pasture	Short	Fair	Bunch grass	650,000	Spring – Fall
Perennial Ryegrass	Hay/Pasture	Short	Poor	Bunch grass	330,000	Spring – Fall
Pubescent Wheatgrass	Hay/Pasture	Medium	Good	Sod forming	100,000	Early Spring – Mid Summer
Smooth Bromegrass	Hay/Pasture	Long	Excellent	Sod forming	136,000	Mid Spring – Mid Summer
Reed Canarygrass	Hay/Pasture	Long	Medium	Sod forming	534,000	Spring – Summer
Tall Wheatgrass	Hay/Pasture	Long	Excellent	Bunch grass	79,000	Late Spring – Mid Summer
Slender Wheatgrass	Hay/Pasture	Short	Good	Bunch grass	160,000	Mid Spring – Mid Summer
Timothy	Hay/Pasture	Medium	Good	Bunch grass	1,230,000	Spring – Summer
Western Wheatgrass	Hay/Pasture	Long	Excellent	Sod forming	110,000	Late Spring – Summer

Legumes

Species	Use	Longevity	Winter Hardiness	Root	Average Seeds/lb.	Growing Period
Birdsfoot Trefoil	Pasture	Long	Good	Tap rooted with branches	370,000	Spring – Fall
Cicer Milkvetch	Pasture	Long	Good	Creeping rooted	130,000	Late Spring – Fall
Sainfoin	Pasture	Long	Fair	Tap rooted	18,000 unhulled	Spring – Summer
White Clover	Pasture	Short/Long	Good	Rhizomatous	800,000	Spring – Fall
Alfalfa	Hay/Pasture	Long	Good	Tap, branch, creeping rooted and sunken crown	200,000	Spring – Fall
Alsike Clover	Hay/Pasture	Short	Fair	Branched	700,000	Spring
Red Clover	Hay/Pasture	Long	Poor	Tap rooted with side branches	275,000	Spring
Sweet Clover	Hay/Silage	Short	Fair	Tap rooted	260,000	Spring of 2nd Year

Lawn Seed Blends

Mixture	Components	Moisture Requirement	Key Features
DELUXE BLEND	70% Kentucky Bluegrass 20 % Creeping Red Fescue 10 % Perennial Ryegrass	• • • •	– Contains the highest percentage of Kentucky Bluegrass – For homeowners wanting a lush, vibrant green lawn
SUN AND SHADE	50 % Kentucky Bluegrass 30 % Creeping Red Fescue 20 % Perennial Ryegrass	• • •	– Best suited for sunny areas and will tolerate partial shade
INSTAGREEN	40 % Kentucky Bluegrass 40 % Creeping Red Fescue 20 % Annual Ryegrass	• • •	– Very quick to establish – Most economical blend for general use
NITROGREEN NEW!	40 % Kentucky Bluegrass 35 % Creeping Red Fescue 15 % Annual Ryegrass 10 % EUROMIC Small leafed turf clover	• • •	– Provides natural nitrogen – Increase wear qualities – Reduced weed invasion – Improved drought tolerance
ECO-GROW	35 % BOREAL Creeping Red Fescue 25 % Sheeps Fescue 25 % Hard Fescue 15 % Chewings Fescue	•	– Low maintenance blend of premium fescues – Low growing – Less mowing – Ideal for small acreages or for securing ground cover for livestock habitat
PLAYGROUND BLEND	30 % Creeping Red Fescue 30 % Hard Fescue 20 % Sheeps Fescue 10 % CORSAIR Kentucky Bluegrass 10 % Turf Type Perennial Ryegrass	• •	– A low maintenance, easy to manage blend that will last for years – Stands up to heavy foot traffic

Moisture requirement: • • • • = high • = low

Small leaf turf clover in lawns: NITROGREEN NEW!

DSV Northstar is pleased to offer a new 2025 turf mixture that incorporates the environmental and agronomic benefits of self-fertilizing very small leaf turf clover. The mix will be a combination of high quality Kentucky bluegrass, creeping red fescue, annual ryegrass and EUROMIC turf clover.

The addition of EUROMIC clover will provide drought tolerance and has the ability to reduce fertilizer requirements for your lawn.

EUROMIC´s ability to collect nitrogen from the air and deliver it to the surrounding grass will result in a bright, consistently beautiful green colour of the lawn. It also results is an extended growth pattern with a steady supply of natural nitrogen. The very small leaves of EUROMIC contribute to a dense appearance with the turf grasses, providing increased drought tolerance, improved turf quality and reduced weed invasion and reduced water requirements. NITROGREEN is the perfect mixture for high traffic areas such as sports facilities, public areas or domestic lawns.

NITROGREEN is the mixture of choice for an environmentally friendly approach to a great lawn in your neighbourhood.

Reclamation & Native Species

DSV Northstar is proud to offer a full line of high quality native cool and warm season grass species, legumes, and wetland grasses across Western Canada.

We provide native blends for all types of projects; from reclamation sites and wetland habitats to major infrastructure projects and national parks.

Our team of sales agronomists work closely with contractors, engineers and conservation districts to meet the specification requirements for purity and germination for projects, large or small.

Available Native Species			
Alpine bluegrass	Creeping foxtail	Little bluestem	Sandberg bluegrass
American vetch	Fowl bluegrass	Mountain brome	Sheeps fescue
Awned wheatgrass	Fringed brome	Needle & thread grass	Side oats grama
Baltic rush	Fults alkaligrass	Nodding bromes	Slender wheatgrass
Beaked sedge	Green needlegrass	Northern wheatgrass	Slough grass
Big bluestem	Hairy vetch	Prairie cordgrass	Smooth wildrye
Blue grama	Hairy wildrye	Prairie sandreed	Streambank wheatgrass
Bluebunch wheatgrass	Idaho fescue	Pubescent wheatgrass	Switchgrass
Bluejoint reedgrass	Indian grass	Purple prairie clover	Tall mannagrass
Canada bluegrass	Indian ricegrass	Red top	Ticklegrass
Canada wildrye	Inland saltgrass	Rocky mountain fescue	Tufted hairgrass
Canadian milkvetch	Junegrass	Rough fescue	Violet wheatgrass
Common sedge	Lewis blue flax	Sand dropseed	Western wheatgrass

Other species may become available

Annual Cover Crop Program

DSV Northstar has been involved in cover crops for over a decade, and have developed our product lineup to meet the demand of this diverse and growing market.

We can provide various cover crop blends for double cropping under irrigation, summer/fall grazing, stored forage, nitrogen fixation, and soil health improvements. We have also recommended annual legumes as a part of intercropping with cereal grain production.

Please contact your DSV Northstar sales agronomist or DSV Northstar dealer, and let us assist you in your perennial and annual forage planning.

Available annual cover crop species and varieties:

- Berseem Clover
- Crimson Clover
- Collards
- Ladino Clover
- GROUNDHOG BRAND Radish
- VIVANT Hybrid Forage Brassica
- GORILLA Forage Rape
- Kale
- Purple Top Turnips
- APPIN Turnips
- Sugar Beets
- Hairy Vetch
- Chicory
- Austrian Winter Peas
- LIVIOLETTA Field Peas
- Persian Clover
- Serradella
- Faba Beans
- Plantain
- BEEHAPPY Phacelia
- Buckwheat
- Sunflowers
- NS BRAND Sorghum Sudangrass
- NS DRYSTALK BRAND BMR Sorghum Sudangrass
- Golden German Millet
- Japanese Millet
- Proso Millet
- FALLADINO Annual Ryegrass
- ELUNARIA Annual Ryegrass
- DOLOMIT Italian Ryegrass

Annual Forage Selection

The use of annual forages as cover crops continues to grow with a strong focus on improving soil health. The integration of livestock into a cover cropping system assists in the efficiency of the nutrient cycling ecosystem.

As we explore the benefits of Regenerative Agriculture, the use of cover cropping with annual forages combined with the use of perennial forages are key to improving soil health. The focus of Regenerative Agriculture is to increase biodiversity, improve the water cycle, and strengthen the health and vitality of the soil. This means protecting the soil with armour, and keeping root activity alive for an extended period.

Cool Season				Warm Season	
GRASS	BROADLEAF				GRASS
			LEGUMES		
Barley					Pearl Millet
Oats			Ladino Clover	Soybeans	Japanese Millet
Ryegrass	Phacelia	Turnip	Forage Peas	Chickpeas	Golden German Millet
Wheat	Kale	Radish	Berseem Clover	Buckwheat	Proso Millet
Cereal Rye	Canola	Beets	Sweet Clover	Sunflowers	Sorghum Sudangrass
Triticale	Mustard	Forage Brassica	Hairy Vetch	Chicory	Corn

The use of annual forages in your rotational program allows you to increase biodiversity within your cropping systems. The overall goal is to increase soil carbon through vegetative growth with moisture being the caveat.

Producers use many different prescriptions to achieve biodiversity and their ability to affect soil health on their operation. Regenerative Agriculture is most often unique to an individual operation requiring site specific recommendations.

Improving soil health will require using the Five basic principles of Regenerative Agriculture:

- Create soil armor by keeping the soil covered, with no bare ground.
- Minimize soil disturbance by utilizing reduced/no till practices on cropland and adaptive grazing strategies on grazing lands.
- Increase plant diversity; rotate crops and include warm and cool-season grasses and forbs in pastures.
- Keep living roots in the ground all year.
- Integrate livestock grazing.

Cover Crop Blends

Planting cover crops is becoming a common and very rewarding farming practice across the prairies. There's no silver bullet when it comes to cover cropping. At DSV Northstar we offer tailored solutions and custom blending capabilities for your desired outcome.

D.C. GRAZER MAX

A fall grazing/double-crop blend with premium varieties.
This mix of high feed value, rapid growth brassicas featuring a low glucosinate forage rape, and Italian Ryegrass brings phenomenal fall grazing without breaking the bank.

60 %	DOLOMIT Italian Ryegrass
20 %	VIVANT Hybrid Forage Brassica
20 %	GORILLA Forage Rape
Seeding rate 10 – 12 lb/ac*	

SOIL HEALTH MAX

Multi species blend to improve soil quality.
All the beneficial soil improvement characteristics: deep roots to capture nutrients, penetrate hardpan and improve soil tilth, N fixing, as well as hosting a beneficial nematode environment.

35 %	Berseem Clover
25 %	Purple Top Turnip
25 %	GROUNDHOG BRAND Radish
15 %	BEEHAPPY Phacelia
Seeding rate 8 – 10 lb/ac*	

SWATH GRAZE MAX

Most popular cover crop blend.
Superior mix of leafy forages, legume and grass, providing high feed value and maximum rate of gain for cattle. Great companion with cereals for swath grazing. Cut for silage or graze in summer and graze regrowth in the fall.

60 %	Japanese Millet
20 %	Berseem Clover
10 %	GORILLA Forage Rape
10 %	APPIN Forage Turnip
Seeding rate 10 – 12 lb/ac*	

MAX BUZZ

Pollinator species.
This pollinator blend will provide season long flowering for beneficial pollinators, and will look beautiful too!

34 %	Crimson Clover
33 %	BEEHAPPY Phacelia
33 %	Berseem Clover
Seeding rate 8 – 10 lb/ac*	

* seeding rates reflect no companion crop

Successful Forage Establishment

Careful planning and attention to detail are essential to ensure successful forage establishment. A successful forage stand depends on the selection of species and cultivars that are adapted to your environment and for the intended use of the forage. Your decision to plant a forage should be made with consideration of the following:

Weed Control: Consider the herbicides used in the last couple of years to ensure there are no herbicide residue issues as some products may inhibit or reduce seedling survival. Plan for a weed control program on the forages that you are seeding to control and reduce weed competition.

Seedbed Preparation: The seedbed should be firm and weed-free prior to seeding. It is important to achieve close seed to soil contact to allow for accurate seed placement which means a firm, solid seedbed. Walking or driving across a seedbed should only leave a faint imprint. A clean stubble field makes for a perfect environment.

Seeding Date: Spring seeding is ideal when soil temperatures have reached 8 to 10°C and moisture levels are good for ideal germination to occur. Moisture deficiency is often a cause of poor stand establishment, so seeding with anticipated precipitation in the spring is most successful. If you choose to dormant seed, plant when the soil temperature is below 2°C to prevent germination until the following spring.

Seeding Rate and Equipment: Seeding rates should be determined based on a combination of factors such as: the end use requirement, the predicted survival rate of the seedlings, moisture conditions, and most importantly the seeds per square foot in the field rather than percent by weight. Contact your DSV Northstar Seed sales agronomist for the ideal seeds per square foot for the various soil zones.

Producers have used various equipment to successfully seed and establish forages. What is most important is the ability to control the seeding depth and accurately meter small amounts of seed and avoid bridging when using chaffy seeds. Having an agitator in the seed box or mixing in an inert carrier or phosphate fertilizer with a ratio of 1 to 3 by weight will eliminate bridging and result in good seed flow.

Using equipment such as double disc drills, hoe drills, or air seeders and drills provide for excellent seed to soil contact, the exception may be the use of a broadcast applicator. With a broadcast applicator, it is recommended that you increase seeding rate by 20 % to adjust for seed that remains on the top of the ground following incorporation after seeding. Broadcast seedings are more reliant on rainfall for germination than any other seeding method.

Companion Crop Management: If you choose to use a companion crop, **seed the companion crop at 20 to 40 % of normal rate** to reduce competition in your forage establishment. If possible, seed at right angles to reduce in–row competition with your forages, and under ideal conditions, harvest as a silage crop. The goal is to reduce the length of time the swath lays on the ground. Remember to use recommended herbicides to control weed growth and reduce competition. Avoid using a competitive crop such as barley or wheat and look to crops like flax, millet or oats as a companion crop.

Select the Correct Species: When selecting your forage species, plan for the length of time the stand will be in production. Longevity and the yield of your forage stand starts with choosing the correct species adapted to your soil and field conditions. Select a quality seed that has a high level of germination and has an excellent seed purity with modern genetics for high production levels.

Purchasing low value seed may compromise yield and quality, and persistence of the stand due to lack of disease resistance and winterhardiness. Cost of the seed input in forage production accounts for less than 5%, so selection of the best species for your operation is critical to the success of your stands.

Seeding Depth: Seed your forages shallow with the maximum seeding depth on clay type soils at ¼ to ½ inch deep with some seed evident on top of the ground. If you are seeding into loam or sandy-type soil, depth may increase to a maximum of ¾ inch, keeping the importance of a firm seedbed in mind.

Fertility: Plan for a fertility program when seeding legumes and grasses. You may wish to bank your Phosphorus requirements for a period of 3 to 4 years as we understand that Phosphorus is not very mobile with annual applications.

Soil testing prior to seeding and fertilizing to the required nutrient levels is recommended.

Spike and Panicle emergence determines cutting time and forage quality

How do I choose the perfect cutting time for my forage grass and what influences it? With unique expertise in forage quality DSV has in-depth knowledge how grassland management can be optimized and what influence spike and panicle emergence has.

Dairy farms are familiar with the spike and panicle emergence of forage grasses during vegetation: the flower sprouts from the stem of the plant at the end of the growth phase. If cutting is delayed until this time, the lignin content of the plant increases. At the same time, the digestibility of the organic matter decreases and the proportion of cell contents also decreases the longer you wait to cut. However, the time of cutting should not be chosen too early either, because this results in yield losses since the optimum yield has not yet been reached. Especially for silage management, this raises the question of when is the "perfect" cutting time, or does it exist at all?

Generative and vegetative phase

Grass growth can be divided into two phases during the year. In spring, grass grows very fast, as the plants aim to sprout and push heads and panicles during this time. This is the generative phase. On average, more than 50% of the total annual yield is achieved during this period. However, especially towards the end of the generative phase, the ratio of cell content and cell walls shifts steadily. The proportion of cell walls increases, causing the proportion of cell contents to decrease. This in turn leads to a lower forage quality of the growth.

The generative phase is followed by the vegetative phase with a lower growth increase. In this phase, it should be noted that the grass can no longer shoot, as the growth cone, the so-called apex, was removed in the generative phase by the timely cutting. In the vegetative phase, particular care must be taken not to cut too deeply, as the grasses grow back more slowly in this phase. Only after the plants have received a cold stimulus (vernalization) over a sufficient period of time does the generative phase begin again with rising temperatures. From this moment on, the grass plant grows faster and can shoot again. This means that only when the generative phase begins again, new culms are formed and spike and panicle emergence can occur again.

The growth cone (apex): Important for the timing of cutting

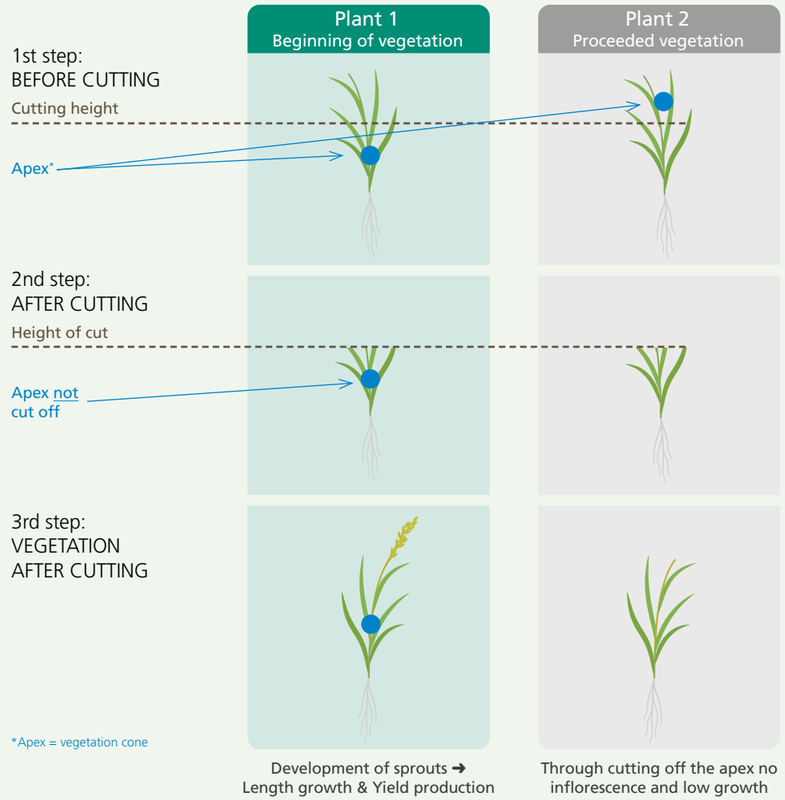
In practice, the aim is to find the cutting time at which the ingredients are optimal for the feed quality and at the same time as much yield as possible can be harvested. Therefore, the following applies to every grass cut: do not cut too early, but also not too late!

An important criterion for deciding when to cut is the "apex". This is the vegetation cone of each plant, which sits in the tip of a shoot and comprises the apical meristem, a group of divisible cells. From there, the plant grows and forms new leaves. Among other things, hormones are produced in the apex that prevent the growth of side shoots. If the shoot tip and thus the apex is removed by a cut, the stem no longer grows further in length. Instead, side shoots sprout from the leaf nodes further down (plant 2, stage 3). Here the nutrients are stored more safely and no lignification takes place.

Influence of the apex on forage quality

The first cut shortly before spike and panicle emergence is optimal for silage, then the apex is still low and will not be damaged during cutting (plant 1). In addition, yield and forage quality are at a high level at this time. The grass plant can grow again in length and produce yield due to the still existing vegetation cone. In the course of further growth during vegetation, however, this cone grows upwards. The more suitable the first cutting time is, i.e. close to the beginning of spike emergence, the easier it is to choose subsequent cuts. In order to fulfil this condition, the following recommendation applies: There should be **at least 4 weeks** between the grass cuts to ensure a sufficient yield and an optimal conversion and utilization of nitrogen into protein.

Graphical comparison between plant 1, where the apex is not cut off vs. plant 2, where the apex is removed through the cut



Practical tip:
The aim is to mow above the apex of the grass at the first cut so that the grass can still shoot at the second cut and benefit from the high mass growth of the generative phase.

In practice, a balance must always be struck between the longest possible use of the plants with generative growth and the unavoidable shooting of the plants.

Conclusion

There is no clear-cut statement as to when is the right time to cut. For orientation, it is important to wait for the beginning of spike and shoot emergence in order to achieve an optimum yield and forage quality of the silage. If you wait too long with the first cut, the forage quality will decrease and the vegetative phase of the emergence will start too early. The aim should be to leave the growth in the generative phase until the 2nd cut and to "harvest" the apex with the 2nd cut. Then the crop enters the vegetative phase and it becomes easier to find the optimal time for cutting, as the plants no longer shoot.

Summary

Too early 1st cut:	Too late 1st cut:
– Lower yield (not yet profitable to mow)	+ High yield
+ High digestibility of organic matter	– Lower digestibility of organic matter
+ High protein content	– Less protein
+ Grass wants to shoot further, as apex is not "topped" –> Fast regrowth	– Grass already shot

Optimal:
Carry out the 1st cut one month before spike emergence – then keep a four-week interval between cuts. In this way, you can benefit from the high growth rate of the generative phase even longer before the vegetative phase follows.

Seed Production Opportunities

DSV Northstar contracts with producers across Western Canada for most of the forage and turf species that we sell. Seed produced across the prairies is not only sold locally but also exported around the world.

Seed Production of forage and turf species in your rotation can have many advantages. While dependant on crop kind many are perennial crops that need to be seeded once but can have multiple harvest years

Harvest is also earlier than many traditional crops which can ease harvest time pressure. Looking for more feed? Straw from many of the species can be baled and fed with post harvest regrowth providing a second cut or fall grazing. A big advantage of forage and turf species is adding a profitable crop to your rotation. Currently there is strong demand for these crop kinds with excellent competitive pricing.

DSV Northstar is actively looking for producers to work with

Our production advisors are highly knowledgeable and will be able to assist you every step of the way. Your success is our success. If you are interested in finding out about grower opportunities please contact our office to be put in touch with your area's production advisor for more information.

Alfalfa production field

Tall Fescue production field

Our Dealers – Local Forage Experts

Who are DSV Northstar Dealers?

They are people from your community who are passionate about the forage and turf industry, and customer service. They are your local seed retailers based on-farm, independent farm supply companies with multiple sites, feed dealers, auction marts, landscape suppliers and many others!

What are the benefits to you?

DSV Northstar sales agronomists work with the dealer to combine information on cutting edge varieties and agricultural practices used across Western Canada, with knowledge of your local climate and soil conditions. Many of our dealers are also producers who have experience growing the varieties we offer.

Want to start a conversation?

Simply work with your local dealer – they can engage their DSV Northstar agronomist to help answer your questions and provide innovative ideas. Forage is our passion, and we would love to help improve your production.

New Dealer Opportunities

DSV Northstar is continuing to expand its presence in Manitoba, Saskatchewan, Alberta and B.C. If you have a passion for forage, turf or native seed, speak to one of our sales agronomists about the possibility of becoming a dealer.

Call us today for more information: 1-800-430-5955
Email: info@dsv-northstar.com

Manitoba Agricultural Services Corporation

Forage Establishment Insurance

Purpose

- Forage Establishment Insurance (FEI) provides financial assistance to Manitoba farmers if an eligible forage crop fails to establish.

Eligibility

FEI must have the seed incorporated by mechanical means. If an FEI crop is planted more than three days after a cover crop, MASC may inspect to verify the cover crop is not excessively damaged.

- Eligible forage crops include **spring or fall plantings** in any combination of **alfalfa**, **clover**, **sainfoin**, **perennial ryegrass**, and **other perennial grasses** (excluding native grasses).
- All acres of new plantings of eligible forage establishment crops must be insured if FEI is selected for coverage.
- Spring plantings must be seeded by **June 25**.
- Spring seeded perennial ryegrass must be seeded with a companion crop to be eligible for FEI.
- Fall plantings of perennial grasses (excluding perennial ryegrass seed), alfalfa, sainfoin, and clover must be seeded on or after **July 25** but not later than **August 15**.
- Fall plantings of perennial ryegrass seed must be seeded on or after **August 10** but not later than **September 5**.
- Fall seeded perennial ryegrass, alfalfa, sainfoin, and clover must be planted without a companion crop to be eligible for FEI.
- Birds-foot trefoil, native grasses, and annual ryegrass are not eligible

For all other information regarding Forage Establishment Insurance please visit our webpage: www.masc.mb.ca

SCIC
SASKATCHEWAN CROP INSURANCE CORPORATION

Forage Establishment Benefit Option

The **Forage Establishment Benefit Option** is available to protect newly seeded forage acres intended for hay, grazing or seed production against the risk of an establishment failure. It is a stand-alone option, not linked to yield-loss insurance. This option must be selected if you want establishment coverage on acres seeded to forage. Forages grown for seed can be insured for establishment insurance through this option. Specific establishment criteria may apply.

For more information regarding SCIC Forage Establishment Insurance as well as other programs please visit our web page: www.scic.ca

SCAN ME

For additional information or to place an order please contact:

DSV Northstar Ltd.

Manitoba/Eastern Saskatchewan
Box 2220
Highway 16 East
Neepawa, Manitoba
R0J 1H0
Ph: 204-476-5241
Fax: 204-476-3773
Toll Free: 1-800-430-5955

Alberta, Western Saskatchewan and B.C.
64053 393 Ave. E
Okotoks, Alberta
T1S 0L1
Ph: 587-757-8981
Fax: 587-757-8986
Toll Free: 1-800-805-0765

Manitoba Sales

Nyle Pennell CCA, T.AG.
Sales Agronomist
SW MB/Southern Saskatchewan
Cell:1-204-841-0802
Nyle.Pennell@dsv-northstar.com

Rhonda Chestnut P.AG
Sales Agronomist
NE MB/Northern Saskatchewan
Cell: 1-204-721-2160
Rhonda.Chestnut@dsv-northstar.com

Alberta Sales

Brian Palichuk P.AG.
Sales Agronomist
Southern Alberta, Saskatchewan and B.C.
Cell: 1-403-878-7003
Brian.Palichuk@dsv-northstar.com

Dan Branden
Sales Representative
Northern Alberta and Saskatchewan
Cell :1-403-998-1917
Dan.Branden@dsv-northstar.com

Saskatchewan Sales

Neil McLeod
Sales Representative
Saskatchewan
Cell: 1-306-831-9401
Neil.McLeod@dsv-northstar.com

DSV
Innovation for your growth

Follow us:

www.dsv-northstar.com