

# 2020 Seed Guide



Next generation forage seed

Canadian owned.  Canadian grown.



Northstar Seed has a reputation as a supplier of high quality forage seed in Canada. Our years of experience and focus on forage seed allow us to provide expert advice on how to maximize production on your land.

Our sales agronomists and dealers understand local growing conditions and challenges and are able to make custom recommendations for optimal production on your farm operation.

Fast turnaround on custom blends, even when they are ordered in season. We pride ourselves on getting your seed to you promptly, when you need it.

We are an independent forage seed company, founded in 1982



# Advanced Alfalfa Technology

***Northstar Seed brings you the latest technology in alfalfa genetics***

## **PERFECTION Alfalfa**

### ***Maximize Yield and Quality***

Perfection alfalfa is bred with StandFast™ technology. This trait provides rapid re-growth after cutting and can yield up to 3-4 cuts of hay in a season. This rapid growth trait provides higher tonnage and is ideally suited for silage production.

## **REVOLUTION Alfalfa**

### ***Lower Fiber = Higher RFQ***

Revolution MD's Max Digest technology provides increased forage digestibility and high RFQ (Relative Forage Quality). Revolution has large leaves and a high leaf to stem ratio that reduces the fiber content in the forage. It is this leafy trait that provides higher protein content and increased forage digestibility.

***This is next generation forage seed.***



Revolution MD alfalfa, direct seeded in April, 2019 in Quesnel, BC showing regrowth 15 days after cutting.

# Alfalfa Selection Guide

	Fall Dormancy	Winter Hardiness	Root Type	Key Features
<b>Revolution MD</b> Maximum Digestibility	3.7	1.7	Tap	Exceptional forage quality <ul style="list-style-type: none"> <li>• High RFQ (Relative Forage Quality) rating and rate of digestion</li> <li>• Large leaf area with an increased leaf to stem ratio</li> <li>• Outstanding disease and pest resistance package</li> <li>• Excellent winter hardiness combined with high yield</li> </ul>
<b>Perfection</b> Rapid Growth	4	2	Tap	The latest advancement in StandFast Technology <ul style="list-style-type: none"> <li>• Selected for high forage DM and NDF levels</li> <li>• High multifoliate expression and fast recovery</li> <li>• Well suited for silage production &amp; dairy producers</li> </ul>
<b>Robust</b> High Yield, Low Dormancy	2	1.5	Tap	High performance synthetic variety <ul style="list-style-type: none"> <li>• Multifoliate with high leaf to stem ratio</li> <li>• High forage dry matter yield and RFV</li> <li>• Vigorous roots</li> <li>• Dense crowns</li> </ul>
<b>TH2 Alfalfa</b> Top Performer	4	2.5	Tap	A top performing alfalfa that is well suited for the majority of alfalfa growers in Western Canada <ul style="list-style-type: none"> <li>• High multi-leaf expression</li> <li>• Rapid regrowth</li> <li>• Superior disease resistance</li> </ul>
<b>Rugged ST</b> Salt Tolerant	3	2	Tap	A very hardy variety <ul style="list-style-type: none"> <li>• Large, broad, deep-set crowns</li> <li>• Tolerance to increased salt levels</li> </ul>

## ENHANCED Alfalfa Blend 10-5

It is hard to improve upon our best selling alfalfa blend, but we did. New to the 10-5 blend are Robust multifoliate synthetic hybrid for outstanding performance, and Sidewinder creeping rooted variety with superior winter hardiness and yields similar to tap root alfalfa.

Alfalfa 10-5 is our premium certified alfalfa blend, combining the very best package of traits from our alfalfa lineup. This is a balanced certified blend of tap root, branch root, sunken crown and creeping root varieties that will perform in variable field conditions.

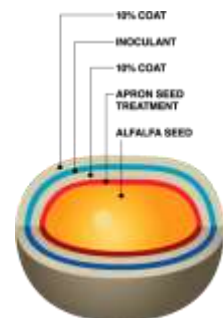
This blend provides an even plant population across fields with variable conditions such as high moisture, salinity and drought.



	Fall Dormancy	Winter Hardiness	Root Type	Key Features
<b>Sidewinder</b> Creeping Root	2	1.6	Creeping	<p>Selected for high forage yield with excellent winter hardiness and persistence</p> <ul style="list-style-type: none"> <li>• Later maturity to flower which adds value to a grass blend</li> <li>• Deep set crown with wheel traffic tolerance</li> <li>• Excellent disease resistance package</li> <li>• Multipurpose variety for forage hay or pasture</li> </ul>
<b>Response WT</b> Wet Tolerant	4	2	Branching	<p>Performs well on medium to heavy soils. A high yielding variety that should be considered in areas of high water table.</p> <ul style="list-style-type: none"> <li>• Excellent forage quality</li> <li>• High yielding branch rooted variety</li> <li>• Adjusts its root growth based on level of moisture stress</li> </ul>
<b>AAC Meadowview</b> Acid Tolerant	2	Not Rated	Branching tap	<p>Acid tolerant variety ideally suited for the foothills of AB and Peace region of AB and BC</p> <ul style="list-style-type: none"> <li>• Deep set crowns</li> <li>• Erect spring growth habit</li> <li>• Rapid regrowth after cutting</li> </ul>
<b>Haygrazer</b> Grazing Tolerant	4	2	Fibrous	<p>A flexible variety that is bred for high hay yields as well as grazing tolerance</p> <ul style="list-style-type: none"> <li>• Aggressive fibrous root system</li> <li>• Sunken crown stands up to grazing pressure and high traffic from equipment</li> <li>• Tolerant to defoliation by the Alfalfa Weevil</li> </ul>
<b>Alfalfa Blend 10-5</b> <b>ENHANCED</b> Adapted to Variable Conditions	Mix of 2-4	Mix of 1.5-2	Creeping, tap, branch and fibrous	<p>Premium certified blend of five varieties with unique traits that enhance plant population across variable field conditions</p> <ul style="list-style-type: none"> <li>• Now contains Robust and Sidewinder alfalfas, as well as Response, Rugged, and Haygrazer alfalfa.</li> </ul>
<b>Ranchers Choice Brand</b> Common #1 Blend	n/a	n/a	Combined creeping and tap	<p>Consistent performing alfalfa blend</p> <ul style="list-style-type: none"> <li>• Blend of multifoliate, tri-foliate and creeping root varieties that is a consistent performer.</li> </ul>

### Layers of protection with our STRATUM™ coating process

Our alfalfa coating process involves layers of protection between the inoculant and Apron® seed treatment. Separating the seed treatment with a 10% coating, then adding the inoculant, and a final 10% coating, will assist with improving germination and reducing seedling diseases.



# Forage Grass Selection Guide

	Hay	Pasture	Saline Tolerance	Flood Tolerance	Drought Tolerance	Key Features
NEW AAC Maximus Meadow Bromegrass	★	★			★	<ul style="list-style-type: none"> <li>Taller than Fleet Meadow Bromegrass</li> <li>More upright growth habit than Fleet</li> </ul>
Carlton Smooth Bromegrass	★	★	★	★	★	<ul style="list-style-type: none"> <li>Widely adaptable</li> <li>Sod forming</li> <li>Moderate saline, moisture and drought tolerance</li> </ul>
AC Knowles Hybrid Bromegrass	★	★	★	★	★	<ul style="list-style-type: none"> <li>Smooth and meadow bromegrass hybrid</li> <li>Yields like smooth brome with a longer growing season similar to meadow brome</li> <li>Improved leaf expression compared to smooth brome</li> </ul>
Early Arctic Orchardgrass	★	★	★	★		<ul style="list-style-type: none"> <li>Exceptional orchardgrass that demonstrates above average winterhardiness</li> <li>Excellent companion when blended with alfalfa</li> <li>Moderate drought and flooding tolerance</li> <li>Selected for high quality (leafy)</li> </ul>
Elunaria Annual Ryegrass	★	★		★		<ul style="list-style-type: none"> <li>Westerwold type</li> <li>Suitable for hay, haylage or pasture</li> <li>High yield opportunity</li> <li>Very good quality with broad leaves</li> </ul>
Nabucco Italian Ryegrass	★	★		★		<ul style="list-style-type: none"> <li>Tetraploid variety that delivers improved quality over annual ryegrass.</li> <li>Quick regrowth</li> <li>Wider and more succulent leaves than diploid annual ryegrass</li> <li>Excellent palatability/digestibility</li> </ul>
NEW Tetrasweet Perennial Ryegrass	★	★		★		<ul style="list-style-type: none"> <li>Tetraploid variety</li> <li>Highly digestible</li> <li>High energy</li> <li>Excellent regrowth and high yield</li> </ul>
Toronto Perennial Ryegrass	★	★				<ul style="list-style-type: none"> <li>For short term pasture with excellent yield and digestibility</li> <li>Very high levels of sugar</li> </ul>



	Hay	Pasture	Saline Tolerance	Flood Tolerance	Drought Tolerance	Key Features
Preval Meadow Fescue		★		★		<ul style="list-style-type: none"> <li>• Tolerates wet soils</li> <li>• Withstands close grazing, excellent for rotational grazing</li> <li>• Use in hay and pasture blends</li> </ul>
Courtney Tall Fescue	★	★	★	★	★	<ul style="list-style-type: none"> <li>• Good flood and saline tolerance</li> <li>• Large basal leaves, high quality</li> <li>• Exceptional yield potential</li> </ul>
Boreal Creeping Red Fescue		★		★		<ul style="list-style-type: none"> <li>• Great performance in pastures under high moisture conditions</li> <li>• Tolerates close grazing</li> <li>• Good quality in fall to freeze up</li> </ul>
Express Timothy	★	★		★		<ul style="list-style-type: none"> <li>• Excellent winter survivability</li> <li>• Medium maturity</li> <li>• Very good regrowth</li> <li>• Great leafy variety for domestic hay production</li> </ul>
Novio Timothy	★	★		★		<ul style="list-style-type: none"> <li>• Export quality with medium maturity</li> <li>• Large soft leaves</li> <li>• Extremely winterhardy</li> </ul>
Kirk Crested Wheatgrass	★	★			★	<ul style="list-style-type: none"> <li>• Fibrous root system provides good drought tolerance and winterhardiness</li> <li>• Excellent early spring pasture grass</li> <li>• Great fit for high traffic areas</li> </ul>
Greenleaf Pubescent Wheatgrass	★	★			★	<ul style="list-style-type: none"> <li>• Suited for dryland production</li> <li>• Very good drought tolerance</li> <li>• Good winterhardiness</li> </ul>

**Northstar Seed carries a complete line of certified and common grasses. See pages 10-11 for a more detailed list of species available.**

# Max Seed Blends



## Hay

### Premium Hay Max

A very hardy mixture that includes Express 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% Fleet Meadow Bromegrass
- 5% Express Timothy

### Maxi

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

- 90% Alfalfa Blend 10-5
- 10% Express Timothy

### Rancher's Hay Max

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

- 50% Rancher's Choice Brand Alfalfa
- 30% Fleet Meadow Bromegrass
- 20% Carlton Smooth Bromegrass

### Saline Hay Max

Suited for productive soils that are demonstrating early signs of salt stress. Has tolerance to increased salinity levels.

- 40% Courtenay Tall Fescue
- 40% Rugged ST Alfalfa
- 20% Carlton Smooth Bromegrass

### Lowland Max

Ideally used for hay or pasture in areas with poor drainage. Has tolerance to increased moisture conditions.

- 50% Courtenay Tall Fescue
- 30% Marathon Reed Canary Grass
- 20% Express Timothy



# Dual Purpose: Hay or Pasture

## Dual Max

High quality grasses that have very good regrowth habits. This blend is suited to most grazing or haying systems. Prefers medium to heavy soils.

- 50% Fleet Meadow Bromegrass
- 25% Carlton Smooth Bromegrass
- 20% High Arctic Brand Orchardgrass
- 5% Alfalfa Blend 10-5

## 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% Fleet Meadow Bromegrass
- 15% Kirk Crested Wheatgrass
- 15% Pubescent Wheatgrass
- 5% Runner Alfalfa

## Western Grass Max

High quality all grass blend. If properly managed can be a very productive hay and pasture blend. No concerns with bloat.

- 45% Fleet Meadow Bromegrass
- 25% High Arctic Brand Orchardgrass
- 15% Courtenay Tall Fescue
- 10% Express Timothy
- 5% Creeping Red Fescue

## Bloat Free Max

Utilizes non-bloating legumes AAC Mountainview sainfoin and Cicer Milkvetch combined with highly palatable grasses.

- 40% Fleet Meadow Bromegrass
- 25% AAC Mountainview Sainfoin
- 25% Cicer Milkvetch
- 10% Courtenay Tall Fescue

## Saline Pasture Max

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

- 30% Courtney Tall Fescue
- 30% Carlton Smooth Bromegrass
- 20% Slender Wheatgrass
- 20% Dahurian Wildrye



# Forage Adaptation Guide

## Legumes

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

*\*Seeds/lb. may vary*



### AAC Maximus Meadow Bromegrass

Developed by renowned plant breeder Bruce Coulman out of Ag Canada's Saskatoon Research and Development Centre, Northstar Seed is pleased to provide exclusive access to AAC Maximus Meadow Bromegrass.

The goal in the breeding of AAC Maximus was to provide a new variety with improved yield over Fleet Meadow Bromegrass. After 32 site years of testing side by side with Fleet across 11 locations in Western Canada, AAC Maximus had an average yield of 103%. Research has also shown that AAC Maximus has the potential for higher yields over Fleet in certain soil zones.

AAC Maximus was selected from multiple breeding lines of Fleet, as well as selections from Paddock and Regar. It has shown to be similar or slightly taller than Fleet, with a more upright growth habit, and is an excellent option for hay and pasture.



# Forage Grasses

Forage	Use	Longevity	Winter hardiness	Root	Seeds/lb.*	Growing Period
<b>Altai Wild Ryegrass</b>	Pasture	Long	Excellent	Bunch grass	60,000	Early Spring-Mid Summer
<b>Annual Ryegrass (Italian)</b>	Hay/Pasture	Annual	Poor	Bunch grass	230,000	Spring-Fall
<b>Creeping Foxtail</b>	Pasture	Long	Good	Sod forming	750,000	Early Spring-Fall
<b>Creeping Red Fescue</b>	Pasture/Lawn	Long	Excellent	Sod forming	615,000	Spring-Fall
<b>Crested Wheatgrass</b>	Pasture/Hay	Long	Excellent	Bunch grass	175,000	Early Spring
<b>Dahurian Wheatgrass</b>	Pasture	Short	Good	Bunch grass	80,000	Spring-Fall
<b>Intermediate Wheatgrass</b>	Hay/Pasture	Short/Medium	Good	Sod forming	88,000	Late Spring-Mid Summer
<b>Kentucky Bluegrass</b>	Pasture/Lawn	Long	Excellent	Sod forming	2,180,000	Spring-Fall
<b>Meadow Bromegrass</b>	Hay/Pasture	Long	Good	Bunch grass	80,000	Early Spring-Late Summer
<b>Meadow Fescue</b>	Pasture	Short/Medium	Good	Bunch grass	230,000	Early Spring-Late Fall
<b>Meadow Foxtail</b>	Pasture	Long	Good	Bunch grass	575,000	Early Spring-Fall
<b>Orchardgrass</b>	Hay/Pasture	Short	Fair	Bunch grass	650,000	Spring-Fall
<b>Perennial Ryegrass</b>	Hay/Pasture	Short 2-3 yrs.	Poor	Bunch grass	330,000	Spring-Fall
<b>Pubescent Wheatgrass</b>	Hay/Pasture	Medium	Good	Sod forming	100,000	Early Spring-Mid Summer
<b>Russian Wild Ryegrass</b>	Pasture	Long	Excellent	Bunch grass	175,000	Early Spring-Mid Summer
<b>Smooth Bromegrass</b>	Hay/Pasture	Long	Excellent	Sod forming	136,000	Mid Spring-Mid Summer
<b>Tall Fescue</b>	Pasture	Medium	Good	Bunch grass	225,000	Late Spring-Fall
<b>Tall Wheatgrass</b>	Hay/Pasture	Long	Excellent	Bunch grass	79,000	Late Spring-Mid Summer
<b>Timothy</b>	Hay/Pasture	Medium	Good	Bunch grass	1,230,000	Spring-Summer
<b>Western Wheatgrass</b>	Hay/Pasture	Long	Excellent	Sod forming	110,000	Late spring - Summer

# Lawn Seed Blends

Eco-Grow lawn seed is an environmental friendly choice for low maintenance grass areas where moisture or irrigation is limited. Eco Grow is our number one selling grass blend for small acreage areas or for securing ground cover for livestock habitat.

## **Eco-Grow**

A blend of premium fescues that is lower maintenance, with lower moisture requirements as well as reduces the frequency of mowing your lawn.

- 25% Sheep's Fescue
- 25% Hard Fescue
- 20% Gibraltar Creeping Red Fescue
- 15% Boreal Creeping Red Fescue
- 15% Chewings Fescue



**Call for more information on premium turf and lawn mixes such as Dryland Lawn, Rough and Ready or Playground mixes. Custom lawn and turf blends can also be made for your specific conditions.**



### **Instagreen**

A very good general use blend where a rapid catch is desired.

- 40% Kentucky Bluegrass
- 40% Creeping Red Fescue
- 20% Annual Ryegrass

### **Deluxe Blend**

Our best blend containing the highest percentage of Kentucky Bluegrass. Ideally suited to those areas with full sun when a rich, vibrant green turf is desired.

- 70% Kentucky Bluegrass
- 20% Creeping Red Fescue
- 10% Perennial Ryegrass

### **Sun & Shade**

A premium blend that is ideally suited to sunny areas and will tolerate partial shade.

- 50% Kentucky Bluegrass
- 30% Creeping Red Fescue
- 20% Perennial Ryegrass

### **Playground Blend**

This is a tough, easy to manage blend that will last for years.

- 30% Creeping Red Fescue
- 30% Hard Fescue
- 20% Sheep`s Fescue
- 10% Corsair Kentucky Bluegrass
- 10% Turf Type Perennial Ryegrass



**Northstar Seed sells environmentally friendly, untreated lawn seed that is safe for the whole family. Our uncoated seed means more live seeds per pound and higher seeds per square foot based on the same seeding rate compared to coated seed.**

# Reclamation & Native Species

Northstar Seed 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

<b>Awned Wheatgrass</b>	<b>Fringed Brome</b>	<b>Nodding Brome</b>	<b>Spike Trisetum</b>
<b>Alpine Bluegrass</b>	<b>Fults Alkaligrass</b>	<b>Prairie Cordgrass</b>	<b>Streambank Wheatgrass</b>
<b>Beaked Sedge</b>	<b>Green Needlegrass</b>	<b>Prairie Sandreed</b>	<b>Tall Mannagrass</b>
<b>Baltic Rush</b>	<b>Hairy Wildrye</b>	<b>Red Top</b>	<b>Ticklegrass</b>
<b>Big Bluestem</b>	<b>Idaho Fescue</b>	<b>Rocky Mountain Fescue</b>	<b>Tufted Hairgrass</b>
<b>Blue Grama</b>	<b>Indian Grass</b>	<b>Rough Fescue</b>	<b>Violet Wheatgrass</b>
<b>Bluebunch Wheatgrass</b>	<b>Indian Ricegrass</b>	<b>Sand Dropseed</b>	<b>Western Porcupine</b>
<b>Bluejoint Reedgrass</b>	<b>Inland Saltgrass</b>	<b>Sandberg Bluegrass</b>	<b>Western Wheatgrass</b>
<b>Canada Bluegrass</b>	<b>Junegrass</b>	<b>Side Oats Grama</b>	<b>American Vetch</b>
<b>Canada Wildrye</b>	<b>Little Bluestem</b>	<b>Sheeps Fescue</b>	<b>Canadian Milkvetch</b>
<b>Common Sedge</b>	<b>Mountain Brome</b>	<b>Slender Wheatgrass</b>	<b>Hairy Vetch</b>
<b>Fowl Bluegrass</b>	<b>Needle and Thread</b>	<b>Slough Grass</b>	<b>Lewis Blue Flax</b>
	<b>Northern Wheatgrass</b>	<b>Smooth Wildrye</b>	<b>Purple Prairie Clover</b>

# Fertility Management for Productive Forage Stands

Nutrient deficiency in soil is an important factor that limits forage productivity in Western Canada. Often forages are seeded on marginal land that limits yield success from low soil nutrient levels after 3-5 years. Forages remove more nutrients from the soil than many other crops due to the large amount of biomass that is harvested yearly.

Management systems will affect the long term nutrient status of forage fields. A fertility program is usually implemented when seeding a tame forage or legume in the year of establishment. The concern is the replenishment of the soil nutrients that are being extracted from the soil profile over time to sustain the desired yield. Hay production removes a large amount of nutrients from the soil profile and there is a requirement to replace those nutrients each year to maintain the yield response.

**Table 2: Nutrients Removed in Hay Production (in lbs./acre)**

NUTRIENT	2.5 TONS/ACRE ALFALFA	1.5 TONS/ACRE GRASS
<b>Nitrogen (N)</b>	145 lb/acre	51 lb/acre
<b>Phosphorus (P<sub>2</sub>O<sub>5</sub>)</b>	35	15
<b>Potassium (K<sub>2</sub>O)</b>	150	65
<b>Sulphur (S)</b>	15	6

Multiply lbs. /acre by 1.121 to convert to kg/ha

Source: Nutrient uptake and removal by field crops (Fertilizer Canada)

Livestock grazing removes fewer nutrients than a physical haying operation as the biomass is not removed from the land under a grazing scenario. The majority of the Nitrogen, Phosphorus, Potassium and Sulphur that are consumed by the livestock are excreted as urine and feces and the nutrient cycle continues.

The goal of a fertility program is to decrease the per unit cost of production and optimize sustainable biomass production. It is important to soil test yearly to determine the nutrient status of the forage stand and to plan for the production requirements.

Take the time to visit with your Northstar Seed sales agronomist regarding forage production planning and visit with your fertilizer dealer to evaluate your soil nutrient profile. Employ the correct fertility program to your operation to improve the bottom line and remain a sustainable forage producer.

# Annual & Cover Crop Program

Northstar Seed has been involved in cover crops for more than eight years, 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 used annual legumes as a part of intercropping with cereal grain production.

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

## Available annual and cover crop species and varieties:

- Berseem Clover
- Crimson Clover
- Collards
- Jumbo Ladino Clover
- Driller brand Radish
- Vivant Hybrid Forage Brassica
- Gorilla Forage Brassica
- Kale
- Purple Top Turnips
- Appin Turnips
- Hairy Vetch
- Chicory
- Austrian Winter Peas
- Forage Peas
- Plantain
- Beehappy Phacelia
- NS Drystalk brand BMR Sorghum Sudangrass
- Golden German Millet
- Japanese Millet
- Proso Millet
- Jungle Italian Ryegrass
- Nabucco Italian Ryegrass
- Elunaria Annual Ryegrass



C4 warm season grass trial in Neepawa, MB.

# Annual Forage Selection

The interest in using 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	
Barley			LEGUMES		Pearl Millet	
Oats			Jumbo Ladino Clover			Japanese Millet
Ryegrass	Phacelia	Turnip	Forage peas			Golden German Millet
Wheat	Kale	Radish	Berseem Clover		Buckwheat	Proso Millet
Cereal Rye	Canola	Beets	Sweet Clover	Soybeans	Sunflowers	Sorghum Sudangrass
Triticale	Mustard	Forage Brassica	Hairy Vetch	Chickpeas	Chicory	Corn

At Northstar Seed, we evaluate our cover crop offering every year based on customer field results and continue to build custom blends that are suited to individual requirements.

As we increase the utilization of cover crops for forage use, we need to be cognizant of metabolic disorders that may occur with grazing livestock. Plan your cover crop selection to ensure that your program will not result in any toxicities or maladies associated with livestock grazing.

Take the time to consult with your Northstar Seed Sales Agronomist, or Northstar Seed Dealer for advice on cover crop planning.



# 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 no herbicide residue 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 8-10 degrees 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 degrees C to prevent germination until the following spring.

**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 cheap seed may compromise yield and quality, and persistence of the stand due to lack of disease resistance and winter hardiness. 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 Rate and Equipment:** 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.

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 Northstar Seed sales agronomist for the ideal seeds per square foot for the various soil zones.



**Seeding Depth:** Seed your forages shallow with the maximum seeding depth on clay type soils at  $\frac{1}{4}$  to  $\frac{1}{2}$  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  $\frac{3}{4}$  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 3-4 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.



**Companion Crop Management:** If you choose to use a companion crop, seed the companion crop at 30-40% 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.



Legend Seeds is our corn variety partner, and together we offer silage, grain and dual purpose corn hybrid options to meet the challenging growing conditions across Western Canada.

## Selecting your corn varieties

When planning your corn acres, here are some important factors to consider:

- Select corn hybrids based on the optimal CHU for your area.
- Other important considerations are drought tolerance, disease and insect pressure, and your corn rotation.
- For silage use, growers can choose to grow silage hybrids with relative corn maturities 5-10 days longer than normal grain hybrids
- For larger acres of corn, select two or three different maturity hybrids in order to manage risk and spread out your harvest timing.
- Use the recommended plant population as the seeding rate for each hybrid (normally between 28K to 34K)

Your Northstar Seed Sales Agronomist can help you plan your corn acres. There is a wide range of Legend Seed corn hybrid options to meet your production needs.

Refer to the Legend Seeds 2020 Product Guide, or [www.legendseeds.ca](http://www.legendseeds.ca) for the complete lineup of corn hybrids available.



***Ask us about Yield More Financing on your corn purchases, available now!***

# Northstar Seed Quality Standards

Our seed quality standard is less than 10 total weed seeds/25 grams for all the varieties we sell. This standard exceeds the requirements for Certified #1 seed that has a tolerance of 50 weed seeds per 25 grams

Consider that the total allowable weed seeds for Common #1 seed allows 75 weed seeds/25 grams. That would equate to 1,363 weed seeds/pound. On an average 12 lb/ac seeding rate, that equates to 16,363 weed seeds/acre.

Knowing that we take our seed quality standards very seriously, ensures that the product in every bag of seed we sell is of the utmost quality.



## Independent Seed Quality Testing

Seed health and purity are the building blocks for good establishments and clean fields.

At Northstar Seed every lot of seed that is put in our bag has been analyzed by a fully independent and accredited seed lab. That means a third-party technician verifies the germination and purity of each lot of seed before a federally certified seed grader assigns a grade and determines if that lot meets our quality standards. No in-house testing and no shortcuts.



# Grow with us

Northstar Seed is known in the global forage and turf seed industry as a supplier of pure, clean, high quality seed. We are proud to export forage and turf seed, produced in Western Canada, around the world. Currently, Northstar Seed ships to countries within Europe, East Asia, Latin America, the United States, Africa and the Middle East.

As a forage or turf seed producer, you are an integral part in helping increase Canadian exports and developing our ability to be a primary source of quality seed production.

Northstar Seed is looking for leading-edge farmers to **Grow with Us**. If you are interested in finding out about grower opportunities, please contact one of our local production agronomists.

**Gerry Duynisveld**  
(204) 476-0644

**Brett Wilson**  
(204) 476-6828

**Darrel Theroux**  
(204) 212-0991





## OUR DEALERS - LOCAL FORAGE EXPERTS

### Who are Northstar Seed 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?

Northstar Seed's sales agronomists work with your local retailer 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 Northstar Seed agronomist to help answer your questions and provide innovative ideas. Forage is our passion, and we would love to help improve your production.

To find out who your nearest Northstar Seed dealer is, call us toll free at 1-800-430-5955.

## NEW DEALER OPPORTUNITIES

Northstar Seed 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@northstarseed.com](mailto:info@northstarseed.com)



**For additional information or to place an order please contact:**

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