





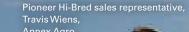






### **DuPont Pioneer**

#300 - 510 Cope Way, Saskatoon, SK S7T 0G3 1-800-265-9435



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**B** PIONEER

Not all Pioneer® brand products are included in this guide.

See your Pioneer Hi-Bred sales representative for information on all our products or go to www.pioneer.com

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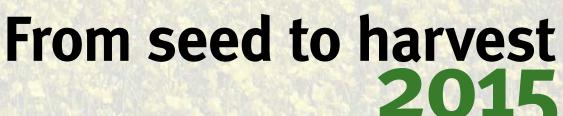
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Pioneer® brand products and services

# **DuPont Pioneer**

# **Welcome to the DuPont Pioneer Seed to Harvest Guide for 2015**



Today, growers in Western Canada continue to redefine what's possible in crop production. They're increasing yields, diversifying rotations and using resources and inputs more sustainably than ever.

At DuPont Pioneer, we're proud to work closely with growers as they pursue this globally important mission. As worldwide demand for food, feed, fuel and biomaterials increases, so do opportunities for agriculture in Western Canada. Here are some of the ways DuPont Pioneer is helping our customers today, and building for tomorrow.

**Research.** Western Canada will continue to be an area of focus and excitement for DuPont Pioneer. We believe that corn will become a regular part of many growers' crop rotations in the future. Across the Prairies, we are expanding our research programs to focus on early-maturity corn and new trait technology in canola.

**People.** We're adding expertise and depth to our research teams, and putting more people in the field to listen to and advise growers. One example of this commitment is the successful DuPont Pioneer Corn School series of recent years. We believe our agronomic know-how, local expertise and personal commitment to your success are key reasons why growers choose DuPont Pioneer.

**Products and traits.** As our research achieves results, we'll continue to expand the number and type of products we can offer growers. In 2014, we launched new canola hybrids with Pioneer Protector® sclerotinia and clubroot traits, added new herbicide resistance traits and continued to achieve earlier maturities for corn and soybeans.

Looking to 2015 and beyond, we continue to innovate and deliver the agronomic performance growers are looking for. You'll find a detailed description of all our new 2015 seed products inside this guide.

Over the next few years, we will launch LibertyLink® herbicide tolerance in elite DuPont Pioneer genetics and introduce Pioneer® brand Optimum GLY, a novel glyphosate-resistant trait in canola. These advances will mean more flexibility in how growers manage crop production.

On behalf of everyone at DuPont Pioneer in Western Canada, thank you for your business. We will continue to work hard to earn your trust. Best wishes for a safe and successful season.

Greg Stokke

Business Director, Western Canada Commercial Unit DuPont Pioneer



The **PROVING GROUND** 

### **LEADERS. TRAILBLAZERS. INNOVATORS. PART 1.**

Western Canada was a different place nearly 80 years ago and farming was a very different business. Early settlers believed that Western Canada could be a nice place to make a living, so they dug in and went to work. DuPont Pioneer did the same thing, growing and selling seed to farmers to help them prosper.



### The Proving Ground™



### Where research meets reality

### **Better seed in so many weighs**

The Proving Ground™ is our unique, large-scale trialing effort. In 2013 over 1,500 large-scale trials of canola, corn and soybeans were planted across Western Canada. The number of trials we plant is currently more than any other seed company and continues to grow every year. The large amount of data we collect from these trials helps our Pioneer Hi-Bred sales team confidently position the right Pioneer® brand seed product on every acre you grow.

### Large-scale trials for large-scale farming

Farming is large-scale so why shouldn't our trials also be to scale. All Proving Ground™ trials for commercial products are conducted under real world conditions with a grower's own management practices. This way, they provide data that is local and more relevant to growers in their own area.

### Successful crops take more than great genetics

It takes a whole package of information and advice to maximize yield potential for crops. The Proving Ground™ trials aim to provide more information and resources to make growers more successful. That's why we not only test products, we also thoroughly test traits, seed treatments and agronomic practices. The Proving Ground™ trials help us to better understand and validate the true value of proprietary traits so we can better position products with our customers. By testing different agronomic practices – both new and old – it helps us learn more about the factors that impact yield.

### Where research meets reality.

The Proving Ground™ trials encompass our complete testing program – from research through testing both products and agronomic practices that make a difference on the grower's operation. They truly are where research meets reality.

# R&I

### Research and Development

- Products are tested in small plots for five years before they are put into the Proving Ground<sup>TM</sup> Trial system
- We're expanding our R&D program to include more testing, more locations, more data poin and more traits

# AGRONOMY

### Agronomy Research Efforts

- Testing different agronomic practices new and old to help us learn more about the factors that impact yield
- Testing of new proprietary traits and treatments to help us understand the true value to farmers of the trait and how it can best help their operation
- Providing growers with access to unbiased, scientificallybased agronomic information

### PAT/ IMPACT™PLOT

Product Advancement Trials / Intensively Managed Product Advancement, Characterization and Training Trials

- Field-scale program that generates yield performance data to make product advancement decisions
- Replicated trials conducted under a wide range of environments and management practices

### SXS Side-by-Sides

- Field-scale demonstration of commercial products that are managed with farm-scale equipment
- Customers can "test-drive" DuPont Pioneer genetics against other products on their farm
- Allows "system comparisons" to measure overall performance of hybrid and weed control

# PKP

### **Product Knowledge Plot**

- Allow farmers to be the first to test and trial new products
- Test new commercial products under many environmental and management conditions
- Gain experience with new products before wide-scale launch



The best field management: yours. The finest seed genetics: ours. How high can your canola, corn or soybean yields go? We want to find out and reward the highest yielders.

The Proving Ground™ 2014 Yield Challenge is a great opportunity to learn about maximizing yields, try new production techniques, share ideas and have some fun. Who's in?

The contest is open to any Manitoba, Saskatchewan, Alberta or British Columbia grower who purchased Pioneer® brand canola or corn seed through a local Pioneer Hi-Bred sales representative. Use the management practices of your choice to produce the highest-yielding crop you can, then see how you stack up with the best in the West.

We'll be giving out all kinds of regional and local prizes for the highest canola, corn or soybean yields within a given area. Western Canada's overall top yielder under The Proving Ground<sup>TM</sup> 2014 Yield Challenge will win the Grand Prize.

Grand Prize: A trip for two to attend the final Curling weekend of the 2015 Tim Hortons Brier in Calgary, Alberta.



PIONEER

CANOLA



FIONEER

TIONEEL:

### **Summary of Contest Rules**

- Pioneer® brand seed must be purchased through a Pioneer Hi-Bred sales representative.
- Contest field must be designated via communication to your local Pioneer Hi-Bred sales representative by August 30, 2014.
- Irrigation of the designated field is not allowed.
- Only one field per farm operation may be entered.
- The highest recorded yield submitted to Pioneer Hi-Bred as of October 31, 2014 for canola and soybeans and as of November 14th, 2014 for corn will be deemed the winner (subject to weather conditions at harvest).
- Yield of the contest field must be measured by a Pioneer Hi-Bred weigh wagon.
- Yield monitors are not accepted.

Look for more details at our summer tours showcasing The Proving Ground™ trials.

For complete contest information and rules, visit www.pioneer.com/pgyc



### LEADERS. TRAILBLAZERS. INNOVATORS. PART 2.

Later generations of prairie farm families increased their production and their prosperity. Through these years, DuPont Pioneer expanded research and production globally and created a network of farmer seed representatives who give timely, informed seed advice to their neighbours. Our experts are grown locally.





# Canola

# CANOLA SEED

### Feature Products:

### 43E02

- Very early maturity hybrid
- Above average early growth
- Rated moderately resistant for blackleg

### 45H29 PROTECTOR



- Leader hybrid
- Very good standability and harvestability
- Built-in Pioneer Protector® Clubroot resistance trait (races 2, 3, 5, 6 & 8)
- Resistant to blackleg

### 45H31 Ready

- Outstanding yield potential
- Superior standability and harvestability
- Resistant to blackleg

### 45S52 PROTECTOR





- Top performing hybrid
- Built-in Pioneer Protector® Sclerotinia resistance trait
- Excellent early growth
- Very good standability

5

Rated moderately resistant for blackleg

### 45S54 PROTECTOR



- High-yielding canola hybrid with the built-in Pioneer Protector® Sclerotinia resistance trait
- Resistant to blackleg
- Very good standability

### **B** PIONEER. 45H29 PROTECTOR

### **Canola Numbering System** Example: 45H29

- 4 Canola
- Relative Maturity of the canola
- H\* Canola Hvbrid\*
- 2 5 \*\* Number represents Roundup Ready® tolerant canola
  - 9 Denotes random number of seed product

### 46S53 PROTECTOR



- High performing canola hybrid with the built-in Pioneer Protector® Sclerotinia resistance trait
- Offers an improved level of sclerotinia resistance and standability over Pioneer® brand canola hybrid 45S51 (RR)
- Strong disease package with resistance to blackleg and Fusarium wilt

### 46H75



Herbicide for Clearfield® canola Excellent early growth

- Outstanding standability and harvestability Resistant to blackleg
- Clearfield® production system provides exceptional weed control with Ares™ herbicide

### **New Canola Products**

45H33 PROTECTOR



- Excellent yield potential
- Built-In Pioneer Protector® Clubroot resistance trait (races 2,3,5,6 & 8)
- Excellent early growth
- Resistant to blackleg and Fusarium wilt

### 45S56 PROTECTOR





- New, high-yielding hybrid with built-in Pioneer Protector® Sclerotinia resistance trait
- Very good standability
- Moderately resistant to blackleg
- Resistant to Fusarium wilt

### 45H76



- New Clearfield® hybrid for 2015
- Mid 5 maturity hybrid
- Very good standability
- Resistant to blackleg and Fusarium wilt
- Clearfield® production system provides exceptional weed control with Ares™ herbicide

### 43E03 Regarding



- Above average early growth
- Moderately resistant to blackleg
- Low green seed count

### Characteristics

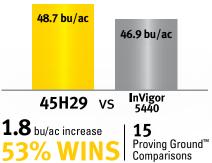
* N	<b>M3</b> Pioneer® Brand Product	Maturity <sup>1</sup>	Herbicide Tolerant Trait <sup>2</sup>	Blackleg <sup>3</sup>	Blackleg <sup>4</sup>	Sclerotinia <sup>5</sup>	Clubroot <sup>6</sup>	Clubroot 7	Fusarium Wilt®	Early Growth $^{9}$	Green Seed Content <sup>10</sup>	Standability "	Plant Height 12	Oil Content <sup>13</sup>
	Product					Char	acter	istic R	atings					
	43E02	3	Records	MR	6	1			R	6	9	5	5	7
	43E03*	3	Resendant Records	MR	6	1			R	7	9	5	6	7
	45H29	5	PROTECTOR	R	8	1	R	8	R	8	8	7	8	7
	45H31	5	Regardap Records:	R	7	1			R	8	8	8	7	7
	45H33*	5	PROTECTOR	R	7	1	R	8	R	8	8	7	8	7
	45H76*	5		R	8	1			R	8	8	7	8	7
	<b>45S51</b>	5	PROTECTOR	R	7	5			R	6	8	6	6	7
	45\$52	5	PROTECTOR	MR	6	6			R	8	8	7	7	7
	45\$54	5	PROTECTOR	R	7	6			R	8	8	7	7	7
	<b>45S56*</b>	5	PROTECTOR	MR	6	6			R	8	8	7	7	7
	46H75	6		R	7	1			R	8	8	8	8	8
	46\$53	6	PROTECTOR	R	8	6			R	7	8	8	8	9

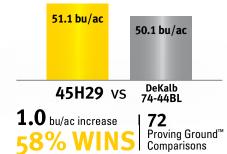
### **Industry-leading canola yields**

45H29



Pioneer® hybrid 45H29 is for canola growers who want consistently high yields combined with the built-in Pioneer Protector® Clubroot Resistance trait for protection against clubroot.

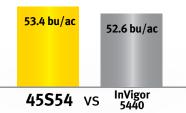




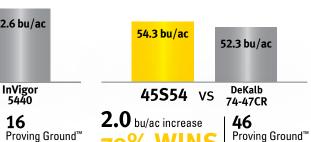
**45**\$54



A leading sclerotinia-resistant canola hybrid, Pioneer® hybrid 45S54 is for growers that want the ultimate in disease protection, yield and standability.



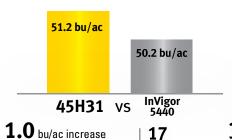




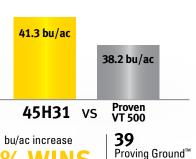
45H31



Pioneer® hybrid 45H31 canola for growers that want a proven leader in yield and standability.







Comparisons

Comparisons

Canola yield data summary averaged across 2 years (2012-2013). Yield data collected from large-scale, grower managed Proving Ground™ trials across Western Canada as of November 12th, 2013. Product responses are variable and subject to any number of

Comparisons

### **DuPont Pioneer Industry Partners**

### **JumpStart® increases the** availability of soil and fertilizer JumpStart® phosphate for improved growth



Enhanced phosphate availability results in increased root growth and increased leaf surface area. Canola that is inoculated with JumpStart® will typically flower earlier, have an increased number of pods and pod-bearing branches, and have earlier, more uniform maturity. Ultimately, it can help your canola crop reach its full potential and achieve higher yields.

### **JumpStart®** in canola provides:

- Better phosphate efficiency
- Better root development
- Improved stress tolerance
- · Earlier, more uniform maturity
- Improved seed quality
- Increased yields

Saskatchewan

Photo courtesy of DuPont Pioneer. Pioneer® hybrid 45H29 canola from a Proving Ground™ trial in Northern

JumpStart® is available on the following Pioneer® brand canola hybrids: 43E02, 45H29, 45H31, 45H73, 45S52, 45S54, 46H75 and 46S53.

### Helix® Vibrance® seed treatment W Helix® Vibrance®



Add the ultimate pest control of Helix XTra® to the Rooting Power™ of Vibrance® and you have a seed treatment that helps canola unleash its full potential. Helix® Vibrance® both protects and triggers canola's genetic capacity, producing more vigorous emergence and healthier root systems. The result: enhanced crop establishment and higher yields.

- The Rooting Power<sup>™</sup> of Vibrance<sup>®</sup> delivers stronger roots that take full advantage of soil nutrients and can better defend against soil diseases
- · Four fungicides and one powerful insecticide deliver industry-leading, broad-spectrum pest control
- Quick-acting, long-lasting protection with proven seed safety
- Earlier flowering and pod set
- Consistent performance under a wide range of growing conditions
- Combined systemic movement with ideal soil mobility

Helix® Vibrance® is available on all Pioneer® brand canola hybrids.

Always read and follow label directions. Helix® Vibrance®, Helix XTra®, Rooting Power™ and Vibrance® are trademarks of a Syngenta Group Company. © 2014 Syngenta.





Save big on select DuPont crop protection products when you buy Pioneer® brand seed, DuPont™ Vertisan® fungicide or DuPont™ Acapela® fungicide.

DuPont™ FarmCare® Connect

### There's no need to enrol for FarmCare® Connect in 2014.

- FarmCare® Connect combines the power of both DuPont crop protection and Pioneer® brand seed to maximize value and return for our customers.
- Members can save on DuPont brands such as Express®, Barricade® II, PrecisionPac® and Assure® II.
- To qualify, purchase 140 acres or more of Pioneer® brand canola, corn, soybean or sunflower seed.
- Complete program details are available at FarmCare.ca/Connect or contact any DuPont Crop Protection or Pioneer Hi-Bred sales representative.

For more information please visit FarmCare.ca/Connect or call 1-800-667-3925.

### **DuPont Pioneer Industry Partners**

# Introducing NEW DuPont™ Lumiderm™ insecticide seed treatment.

- First ever seed applied product that controls cutworm
- New class of chemistry (Group 28) for resistance management
- Improved consistency of flea beetle control
- Residual control up to 35 days of protection through the critical stages of seedling growth
- Excellent early season stand establishment and vigour

# DuPont<sup>™</sup> Lumiderm<sup>™</sup> insecticide seed treatment

### See the Lumiderm<sup>™</sup> difference in Cutworm control.

Cutworms are a growing problem in Western Canada canola production. Cutworms typically feed at night and go underground during the day. This makes them difficult to scout and tricky to control with an in-crop insecticide application. If you are not paying close attention, cutworms can take out a significant portion of a crop in just a few days.

That's why Lumiderm™ is such an important advancement for canola production. During the critical first 35 days of seedling growth, Lumiderm™ protects your canola from cutworm feeding, enhancing early-season stand establishment and maintaining strong crop vigour.

### What agronomists are saying about the Lumiderm<sup>™</sup> difference.

"Around here, the issue is flea beetles, a growing concern for us. Based on 11 side-by-side 10-acre plots, we saw signs of reduced feeding damage, higher plant stands and greater plant vigour in the Lumiderm™ treated plants. I've only seen one year of Lumiderm™ here, but so far we wouldn't have to overspray. We like the idea of longer-lasting flea beetle control."

Barry Friesen, Agrologist, Delta Ag Services, Portage la Prairie, MB

Visit **lumidermvideo.dupont.ca** to see Lumiderm<sup>™</sup> in action.

### See the Lumiderm<sup>™</sup> difference in Flea Beetle control.

There are few threats more significant to Canada's multi-billion-dollar canola industry than flea beetles. Every year, these voracious insects consume between 8-10% of canola yields prairie-wide. Growers are fed up with flea beetles and want a better way to control them.

That's where Lumiderm™ comes in. In extensive field trials comparing Lumiderm™ treated seedling with a standard seed treatment, the difference was clear.

Seedlings treated with the conventional product show visible stress due to flea beetle feeding. Seedlings treated with Lumiderm™ are healthier and more vigorous during this critical growth period, getting your crop off to a strong start.



DuPont™ Lumiderm™ treated seed

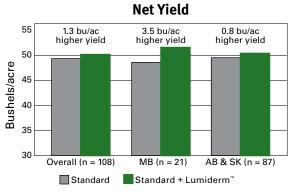


Standard Treatment

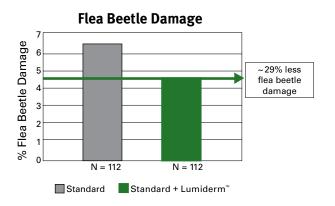


DuPont™ Lumiderm™ treated seed

Standard Treatment



Note: Many areas of Manitoba had very heavy, prolonged crucifer & striped flea beetle pressure in 2013.



<u>11</u>

### **DuPont Pioneer Industry Partners**

# NEW! DuPont™ Acapela® fungicide is now approved for use on canola for sclerotinia control.

### DuPont™ Acapela®

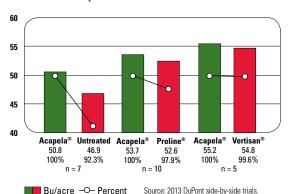
- Acapela® has one-of-a-kind movement properties that help provide superior coverage to deliver reliable disease control under a variety of conditions
- Rapid uptake, excellent xylem systemic movement and redistribution over the leaf surface
- Acapela<sup>®</sup> is an innovative new tool for the management of white mould, a devastating disease of canola, pulse crops, soybeans and edible beans
- Acapela® provides control of a broad-spectrum of important foliar diseases including leaf rust, powdery mildew, septoria leaf blotch, tan spot, Asian soybean rust and sclerotinia
- Acapela® helps to deliver healthier crops and higher yield potential

Crops: Cereals, corn, pulse crops, canola and soybeansChemical Group: Group 11 (strobilurin fungicide)Crop Rotation: Any crop the following year

### **Canola**

Sclerotinia can reduce yield by up to 50%, so you need a fungicide you can rely on. Acapela® provides more complete coverage because it is rapidly absorbed and moves quickly into and within each plant. Acapela® is best applied at the 20–50% bloom stage.

### **DuPont™ Acapela® Field Performance – Canola**



- Grower Run Field Scale trials show excellent results
- Registration received in December, 2013
- Improved harvestability, standability and plant health
- Excellent track record in other crops and countries for white mould (Sclerotinia) control

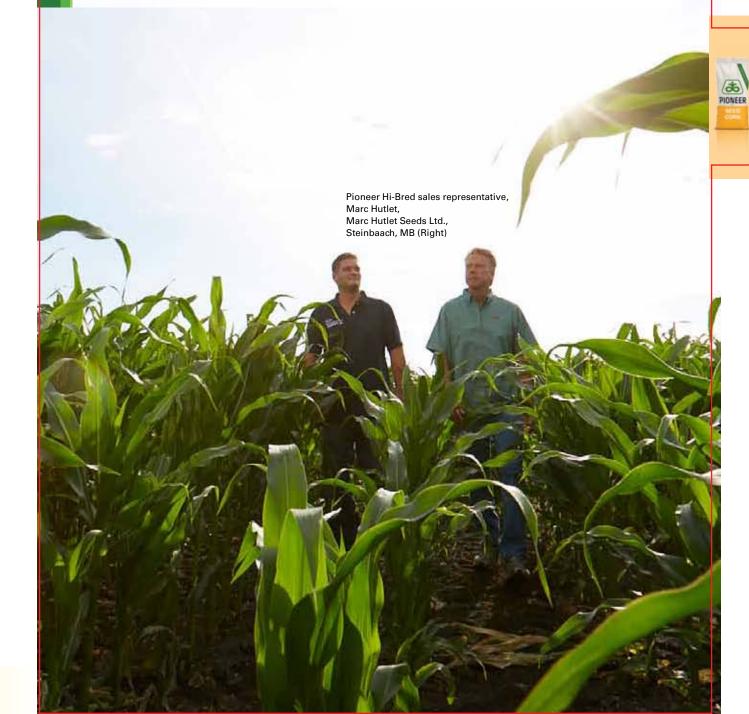
### **Pulse Crops and Soybeans**

In pulse crops (peas, lentils, chickpeas and dry beans) and soybeans, Acapela® is an exceptional solution for control of mycosphaerella pinodes (peas), mycosphaerella blight and Asian soybean rust and for suppression of sclerotinia rot or white mould. Growers know that white mould can devastate a soybean crop's yield potential. With Acapela®, you now have a unique new production tool to manage this serious disease while striving for higher yields.



### **LEADERS. TRAILBLAZERS. INNOVATORS. PART 3.**

Prairie farmers are taking agriculture in bold new directions, producing more yield and higher quality on far less land than farmers could 80 years ago. Similarly, DuPont Pioneer is breaking new ground in plant genetics, in technology and in the agronomic advice of the Pioneer Hi-Bred sales representatives who live alongside their customers. Our experts are grown locally.



# Grain Corn





### 2050 heat units

- Very early hybrid
- Balanced agronomic package
- Very good root strength
- Very good grain drydown
- Excellent choice for grain corn

P7443R Regardery (South P

### 2100 heat units

- Excellent yield potential
- Very good drought tolerance
- Excellent grain hybrid for Western Canada

39D95 Records



#### 2175 heat units

- Top performing hybrid for Manitoba grain market
- Broad area of adaptation

39Z69 W LIBERTY NOW!



#### 2225 heat units

- Very good root strength
- Good tolerance to Goss's wilt

39D97 WINK W RINK W





#### 2250 heat units

- Leader hybrid for maturity
- Maintains stable yields across all environments

39V05



### 2250 heat units

- Late-flowering hybrid
- Above average root strength
- Very good drought tolerance

39V07 WHENTY PROPERTY AND SHAPE TO SHAPE THE PROPERTY OF THE P







#### 2300 heat units

- Late-flowering platform
- Above average root strength
- Very good drought tolerance
- Outstanding silage characteristics

**P8193**AM™



### 2400 heat units

- Optimum<sup>®</sup> AcreMax<sup>™</sup> product delivering integrated refuge for above-ground insect control
- Corn product with good root and stalk strength
- Solid agronomic package

### P8210HR W LIBERTY LIBERTY LIBERTY









### 2475 heat units

- New hybrid with above average root and stalk strength
- Above average tolerance to Goss's wilt

### P8651HR W LIBERTY PAGE LIBERTY

2550 heat units







### Above average stalk strength

- Taller plant
- Above average for tolerance to Goss's wilt
- New hybrid with good root and stalk strength
- Solid agronomic package



### **Corn Numbering System** Example: P7213R

- Denotes a Pioneer® brand product
- **72** RM = Relative maturity identifier
- 13 Random number 01-99
- **R** Segment Identifier: R equals Roundup Ready® gene, HR – Herculex® I above-ground insect control with Roundup Ready® gene and LibertyLink® trait, AM™ – Denotes Optimum® AcreMax<sup>™</sup> technology delivering integrated refuge for above-ground insect control

### **New Corn Products**

P7332R Regarding Regarding



CORN

- Excellent root strength
- Good drought tolerance
- Excellent husk cover
- Average grain drydown



- New early Corn hybrid with HX1/LL
- Good stalk strength
- Very good root strength
- Excellent drought tolerance

P7632HR 😇 LINE 3



- Good drought tolerance
- Above average stalks and root strength
- Good husk cover

P7632AM™ ACTEMAX €



- Optimum® AcreMax™ product delivering integrated refuge for above-ground insect control
- Good drought tolerance
- Excellent root strength
- Good husk cover

**P7958**AM™



- Optimum<sup>®</sup> AcreMax<sup>™</sup> product delivering integrated refuge for above-ground insect control
- Good drought tolerance and excellent root strength
- Moderate Goss's wilt tolerance
- Average grain drydown

### **Grain Corn Characteristics\***



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· N	M9 Pioneer® Brand Product***	Technology Segment '	Heat Units	CRM 2	SikCRM	Physiological CRM <sup>3</sup>	GDUs to Silk	GDUs to Physiological Maturity <sup>4</sup>	Grain Drydown <sup>5</sup>	Stalk Strength	RootStrength	Stress Emergence <sup>6</sup>	Staygreen	Drought Tolerance?	High Residue Suitability®	Ear Flex <sup>9</sup>	TestWeight 10	Plant Height "	Ear Height 12	Mid-Season Brittle Stalk 13	Goss's Wilt	HuskCover	Amide™	Benzoic Acid and Phenoxy 15	Isoxazole 16	SU 17
	Product					Ch	arac	cteris	stic :	Rati	ngs												H M:	erbicide anageme	- Hybrid ent Guid	ł e
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	P7213 <sub>R</sub>		2050	72	75	74	950	1730	3	4	7	6	3	5		6	7	3	4	6	3	3	•	•	•	•
	P7332R*		2050	73	74	76	950	1790	5	5	8	5		6			5	3	4	5	4	8				
	39M26		2100	76	74	74	940	1730	6	4	6	6	3	5	S	5	7	5	4	6	3	6	•	•	•	•
	P7410HR*	UBERTY LINK &	2100	74	77	77	970	1810	PAA	PAA	PAA	PBA	PBA	PAA			PAA	PBA	PBA	PBA	PBA	PBA				
	P7443 <sub>R</sub>	A STATE OF THE PARTY OF THE PAR	2100	74	77	77	970	1810	7	3	6	4	3	7		6	5	5	5	7	4	4	•		•	
	39D95		2175	79	80	78	1010	1840	6	6	3	5	5	6	S	7	5	4	6	4	3	4	•	•	•	•
	39B90	Agents.	2200	79	82	79	1030	1860	6	6	6	4	6	6	х	7	7	6	6	4	4	3	•		•	•
	Р7632нг	LIBERTY LINK &	2200	76	77	81	970	1910	5	5	8	5		6			5	3	4	5	4	8				
	Р7632ам≈*	Acceding To Link & See	2225	76	77	81	970	1910	5	5	8	5		6			5	3	4	5	4	8				
	39D97	LINK W	2250	79	80	78	1010	1840	6	6	3	5	5	6	S	7	5	4	6	4	3	4	•	•	•	•
	39F60		2250	78	80	78	1010	1840	6	5	7	5	5	7	s	6	6	6	7	6		3	•	•	•	•
	39V05	Asset .	2250	80	84	85	1060	2020	6	4	6	5	4	7	S	6	5	5	6	6	6	7	•		•	•
	39Z69	LIBERTY LINK &	2225	77	80	78	1010	1840	7	4	7	5	4	7	S	6	6	4	5	4	6	3	•	•	•	•
	P7958 <sub>AM**</sub> *	AcreMax UNK D ACREMY	2275	79	84	83	1060	1960	PA	PAA	PAA	PA	PAA	PAA			PAA	PA	PA	PBA	PA	PBA				
	39V07	LIBERTY LINK W	2300	80	84	85	1060	2020	6	4	6	5	4	7	S	6	5	5	6	6	6	7	•		•	•
	Р8193ам™	AcreMax W LINK W &	2400	81	82	83	1030	1960	4	4	5	5	7	7		4	4	5	5	6	4	5	•		•	•
	P8210 *		2425	82	80	81	1010	1910	4	7	6	5	5	7		6	4	4	5	6	3	4	•	•	•	•
	P8210R	Agents,	2425	82	80	81	1010	1910	4	7	6	5	5	7		6	4	4	5	6	3	4	•	•	•	•
	P8210HR	UBERTY LINK W	2475	82	80	81	1010	1910	4	7	6	5	5	7		6	4	4	5	6	3	4	•	•	•	•
	P8651HR	LIBERTY LINK &	2550	86	85	85	1070	2020	4	8	3	5	6	7		4	6	7	5	3	6	4	•	•	•	•
	P8673 <sub>AM*</sub> *	AcreMax UNE HOERTY LINK W	2550	86	86	84	1080	1990	7	5	8	5	4	7			5	6	7	6	4	7				
	P8581R		2575	85	88	87	1100	2070	7	8	7	5	5	7	S	7	5	7	7	5	7	4	•	•	•	•
	P8622AM**	AcreMax UBERTY A GO	2600	86	86	86	1080	2040	6	6	6	5	7	7	s	5	4	7	7	5	4	4				
	P8622HR	LIBERTY LINK W	2600	86	86	86	1080	2040	6	6	6	5	7	7	S	5	4	7	7	5	4	4	•		•	•
	P8622r *		2600	86	86	86	1080	2040	6	6	6	5	7	7	s	5	4	7	7	5	4	4				
	Р8906ам™	Acrobia: UBERTY LINE W	2650	89	89	89	1120	2120	5	6	8	6	7	7	s	8	5	8	6	5	4	5	•	•	•	•
	P9188 <sub>AM</sub> **	AcreMax UBERTY LINK &	2650	91	89	91	1120	2170	PBA	PAA	PAA	PBA	PBA	PAA			PAA	PBA	PBA	PA	PA	PAA				
	Р9681ам: *	AcreMax UBBERTY A CONTROL OF CONT	2850	96	95	90	1190	2140	PAA	PAA	PAA	PA	PAA	PAA			PA	PBA	РВА	PAA	PAA	РВА				
	P9754 <sub>AM**</sub> *	AcreMax W LINK W	2850	97	99	98	1240	2350	6	6	6	5	6	8			5	6	8	3	6	3				
	Р9789амхт-*	Accedia LINE & Agrisure RW	2900	97	99	96	1220	2300	PA	PA	PAA	PAA		PAA			РВА	PAA	PA	PAA	PAA	PAA				

### **Corn Yield Data**



### **Industry-leading corn yields**

P7213R

2050 heat units

Very early grain corn hybrid with very good root strength and grain drydown for areas in Western Canada with low heat unit requirements.

105.6 bu/ac 84.9 bu/ac

P7213<sub>R</sub> VS 39F44

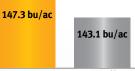
20.8 bu/ac increase 100% WINS | Proving Ground Comparisons

Proving Ground™

P7443R

#### 2100 heat units

Excellent grain hybrid with outstanding yield potential. Very good drought tolerance with some resistance against Goss's wilt.



P7443R VS DeKalb 26-28 (RIB)

4.2 bu/ac increase **73% WINS** 

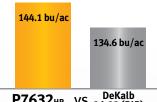
15 Proving Ground™ Comparisons

**P7632**HR



#### 2200 heat units

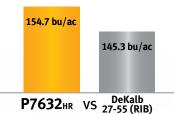
New, high-yielding corn hybrid with above average stalk and root strength along with very good drought tolerance.



P7632HR VS DeKalb 26-28 (RIB)

9.5 bu/ac increase





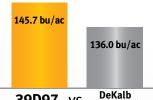
**9.4** bu/ac increase 75% WINS Proving Ground™ Comparisons

39D97



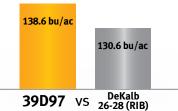
### 2250 heat units

Leader hybrid for maturity that maintains stable yields across all environments.



39D97 VS DeKalb 27-55 (RIB)

**9.6** bu/ac increase | **16** 88% WINS Proving Ground™ Comparisons



**8.0** bu/ac increase 8.0 bu/ac increase 75% WINS Proving Ground™ Comparisons

39**V**07



### 2300 heat units

High-yielding corn hybrid for grain production with good resistance to Goss's wilt and outstanding silage characteristics.



139.8 bu/ac

**39V07** VS DeKalb 27-55 (RIB)

**6.2** bu/ac increase

10 Proving Ground Comparisons

### Silage Corn



### Feature Products:

39F44 Regardary (CORD)

### 2000 heat units

- Ultra-early hybrid especially suitable for Central / Northern Alberta and Southern Saskatchewan
- Very good silage characteristics

39B90



### 2200 heat units

- Above average root strength and stalk lodging resistance
- Strong agronomic package



### 2250 heat units

- Late-flowering hybrid
- Above average root strength
- Very good drought tolerance

P8581R

#### 2575 heat units

- Solid silage scores
- Excellent silage yield potential

**P8622**AM



#### 2600 heat units

- Optimum<sup>®</sup>AcreMax<sup>™</sup> product delivering integrated refuge for above-ground insect control
- Solid agronomics and silage characteristics
- Very good silage yield potential

**P8906**AM™



### 2650 heat units

- Exceptional silage yield potential
- High tonnage hybrid with high quality

### **New Corn Products**

P7332R (ROUTE)

- Excellent root strength
- Good drought tolerance
- Excellent husk cover
- Average grain drydown

### P7410HR W LIBERTY ...





- New early Corn hybrid with HX1/LL
- Good stalk strength
- Very good root strength
- Excellent drought tolerance

### P7632HR V LIBERTY







- Good drought tolerance
- Above average stalks and root strength
- Good husk cover

### P7632AM™



- Optimum<sup>®</sup> AcreMax<sup>™</sup> product delivering integrated refuge for above ground insect control
- Good drought tolerance
- Excellent root strength
- Good husk cover



### 2275 heat units

- Optimum<sup>®</sup> AcreMax<sup>™</sup> product delivering integrated refuge for above-ground insect control
- Good drought tolerance and excellent root strength • Moderate Goss's wilt resistance
- Average grain drydown

### Silage Corn Characteristics\*

\* New

ew	Pioneer® Brand Produc	Technology Segment <sup>1</sup>	HeatUnits	Grain Drydown²	Plant Staygreen <sup>3</sup>	Grain TestWeight⁴	Silage CRM <sup>5</sup>	Silage Yield <sup>6</sup>	Starch and Sugar, %7	Fiber Digestibility 8	Whole-Plant Digestibility 9	Silage Crude Protein <sup>10</sup>	Milk Per Acre 11	Milk Per Ton 12	Beef Per Acre 13	Beef Per Ton ™	Gibberella Ear Rot 15	Goss's Wilt	Amide 16	Benzoic Acid and Phenoxy 17	Isoxazole 18	SU <sup>19</sup>
P	roduct							Cha	.ract	erist	tic R	latin	ıgs						He Ma	erbicide inageme	- Hybri nt Guid	d le
391	F44	Agento	2000	6	3	7	71	5	7	9	8	8	5	7	5	7	6	3	•	•	•	•
P7	213 <sub>R</sub>	Agency Company	2050	3	3	7	71	6	8	8	8	9	6	9	6	9		3	•	•	•	•
P7	332R *	***	2050	5		5												4				
391	M26	A Special Control of the Control of	2100	6	3	7	72	6	7	7	7	8	6	5	6	5	5	3	•	•	•	٠
P7	410Hr *	LIBERTY LINK W	2100	PAA	PBA	PAA												PBA				
P7	443 <sub>R</sub>	CONT.	2100	7	3	5	76	7	8	7	7	6	7	7	7	7	5	4	•	٠	•	•
39	D95		2175	6	5	5	75	7	9	8	9	7	8	9	8	9	6	3	•	•	•	•
391	B90		2200	6	6	7	78	8	8	5	5	5	8	5	8	5	5	4	•	٠	•	•
P7	632нг	LIBERTY LINK W	2200	5		5																
397	Z69	LIBERTY LINK	2225	7	4	6	75	7		8	9	9	7	8	7	8	4	6	•	•	•	•
P7	632am <sup>-†</sup>	Link * E	2225	5		5												4				
39	D97	LIBERTY LINK	2250	6	5	5	75	7	9	8	9	7	8	9	8	9	6	3	•	•	•	•
391	F60	Manager Manage	2250	6	5	6	78	7		7	7	9	7	7	7	7	4		•	•	•	•
39\	V05	Figure 1	2250	6	4	5	80	7	5	8	9	7	7	9	7	9	6	6	•	٠	•	•
P7	958ам™*	AcreMax W HREW &	2275	PA	PAA	PAA												PA				
39\	V07	LIBERTY LINK W	2300	6	4	5	80	7	5	8	9	7	7	9	7	9	6	6	•	٠	•	•
P8	193ам"	LIBERTY LINK &	2400	4	7	4													•	•	•	•
P82	210 *		2425	4	5	4											5	3	•	•	•	•
P82	210r	Agenty.	2425	4	4	3													•	•	•	•
P82	210нг	LIBERTY LINK W	2475	4	4	3													•	•	•	•
P86	651нг	LIBERTY LINK *	2550	4	6	6													•	•	•	•
P8	673ам" *	AcreMax UNK * LINK *	2550	7	4	5	86	8	9	9	9	6	9	9	9	9	4	4				
P8:	581R	Agrang.	2575	7	5	5	89	8	6	5	6	9	7	7	7	7	7	7	•	•	•	•
P8	622ам™*	Torontas W Link W 🎥 🔮	2600	6	7	4	85	7		7	5	9	7	6	7	6	5	4				
P86	622нг	LIBERTY LINK &	2600	6	7	4	85	7		7	5	9	7	6	7	6	5	4	•	٠	•	•
P8	622r *		2600	6	7	4	85	7		7	5	9	7	6	7	6	5	4				
P8	906ам™	LeneMax W Link W 🏊 🔐	2650	5	7	5	84	8	8	7	8	8	8	8	8	8	6	4	•	•	•	•
P9	188am" *	Torontas W Link W 🏖 🔐	2650	PBA	PBA	PAA	85	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA		PA				
P91	675 <sub>R</sub> *	**	2850	3	5	5	94	8	8	8	8	9	8	9	8	9	5	6				
P91	681am**	AcreMax Cheerty Link &	2850	PAA	PAA	PA	95	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PA	PAA				
P9	754am" *	AcreMax W Link W &	2850	6	6	5	95	8	7	8	7	8	7	7	7	7	6	6				
P9	<b>789</b> amxt**	AcreMax LIBERTY A GRISUFERW	2900	PA		PBA	95	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PAA	PBA	PAA				

# PIONEER

### **Pioneer® brand Optimum® AcreMax™ and Herculex® Products**

### **Maximized yields and simplified refuge compliance**

DuPont Pioneer is committed to delivering integrated refuge products that provide growers with increased flexibility and convenience for insect resistance management (IRM). Pioneer® brand Optimum® AcreMax™ and Herculex® products bring multiple modes of action for insect protection to help increase overall farm yields by reducing refuge and extend the durability of important traits.

	HERCULEX I Insect Protection	AcreMax*	AcreMax XTreme
Technologies	Herculex® I (HX1) (HX1, LL, RR2)	YieldGard® Corn Borer (YGCB) x Herculex® I (HX1) + herbicide tolerant refuge (LL, RR2) (AM, LL, RR2)	Agrisure® RW (RW) x Herculex® XTra (HXX) x YieldGard® Corn Borer (YGCB) + herbicide tolerant refuge (LL, RR2) (AMXT, LL, RR2)
Pests Controlled	European Corn Borer Corn Earworm Western Bean Cutworm Fall Armyworm Black Cutworm	European Corn Borer Corn Earworm Western Bean Cutworm Fall Armyworm Black Cutworm	European Corn Borer Corn Earworm Western Bean Cutworm Fall Armyworm Black Cutworm Western Corn Rootworm Northern Corn Rootworm
Description	Broad spectrum, above-ground insect protection	Single bag product with integrated corn borer refuge	Single bag product with integrated corn borer and corn rootworm refuge
Benefits	Above-ground protection from corn borer, western bean cutworm and black cutworm	<ul> <li>Ultimate simplicity</li> <li>Maximized farm yields</li> <li>Technology preservation</li> </ul>	Simplifies refuge     Reduced refuge,     maximum yields     Technology preservation     Proven performance     Multiple modes of insect protection
Refuge	20% refuge up to 1/4 mile or 400m away	Integrated refuge; no separate refuge required	Integrated refuge; no separate refuge required
Refuge Examples	Up to Market August 1 Market and Community 1 Market and Community 1 Market and Community 1 Market 1 Ma	AcreMax  ## Acressed  ## Acressed  ## Acressed Section 15, 820	Acre Max Acr

### **Technology Segments**

Com Earworm
Westem Bean Cutworm
Fall Armyworm

European Corn Borer

Diack Culwollii Westem Com Rootwor

Northern Corn Ro

Chubocato

lihertv®

Technology Segment Identifiers	Corn Technology Traits		Insec	t Res		ce Le	vels			icide tance
RR2	Roundup Ready® Corn 2								E	
ш	LibertyLink®									E
HX1, LL	Herculex® I, LibertyLink (Corn Borer)	E	М	v	E	v				E
HX1, LL, RR2	Herculex I, LibertyLink, Roundup Ready Corn 2 (Corn Borer)	E	М	v	E	v			E	E
AM™	Optimum® AcreMax™, LibertyLink, Roundup Ready Corn 2, YieldGard® Corn Borer (Corn Borer)	E	М	v	E	V			E	E
AMXT	Optimum AcreMax XTreme, LibertyLink, Roundup Ready Corn 2, (Corn Borer/Rootworm)	E	М	v	E	V	E	E	E	E
HXRW, LL, RR2	Herculex RW, LibertyLink, Roundup Ready Corn 2 (Corn Rootworm)						E	V	E	E
HXX, LL	Herculex XTRA, LibertyLink (Corn Borer/Rootworm)	E	М	v	E	v	E	v		E
HXX, LL, RR2	Herculex XTRA, LibertyLink, Roundup Ready Corn 2 (Corn Borer/Rootworm)	E	M	V	E	v	E	V	E	E
YGCB	YieldGard Corn Borer	E	M		G					
YGCB, RR2	YieldGard Corn Borer, Roundup Ready Corn 2	E	М		G				E	



# Soybeans

### Feature Products:

### **New Soybean Products**

P001T34R



- Ultra early maturity, earlier than 900Y61
- Very good early growth and harvest standability
- Average canopy width
- Very strong iron chlorosis tolerance

### P002T04R

- Ultra early maturity, earlier than 900Y61
- Excellent early growth scores and harvest standability
- Above average canopy width
- Built-in Phytophthora resistance (Phytophthora gene 1K)
- Good tolerance to iron chlorosis

### P008T22R ROUNDIFFANT STREET



- New Genuity® Roundup Ready 2 Yield® soybean variety
- Excellent plant height for maturity
- Excellent harvest standability
- Built-in Phytophthora resistance (Phytophthora gene 1C)
- Very good tolerance to iron chlorosis
- Moderate white mold tolerance

### P008T70R

- Excellent yield potential
- Very good harvest standability
- Build-in Phytophthora resistance (Phytophthora
- Good tolerance to iron chlorosis
- Excellent yield potential

### 900Y61

### 2425 heat units

- Very early variety
- Outstanding field emergence
- Excellent harvest standability

### 900Y71



### 2450 heat units

- Very early variety
- Solid agronomics
- Built-in Phytophthora resistance (Phytophthora gene 1C)

### **B** PIONEER. P001T34<sub>R</sub>

### **Soybean Numbering System Example: P001T34**R

- P Denotes a Pioneer® brand product
- **001** Relative Maturity Group
  - Denotes "T Series"
- Random Number (0-99)
- R Segment Identifier -

### R = Roundup Ready® gene

### Characteristics



\* New

Product

P001T34R

P002T04R

900Y61

900Y71

90Y01

P008T70r\*

P008T22R2\*



SOYBEAN

SEED

2450 007 8 7 L 1c 5 4 7 6 6 7 4 2250-2750 9 2400-2900

\*\* Ratings denoted with a double asterisk (\*\*) reflect preliminary data subject to change when additional data becomes available.



6 6\*\* 5 2450-2950



2475 008 7 7 L 1k 3

# Sunflowers



### Feature Products:

### P63ME70 ExpressSun\* NuSun\*

Mid-Oleic / NuSun® Oil

- Built-in tolerance to Express® herbicide
- Outstanding yield potential
- Solid agronomic package

### 63A21

#### Linoleic

- Early maturity short stature hybrid
- Excellent emergence
- Very good drydown
- Shorter plant height

### P63NE80 DuPont ExpressSun' NuSun' Mid-Oleic / NuSun' Oil

- Excellent yield potential
- Outstanding oil content
- Very good stalk and root strength

### Characteristic

Pioneer® Braı	Herbicide Sys	Relative Matu	Yield	Emergence <sup>3</sup>	Drydown	Percent Oil	Self Fertility	Plant Height	Stem Curvatu	Neck Strengt	Stalk Strengt	Root Strength	Rust Field Tol	Root Sclerotir	Head Scleroti	Phomopsis	Midge Score	Downy Milder	<b>Test Weight</b>	PCT over 138
							C	hara	acte	risti	c R	atin	ıgs							
63A21	Linoleic	29	7	8	7	4	8	8	7	8	9	7	1	4	4	3	3	1	6	4
63M80	NuSun	38	9	6	6	8	9	6	7	6	7	7	3	6	5	4	6	1,2	6	5
63N82	DuPont <sup>**</sup> ExpressSun <sup>o</sup>	38	9	6	6	7	9	6	7	6	7	7	3	6	7	6	6	1,2	7	5
P63ME70	DuPont" ExpressSun®	37	9	6	6	7	9	6	8	8	7	7		7	6	6		1-4	5	5
P63ME80	DuPont" ExpressSun*	38	9	6	6	7	8	6	7	6	7	7		5	6	6	6	1-4	7	5

# Alfalfa



### Feature Products:

### 53V52

### Muscle - Stable high yield and quality

- Solid variety with dependable forage yield
- Above average field appearance
- Very winterhardy

### **54Q32**

### Forage quality

- 54Q32 has higher Relative Forage Quality (RFQ) vs. other varieties
- Yield is similar to Pioneer® variety 55V48, which make it a premium choice for most dairies
- For growers that demand high quality forage
- High yield potential
- Excellent disease resistance package

### 55V12

### **Lodging resistance**

- More upright stem and crown architecture leads to better lodging resistance and standability
- Outstanding first cut yields and high harvestable yield
- Similar forage quality as other "muscle" varieties, no difference in lignin or NDF digestibility
- Excellent disease resistance package
- Outstanding forage yield potential

### 55V48

### Muscle - Stable high yield and quality

- Excellent pest resistance
- Outstanding winterhardiness
- Superb forage yield

### 55V50

### New leader variety in the Muscle segment

- 3% yield advantage over Pioneer® variety 55V48
- High resistance ratings for Phytophthora and Aphanomyces race 1 and 2
- High overall root rot resistance

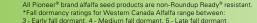
### 55Q27 New High Forage Quality

- Top yielding variety with aggressive regrowth adapted for dairy quality forage production
- Very good winterhardiness and excellent disease resistance
- High suitability for heavy soils where root rots are a concern
- Holds high fiber digestibility for a longer period of time, good for an extended harvest window



### Alfalfa Numbering System Example: 55V48

- Alfalfa
- Signifies Fall Dormancy rating\*
- V Descriptive Letter for quality, V = Very winterhardy
  - Q = Quality forage variety
- Denotes random number of alfalfa seed product



### Alfalfa



### Characteristics

N	MA Pioneer® Brand Product*	Segment	Relative Forage Quality	Forage Yield	Field Appearance	Fall Dormancy	Winterhardiness 1	Disease Resistance Inde	Bacterial Wilt	Verticillium Wilt	Fusarium Wilt	Anthracnose (R1)	Phytophthora Root Rot	Aphanomyces (Race 1)	Aphanomyces (Race 2)	Spotted Aphid	Pea Aphid	Blue Alfalfa Aphid	N. Root-knot Nematode	Stem Nematode	Potato Leafhopper	Standability/Lodging Resi
	Product							C	hara	cter	istic	Rat	ings									
	53V52	Muscle	8	6	6	4	VH	33	HR	HR	R	R	HR	HR	HR	HR	R			LR		
	<b>54Q32</b>	Quality	9	8	9	4	VH	32	HR	HR	HR	HR	HR	HR	LR	R	R		R	LR		
	55V12	Lodging	7	8	8	5	VH	33	R	HR	HR	HR	HR	HR	R	R	MR		R	R		R
	55V48	Muscle	7	8	9	5	VH	33	HR	R	HR	HR	HR	HR	R	R	HR		R	R		
	55V50	Muscle	7	9	9	5	VH	34	HR	HR	R	HR	HR	HR	HR	R	R		HR	R		
	55Q27 <b>*</b>	Quality	8	9	9	5	VH	34	HR	HR	HR	HR	HR	HR	R	R	R			HR		

### **Alfalfa Agronomy**

### **Plant Population**

- Target 20-25 plants per square foot surviving after the first winter
- 55 stems per square foot are needed to maintain full yield potential

### **Seeding Rates**

### 15-18 pounds per acre seeding rate is a good starting point for pure stands

- 250,000 seeds per pound = about 80-90 seeds per square foot
- Higher seeding rates help improve plant stands in poor soil conditions with non-optimal seed beds
- Thick plant stands compete better with weeds

### 12 pounds per acre can be adequate in optimal soil conditions

- Lower seeding rates can be associated with reduced establishment year yield and risk of creating non-uniform or spotty stands
- Weed competition can increase with non-uniform stands and further reduce yield and quality
- Spotty stands hurt production over the entire stand life

### Optimal alfalfa seeding rate is 12-15 pounds per acre.

### **Seed Treatments & Inoculants**

- Pioneer® brand polymer-coated alfalfa seed comes treated with separate layers of Apron® XL and Nitragin® Gold Rhizobia for best-in-the-industry rhizobium activity
- Pioneer® brand polymer coating is a minimal coating, providing high value in pure live seed with improved seed flowability, plantability and safety

### **Pure Live Seed Information:**

- Planting heavy-coated alfalfa seed requires higher seeding rates for the same amount of pure live seed per acre
- Make sure you know your pure live seed per acre for your alfalfa seed you are purchasing
- Know your cost per pound of pure live seed as you could be paying more for your seed if you do not make the calculation

### **How to Calculate Pure Live Alfalfa Seed**

Pure live seed is the seed you can expect to germinate and contribute to stand establishment. Pure live seed can be calculated from information on the alfalfa seed bag tag. Pure live seed is the percent pure seed multiplied by the percent total germination (germ + hard seed), divided by 100. Hard seed is viable seed that does not germinate within the seven day germination test period. Hard seed is included in the total germination number on the seed bag tag and it needs to be included in the pure live seed calculation.

### **Example calculation of Pure Live Seed:**

- Pioneer® brand alfalfa seed tag info: 90% pure seed x 90% germination + hard seed = 81% pure live seed
- Heavy-coated competitor alfalfa seed tag info: 66% pure seed x 90% Total Germ + hard seed = 59% pure live seed

DuPont Pioneer scarifies most seed lots in order to keep hard seed amount at 10% or less of finished seed. Higher percent hard seed in some competitive seed bags tends to indicate a lack of scarification, and may lead to a lengthier stand establishment period.

# Sila-Bac brand Forage Inoculants



Bunklife

Carn Eibra I	cohnology	Ferm	Bunk	Fibre
Corn Fibre T			Rating	S
11CFT Multi-strain with L. buchneri	Improves fibre (NDF) digestibility. Reduces dry matter loss resulting from both "front-end" fermentation losses and "back-end" feedout losses. Reduces heating, increasing bunklife.  REGISTERED PRODUCT CLAIMS  Improved dry matter intake Improved NDF digestibility Improved gain/tonne of silage fed  Reduced dry matter loss at feeding Reduced dry matter loss at feeding	**	***	**:
Corn Silage				
11C33 Multi-strain with L. buchneri	Reduces dry matter loss resulting from both "front-end" fermentation losses and "back-end" feedout losses. Reduces heating, increasing bunklife. Provides similar silage quality as 1132 with greatly improved bunklife.  REGISTERED PRODUCT CLAIMS  • Reduces heating at feeding  • Reduces dry matter loss	**	***	**
Multi-Crop				
1174	Reduces dry matter loss resulting from "front-end" fermentation losses. Improves fermentation, retaining more energy. Increases bunklife.  REGISTERED PRODUCT CLAIMS  • See claims below under "Grass/Cereal/Legume"	varies by crop	varies by crop	varies by crop
Alfalfa Silag	je			
11H50	Reduces dry matter loss. Reduces heating, improving bunklife. Promotes faster, more efficient fermentation. Reduces ammonia nitrogen loss for improved protein quality. Helps improve alfalfa silage nutritional quality.  REGISTERED PRODUCT CLAIMS  Improved dry matter digestibility	***	**	*
Grass Fibre	Technology			
11GFT Multi-strain with L. buchneri	Reduces dry matter loss resulting from both "front-end" fermentation losses and "back-end" feedout losses. Reduces heating, which increases bunklife. Improves neutral detergent fibre (NDF) digestibility  **REGISTERED PRODUCT CLAIMS**  **Improves acid detergent fibre (ADF) digestibility  **Improves neutral detergent fibre (NDF) digestibility	**	***	***
Grass/Cerea	al/Legume			
11G22 Multi-strain with L. buchneri	Improves silage quality and reduces the risk of heating, which increases bunklife. Provides low terminal pH and desirable volatile fatty acid profile for decreased fermentation loss and enhanced bunklife.  REGISTERED PRODUCT CLAIMS  Improves ADF digestibility  Reduces heating at feeding  Reduces growth of yeast and mould at feeding  Reduces dry matter loss at feeding	**	***	*
1174	Reduces dry matter loss. Promotes faster silage fermentation, retaining more energy. Improves forage quality for silage with higher energy.  REGISTERED PRODUCT CLAIMS  Improved silage protein quality (soluble) Improved fibre (ADF) digestibility (soluble) Improved average daily gain (soluble) Improved feed efficiency (soluble) Improved fibre fraction (soluble) Improved fibre fraction (soluble) Improved fibre fraction (soluble)	varies by crop	varies by crop	varie: by crop

<sup>\*\*\* =</sup> Outstanding \*\* = Excellent \* = Good

### Canola Footnotes

Trait ratings provide key information useful in selection and management of Pioneer® brand products in your area. Scores are based on period-of-years testing through 2013 harvest and were the latest available at time of printing. Some scores may change after 2014 harvest. Contact your Pioneer Hi-Bred sales representative before planting for the latest trait rating information.

IMPORTANT: Information and ratings are based on comparisons with other Pioneer hrand products, not competitive products. Information and ratings are assigned by DuPont Pioneer Agronomists and Research Managers, based on average performance across area of adaptation under normal conditions, over a wide range of both climate and soil types, and may not predict future results. Product responses are variable and subject to any number of environmental, disease and pest pressures. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com/products or contact a Pioneer Hi-Bred sales representative for the latest and most complete listing of traits and scores for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions.

RATINGS: 9 = Excellent; 1 = Poor; Blank = Insufficient Data.

1 MATURITY: 9 = Late; 6 = Medium; 5 = Medium-Early; 3 = Early; 1 = Very Early.

2 HERBICIDE TOLERANT TRAIT: Hybrids and varieties with the Roundup Ready® gene (RR) are tolerant to labeled rates of Roundup® branded herbicides. This technology allows for post-emergent applications of Roundup without crop injury or stress (see herbicide label). Labeled Roundup herbicide should only be used over the top of those hybrids and varieties that carry the Roundup Ready designation. Hybrids and varieties with the CLEARFIELD® trait (CL) are tolerant to labeled rates of Odyssey®. Ares™, Absolute® or SaluteTM, and Solo® herbicides. This technology allows for post-emergent applications of these herbicides without crop injury or stress (see herbicide label). Labeled herbicides should only be used over the top of those hybrids and varieties that contain the CLEARFIELD trait. Roundup Ready® and Roundup® are registered trademarks used under license from Monsanto Company. Ares™is a trademark, and Absolute. Clearfeld, the unique Clearfeld symbol. Odyssey, and Tensile are registered trademarks of BASF Agrochemical Products B.V.; Solo is a registered trademark of BASF SE; all used with permission by BASF Canada Inc. Salute™ is a trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.

3 BLACKLEG: R = Resistant; MR = Moderately Resistant; MS = Moderately Susceptible; S = Susceptible.

4 BLACKLEG: 9 = Resistant; 1 = Susceptible.

5 SCLEROTINIA: 9 = Highly Tolerant; 5 = Moderately Tolerant; 1 = Susceptible.

6 CLUBROOT: R = Resistant, S = Susceptible.

7 CLUBROOT - 9 = Highly Resistant; 1 = Susceptible.

8 FUSARIUM WILT: R = Resistant; S = Susceptible. Current Fusarium rating is provisional and based on limited data.

9 EARLY GROWTH: 9 = Excellent, 1 = Poor. Early growth is recorded when plants are at 4-6 leaf stage. It is a subjective evaluation of healthiness of plants and the soil area covered by their leaves.

10 GREEN SEED CONTENT: 9 = Very low count (desired); 1 = Very high count.

11 STANDABILITY: 9 = Upright (desired) while 1 = Severely lodged

12 PLANT HEIGHT: 9 = Tall; 1 = Short (desired).

13 OIL CONTENT: Oil content is compared to the common long term check 46A65. A change of one score represents approximately one percent difference in oil content.

Pioneer® brand canola products are treated with Helix® Vibrance™ seed treatment. Helix® and Vibrance® are registered trademarks of a Syngenta Group Company.

### **Grain Corn Footnotes**

\*\*All scores of integrated refuge products are based upon the major component

\*\*\*\*All Pioneer products are hybrids unless designated with AM1, AM, AMRW, AMX and AMXT, in which case they are brands.

IMPORTANT: Trait rating scores provide key information useful in selection and management of Pioneer® brand products in your area. Information and ratings are based on comparisons with other Pioneer brand products, not competitive products. Information and scores are assigned by DuPont Pioneer Research Managers. Scores are based on period-of-years testing through 2013 harvest and were the latest available at time of printing. Some scores may change after 2014 harvest. Scores represent an average of performance data across areas of adaptation, multiple growing conditions, and a wide range of both climate and soil types, and may not predict future results. All products within a hybrid family receive the same score unless observations indicate a significant difference. Individual product responses are variable and subject to a variety of environmental, disease and pest pressures. Please use this information as only one component of your product positioning decision. Refer to www.pioneer.com/products or contact a Pioneer sales professional for the latest and most complete listing of traits and scores for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions.

RATINGS: 9 = Outstanding: 1 = Poor; PAA = Predicts Above Average; PA = Predicts Average; PBA = Predicts
Below Average: Blank = Insufficient Data.

1 TECHNOLOGY SEGMENT: AM - Ontimum® AcreMax® Insect Protection system with YGCB, HX1, LL, RR2. Contains a single-bag integrated refuge solution for above-ground insects. In EPA-designated cotton growing counties, a 20% separate refuge must be planted with Optimum AcreMax products. AMX - Optimum® AcreMax® Xtra Insect Protection system with YGCB, HXX, LL, RR2. Contains a single-bag integrated refuge solution for above- and helow-ground insects. In EPA-designated cotton growing counties, a 20% senarate refuge must be planted with Optimum AcreMax Xtra products. AMXT (Optimum® AcreMax® XTreme) - Contains a single-bag integrated refuge solution for above- and below-ground insects. The major component contains the Agrisure® RW technology, the YieldGard@Corn Borer gene, and the Herculex@ XTRA genes, HX1 - Contains the Herculex@ Unsect Protection gene which provides protection against European corn borer, southwestern corn borer, black cutworm, fall armyworm, western bean cutworm, lesser corn stalk borer, southern corn stalk borer, and sugarcane borer; and suppresses corn earworm. HXX - Herculex® XTRA contains the Herculex I and Herculex RW genes. LL - Contains the LibertyLink® gene for resistance to Liberty® herbicide. YGCB - The YieldGard® Corn Borer gene offers a high level of resistance to European corn horer, southwestern corn horer and southern cornstalk horer; moderate resistance to corn earworm and common stalk borer; and above average resistance to fall armyworm. RR2 - Contains the  $Roundup\ Ready @\ Com\ 2\ trait\ that\ provides\ crop\ safety\ for\ over-the-top\ applications\ of\ labeled\ glyphosate$ herbicides when applied according to label directions.



Herculex® Insect Protection technology by Dow AgroSciences and Pioneer Hi-Bred. ®, ™ Herculex and the HX logo are trademarks of Dow AgroSciences LLC.

YieldGard®, the YieldGard Corn Borer Design and Roundup Ready® are registered trademarks used under licensefrom Monsanto Company

Liberty®, LibertyLink® and the Water Droplet Design are trademarks of Bayer.

Agrisure® is a registered trademark of, and used under license from, a Syngenta Group Company.

Agrisure® technology incorporated into these seeds is commercialized under a license from Syngenta Crop
Protection AG

2 CRM (Comparative Relative Maturity): There is not an industry standard for maturity ratings so comparing product maturity and harvest moisture ratings between companies is usually difficult. Use the CRM rating to compare Pioneer products with competitive products of a similar maturity and harvest moisture. CRM ratings, and harvest moistures, for products within a family may vary slightly, depending upon the level of insect (ECB and CRW) infestation. Conventional and straight products with the RR2 gene within a family will usually be 1-2 CRMs earlier than indicated, when insect infestations are moderate to heavy. One CRM difference is about ½ point of moisture difference at harvest

3 PHYSIOLOGICAL CRM: Measures differences in maturity to zero milkline stage. To help decide if a new product fits your area's growing season, compare its physiological CRM to a product that you plant or one that is successfully used in your area.

4 GDUs TO PHYSIOLOGICAL MATURITY: Measures differences in growing degree units (GDUs) required to zero milkline stage. To help decide if a new product fits your area's growing season, compare its GDUs to physiological maturity to a product that you plant or one that is successfully used in your area.

5 GRAIN DRYDOWN: Compares products of similar maturity for rate of moisture loss during grain drydown. A higher score indicates faster drydown. A lower score indicates slower drydown, or a wider opportunity for silage and high-moisture com harvest.

6 STRESS EMERGENCE: All products are expected to establish normal stands under average soil conditions. Stress emergence is a measure of the genetic ability or potential to emerge in the stressful environmental conditions of cold, wet soils or short periods of severe low temperatures, relative to other Pioneer products. Ratings of 7-9 indicate very good potential to establish normal stands under such conditions; a rating of 5-6 indicates average potential to establish normal stands under stress conditions; and ratings of 1-4 indicate the product has below average potential to establish normal stands under stress and should not be used if severe cold conditions are expected immediately after planting. Stress emergence is not a rating for seedling disease susceptibility, early growth or speed of emergence.

7 DROUGHT TOLERANCE: Drought tolerance is a complex trait, determined by a platform's ability to maintain yield in limited moisture environments. A higher score indicates the potential for higher yields vs. other platforms of similar maturity in limited moisture environments.

8 HIGH RESIDUE SUITABILITY: HS - Highly Suitable; S - Suitable; X - Poorty Suited. Suitablity rating based on field observations and a weighted calculation of gray leaf spot, stress emergence, anthracnose stalk rot, northern corn leaf blight, and Diplodia ear rot scores. High Residue Suitability ratings may vary by environment and geography.

9 EAR FLEX: Score reflects the ability of a product to flex ear size as plant density is reduced or as growing conditions improve.

10 TEST WEIGHT: Higher score indicates heavier test weight.

11 PLANT HEIGHT: 9 = Very Tall; 1 = Short

12 EAR HEIGHT: 9 = High: 1 = Low

13 MID-SEASON BRITTLE STALK: Ratings determined by frequency and severity of stalk snappage at lower to middle stalk internodes from conditions usually favored by rapid or optimum growth. Relative response of products can be affected by planting date, stage of growth, rate of growth, wind severity and other variables. Scores derived from both natural observations and artificial evaluation immediately prior to tasseling. NOTE: Scores do not reflect snappage enhanced by or due to herbicide interaction. The use of growth regulator herbicides use 2.4-D and dicamba can increase the brittle snap potential of corn products. Products with lower brittle stalk ratings will require more caution and have a higher risk associated with the use of growth regulator herbicides. Early application, proper rates and application methods, along with both product and herbicide selection can help reduce this risk. BRITTLE STALK PRECAUTION: In areas with higher potential for brittle stalk breakage, growers must balance the risk of planting products with brittle stalk ratings of losse than 4 against the overall performance of more resistant products with higher ratings. All products have a period of susceptibility to brittle stalk. Products with below average ratings may have a longer period of susceptibility, or may experience more severe breakage relative to products with higher scores during period of susceptibility.

Dekalb® is a registered trademark of the Monsanto Company.

Under certain environmental conditions any product can be injured by any herbicide. This guide can assist in selecting and managing herbicide programs. It is based on replicated research trials and field observations. See your Pioneer sales professional or herbicide representative regarding herbicide families that require careful management. Always read and follow all label instructions and precautions. DuPont Pioneer makes no warranty regarding the herbicide croor response information in this quide.

 Adequate Tolerance. With the particular hybrid, available research and/or field observations suggest this herbicide is unlikely to result in material crop injury under normal circumstances.

▼ Requires Careful Management. With this particular hybrid, available research and or field observations suggest this herbicide may exhibit crop injury in challenging environments such as heavy rainfall during seed germination or seedling emergence, sandy soils, soils low in organic matter, high pH soils, or during periods of excessively cold, hot, dry or wet weather. University research indicates products within a herbicide class may vary in their degree of crop selectivity. The potential for herbicide interaction may also be impacted by the labeled herbicide rate used and the method or timing of application.

Crop Response Warning. With this hybrid in field observations and/or research, crop injury has occurred with this herbicide

Insufficient Data. Additional testing is needed to evaluate this hybrid.

Always read and follow all label instructions and precautions.

DuPont Pioneer makes no warranty regarding the herbicide crop response information in this guide

14 AMIDE (Chloroacetamide and Others) tested was Harness. This family also includes Surpass, Dual II Magnum, Outlook, Define, Lasso, Topnotch, Degree, Ramrod, DuPontTM Cinch⊚ and others in pre-packaged mixes.

15 BENZOIC ACID (Synthetic Auxins) tested was Banvel or Clarity. The Phenoxy family includes 2.4-D. The rating represents these products and others in pre-packaged mixes. Products may exhibit greater early season stalk breakage when Benzoic Acid or Phenoxy herhicides are applied prior to a significant windstorm.

16 ISOXAZOLE (4-HPPD Inhibitors) tested was Balance Pro. The herbicide prevents the biosynthesis of a photosynthetic pigment (carotenoid). The carotenoid pigment prevents the degradation of chlorophyll. Susceptible plant will turn white and chlorotic.

17 SU (Sulfonylureas, ALS Inhibitors) tested was Option, unsafened DuPontTM Basis Gold<sup>®</sup>, Resolve<sup>®</sup> or DuPontTM Steadfast<sup>®</sup>. This family also includes DuPontTM Accent<sup>®</sup>, DuPontTM Basis<sup>®</sup>, Beacon, Permit, Elim, and others in pre-packaged mixes. A similar family called sulfonanilides includes Python. CAUTION: Some sulfonylurea products have label restrictions on products with maturity shorter than 88 CRM. Review the herbicide label before applying any sulfonylurea product to products less than 88 CRM.

Ratings in this quide based on data collected through 2013 harvest.

Basis Gold® is a restricted-use pesticide

All products are trademarks of their manufacturer.

### **Silage Corn Footnotes**

\*\*\*All Pioneer products are hybrids unless designated with AM1, AM, AMRW, AMX and AMXT, in which case they are brands.

IMPORTANT: Trait rating scores provide key information useful in selection and management of Pioneer® brand products in your area. Information and ratings are based on comparisons with other Pioneer brand products, not competitive products. Information and scores are assigned by DuPont Pioneer Research Managers. Scores are based on period-of-years testing through 2013 harvest and were the latest available at time of printing. Some scores may change after 2014 harvest. Scores represent an average of performance data across areas of adaptation, multiple growing conditions, and a wide range of both climate and soil types, and may not predict future results. All products within a hybrid family receive the same score unless observations indicate a significant difference. Individual product responses are variable and subject to a variety of environmental, disease and pest pressures. Please use this information as only one component of your product positioning decision. Refer to www.pioneer. com/products or contact a Pioneer sales professional for the latest and most complete listing of traits and scores

for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions

RATINGS: 9 = Outstanding: 1 = Poor; PAA = Predicts Above Average; PA = Predicts Average; PBA = Predicts Below Average; Plank = Insufficient Data.

1 TECHNOLOGY SEGMENT: AM - Optimum® AcreMax® Insect Protection system with YGCB, HX1, LL, RR2. Contains a single-bag integrated refuge solution for above-ground insects. In EPA-designated cotton growing counties, a 20% separate corn borer refuge must be planted with Optimum AcreMax products. AMAXT (Optimum® AcreMax® XTreme) - Contains a single-bag integrated refuge solution for above- and below-ground insects. The major component contains the Agrisure® RW trait, the YieldGard® Corn Borer gene, and the Herculex® XTRA genes. In EPA-designated cotton growing counties, a 20% separate corn borer refuge must be planted with Optimum AcreMax XTreme products. HX1 - Contains the Herculex® I Insect Protection gene which provides protection against European corn borer, southwestern corn borer, black cutworm, fall armyworm, western bean cutworm, lesser corn stalk borer, southwestern corn borer, and suppresses corn earworm. HXX - Herculex® XTRA contains the Herculex and Herculex® RW genes. YGCB - The YieldGard® Corn Borer gene offers a high level of resistance to European corn borer, and above average resistance to fall armyworm. LL - Contains the LibertyLink® gene for resistance to Liberty® berbicide. RR2 - Contains the Roundup Ready® Corn 2 trait that provides crop safety for over-the-top applications of labeled glyphosate herbicides when applied according to label directions.

Herculex® Insect Protection technology by Dow AgroSciences and Pioneer Hi-Bred. ®, TM Herculex and the HX logo are trademarks of Dow AgroSciences LLC.

YieldGard®, the YieldGard Corn Borer Design and Roundup Ready® are registered trademarks used under license from Monsanto Company.

Liberty®, LibertyLink® and the Water Droplet Design are trademarks of Bayer.

Agrisure® is a registered trademark of, and used under license from, a Syngenta Group Company. Agrisure® technology incorporated into these seeds is commercialized under a license from Syngenta Crop Protection AG.

2 GRAIN DRYDOWN: Compares products of similar maturity for rate of kernel moisture loss after grain physiological maturity (zero kernel milkline). A lower score indicates slower drydown, possibly offering a wider opportunity for high-moisture grain harvest.

3 PLANT STAYGREEN: Indicator of late-season plant health. A higher score indicates ability to survive farther into the growing season. Scores are taken near grain physiological maturity (zero kernel milkline) stage.

4 GRAIN TEST WEIGHT: Higher score indicates heavier test weight.

5 SILAGE CRM (Silage Comparative Relative Maturity): With no industry standard for silage maturity, comparing maturity and harvest moisture among corn-for-silage products is difficult. DuPont Pioneer silage CRM ratings provide a relative comparison among Pioneer products of rates at which products reach harvestable whole-plant moistures. It is on the same scale as the CRM rating provided for grain-corn products and does not represent actual days from planting or emergence to harvest moisture or half milkline.

6 SILAGE YIELD FOR MATURITY: Based on tons/acre (adjusted to 30% dry matter) from multi-year comparison of products within a maturity range not exceeding 5 silage CRM units.

7 STARCH AND SUGAR, %: Percent starch and soluble sugars (DM basis) in the whole-plant sample predicted by

8 FIBER DIGESTIBILITY: Enzymatic estimate of percent degradable neutral detergent fiber (NDF) as a percent of total NDF in whole plant sample, predicted by NIRS.

9 WHOLE-PLANT DIGESTIBILITY: Based on whole-plant digestibility measurements (in vitro-cellulase) and nutrient profiles (starch, acid detergent fiber), as predicted by Near Infrared Reflectance Spectroscopy (NIRS).

10 SILAGE CRUDE PROTEIN: Based on the amount of crude protein in the whole plant, predicted by NIRS.

11 MILK PER ACRE: Ratings: 9 = Outstanding; 1 = Poor, based on University of Wisconsin MILK2006 utilizing silane yield nutrient content and dinestibility

12 MILK PER TON: Ratings: 9 = Outstanding; 1 = Poor, based on University of Wisconsin MILK2006 utilizing silage nutrient content and dioestibility.

13 BEEF PER ACRE: Ratings: 9 = Outstanding: 1 = Poor, based on University of Wisconsin MILK2006 utilizing silage yield, nutrient content and digestibility.

14 BEEF PER TON: Ratings: 9 = Outstanding; 1 = Poor, based on University of Wisconsin MILK2006 utilizing silage nutrient content and dioestibility.

DISEASE PRECAUTION: Grower should balance product yield potential, product maturity and cultural practice selection against their anticipated risk of a specific disease and need for resistance. In high disease-risk conditions, consider planting products with at least moderate resistance ratings of 4 or higher to help reduce risk. When susceptible products with disease ratings of 1 to 3 are planted in conditions of high disease pressure, the grower assumes a higher level of risk. If conditions are severe, even products rated as resistant can be adversely affected. Independent of yield reduction, diseases can predispose plants to secondary diseases such as stalk rots. This requires individual field and groduct monitoring for stalk stability and timely harvest when warranted.

DISEASE & PEST RATINGS: 8-9 = Highly Resistant; 6-7 = Resistant; 4-5 = Moderately Resistant; 1-3 = Susceptible; PAA = Predicts Above Average; PA = Predicts Average; PBA = Predicts Below Average; Blank = Insufficient Data

15 GIBBERELLA EAR ROT CAUTION: Ratings based upon visual symptoms at harvest. If Gibberella ear rot has caused significant damage in the past, growers should consider planting only products with at least moderate Gibberella ear rot ratings of 5 or higher.

Under certain environmental conditions any product can be injured by any herbicide. This guide can assist in selecting and managing herbicide programs. It is based on replicated research trials and field observations. See your Pioneer sales professional or herbicide representative regarding herbicide families that require careful management. Always read and follow all label instructions and precautions. DuPont Pioneer makes no warranty regarding the herbicide croor response information in this quide.

 Adequate Tolerance. With the particular hybrid, available research and/or field observations suggest this herbicide is unlikely to result in material crop injury under normal circumstances.

- ▼ Requires Careful Management. With this particular hybrid, available research and or field observations suggest this herbicide may exhibit crop injury in challenging environments such as heavy rainfall during seed germination or seedling emergence, sandy soils, soils low in organic matter, high pH soils, or during periods of excessively cold, hot, dry or wet weather. University research indicates products within a herbicide class may vary in their degree of crop selectivity. The potential for herbicide interaction may also be impacted by the labeled herbicide rate used and the method or timin of anolication.
- Crop Response Warning. With this hybrid in field observations and/or research, crop injury has occurred with this herhicide.

Insufficient Data. Additional testing is needed to evaluate this hybrid.

Always read and follow all label instructions and precautions.

DuPont Pioneer makes no warranty regarding the herbicide crop response information in this guide.

16 AMIDE (Chloroacetamide and Others) tested was Harness. This family also includes Surpass, Dual II Magnum, Outlook, Define, Lasso, Topnotch, Degree, Ramrod, DuPontTM Cinch® and others in pre-packaged mixes.

17 BENZOIC ACID (Synthetic Auxins) tested was Banvel or Clarity. The Phenoxy family includes 2.4-D. The rating represents these products and others in pre-packaged mixes. Products may exhibit greater early season stalk breakage when Benzoic Acid or Phenoxy herbicides are applied prior to a significant windstorm.

18 ISOXAZOLE (4-HPPD Inhibitors) tested was Balance Pro. The herbicide prevents the biosynthesis of a photosynthetic pigment (carotenoid). The carotenoid pigment prevents the degradation of chlorophyll. Susceptible plant will turn white and chloropic

19 SU (sulfonylureas, ALS Inhibitors) tested was Option, unsafened DuPontTM Basis Gold®, Resolve® or DuPontTM Steadfast®. This family also includes DuPontTM Accent®, DuPontTM Basis®, Beacon, Permit, Elim, and others in pre-packaged mixes. A similar family called sulfonanilides includes Python. CAUTION: Some sulfonylurea products have label restrictions on products with maturity shorter than 88 CRM. Review the herbicide label before applying any sulfonylurea product to products less than 88 CRM.

Ratings in this guide based on data collected through 2013 harvest.

Basis Gold  $\! @ \!$  is a restricted-use pesticide

All products are trademarks of their manufacturer.

### **Soybean Footnotes**

"NEW product.

 $^{\star\star\star}$  All Pioneer products are varieties unless designated with LL, in which case some are brands.

IMPORTANT: Product responses are variable and subject to any number of environmental, disease and pest pressures. Please use this information as only part of your product positioning decision. Individual results may vary.

Trait ratings provide key information useful in selection and management of Pioneer® brand products in your area. Scores are based on testing through 2013 harvest and were the latest available at time of printing. Some scores may change after 2014 harvest. Information and ratings are based on average performance across area of adaptation under normal conditions, over a wide range of both climate and soil types, and may not predict future results. Refer to HYPERLINK "https://www.pioneer.com/home/site/us/products/soybean/www.pioneer.com" www.pioneer.com or contact a Pioneer sales professional for the latest and most complete listing of traits and scores for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions.

NUMERIC RATINGS: 9 = Excellent; 1 = Poor; Blank = Insufficient Data or variety not tested for that particular trait.

1 HERBICIDE RESISTANCE: Always follow grain marketing, stewardship practices and pesticide label directions.

Varieties with the original Roundup Ready® trait (RR) and the Genuity® Roundup Ready 2 Yield® (RR2Y) trait
contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides.

Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Genuity®, Roundup®,
Roundup Ready® and Roundup Ready 2 Yield® are registered trademarks of Monsanto Technology LLC used under
license. Individual results may vary, and performance may vary from location to location and from year to year. This

result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary.

Growers should evaluate data from multiple locations and years whenever possible.

2 RELATIVE MATURITY: Shows the relative maturity group rating, with the first digit representing the general maturity group, and the second digit showing relative maturity within the group on a scale of 0 to 9, with 0 early and 9 late. For example, a soybean product with a relative maturity rating of 17 would be a mid-late product in Groun 1 maturity.

3 FIELD EMERGENCE: Rating based on deep planting at sub-optimal temperatures. 7-9 = Excellent; 4-6 = Average; 1-3 = Below Average

4 HYPOCOTYL LENGTH: Ratings based on relative length of hypocotyls, which is the portion of the seedling between the cotyledons and the root. S = Short: M = Medium: L = Long

5 PHYTOPHTHORA RESISTANCE GENE-

(-) = No specific gene for resistance.

Rps 1c = Provides resistance to races 1-3, 6-11, 13, 15, 17, 21, 23, 24, 26, 28-30, 32, 34, 36.

Rps 1k = Provides resistance to races 1-11, 13-15, 17, 18, 21-24, 26, 36, 37,

6 PHYTOPHTHORA FIELD TOLERANCE: Products with high tolerance scores have demonstrated an ability to thrive in the presence of Phytophthora races to which they lack specific resistance. In some products, tolerance is expressed only after the early seedling growth stage, making such products susceptible to damping off during emergence and early seed growth.

7 WHITE MOLD: Scores based on DuPont Pioneer research observations of comparative white mold tolerance among various soybean products across multiple locations and years. All products are capable of developing white mold symptoms under severe infestations. To our knowledge, there are no totally resistant products in the industry. However, differences exist in the ability of products to tolerate white mold (i.e. the rate at which the infection develops and the extent of damage it causes). These scores reflect those differences.

8 CANOPY WIDTH: 9 = Extremely bushy; 1 = Very narrow

9 SHATTERING: 9 = Excellent tolerance to shattering; 1 = Poor tolerance to shattering

10 PLANT HEIGHT FOR MATURITY: 9 = Tall; 1 = Short

11 SEED SIZE RANGE: Expressed in seeds per pound under normal growing conditions. Range is calculated over multiple years and locations. Since seed size may vary by growing season and region, check the "seeds/pound" information printed on the bad.

12 FLOWER COLOUR: P = Purple; W = White

13 PUBESCENCE COLOUR: T = Tawny; G = Gray; L = Light tawny; M = Mixed

14 HILA COLOUR: BL = Black; BR = Brown; TN = Tan; G = Gray; IB = Imperfect black; BF = Buff; Y = Yellow (Clear); M = Mixed

15 POD COLOUR: BR = Brown; TN = Tan

### **Sunflowers Footnotes**

Trait ratings provide key information useful in selection and management of Pioneer® brand products in your area. Scores are based on period-of-years testing through 2013 harvest and were the latest available at time of printing. Some scores may change after 2014 harvest. Contact your Pioneer Hi-Bred sales representative before planting for the latest trait rating information.

IMPORTANT: Information and ratings are based on comparisons with other Pioneer brand products, not competitive products. Information and ratings are assigned by DuPont Pioneer Agronomists and Research Managers, based on average performance across area of adaptation under normal conditions, over a wide range of both climate and soil types, and may not predict future results. Product responses are variable and subject to any number of environmental, disease and pest pressures. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com/products or contact a Pioneer Hi-Bred Sales Representative for the latest and most complete listing of traits and scores for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions.

RATINGS: 9 = Excellent; 1 = Poor; Blank = Insufficient Data.

DISEASE PRECAUTION: Grower should balance hybrid yield potential, hybrid maturity and cultural practice against anticipated risk of a specific disease and need for resistance. In high disease risk conditions, consider planting hybrids with at least a rating of 6 or higher to help reduce risk. When hybrids with disease ratings of 1 to 5 are planted in conditions of high disease pressure, the grower assumes a higher level of risk. If conditions are severe, even hybrids rated as resistant can be adversely affected. Independent of yield reduction, diseases can predispose plants to secondary diseases such as stalk rots. This requires individual field and hybrid monitoring for stalk stability and timely harvest when warranted.

DISEASE RATINGS: 9-8 = Highly Resistant; 7-6 = Resistant; 5-4 = Moderately Resistant; 3-1 = Susceptible; Rlank = Insufficient Data

1 HERBICIDE SYSTEM: The DuPont™ ExpressSun® trait provides resistance to Tribenuron methyl. WARNING: The DuPont™ ExpressSun® trait will safeguard this hybrid ONLY against applications of Tribenuron methyl, when applied at labeled rates. The DuPont™ ExpressSun® trait WILL NOT safeguard this hybrid against applications of other herbicides which require a different herbicide resistance trait. Always read and follow herbicide label instructions prior to use. APPLICATIONS OF INCOMPATIBLE HERBICIDES TO THIS HYBRID COULD RESULT IN TOTAL CROPP INSS.

2 RM (RELATIVE MATURITY): With no industry standard for maturity ratings, comparing hybrid maturity and harvest moisture ratings between companies is usually difficult. Use the RM rating to compare Pioneer(R) hybrids of a similar maturity and harvest moisture.

3 EMERGENCE: Ratings taken when first true leaf is visible.

4 PLANT HEIGHT: Short stature is desirable. 9 = Short: 1 = Tall

5 STEM CURVATURE: 9 = Erect; 8 = Semi-Erect (preferred); 7 = Semi-Pendulous (preferred); 6 = Pendulous; 5 = Fully Pendulous

6 MIDGE SCORE: To our knowledge, there are no fully resistant hybrids in this industry. However, differences exist in the ability to tolerate insect pressure. These scores reflect those differences. Heavy midge pressure can cause extensive damage to any hybrid.

7 DOWNY MILDEW RACE RESISTANCE: Indicates downy mildew resistance to the races identified.

8 PCT OVER 13: Using a 13/64th screen, oilseed types are divided by kernel size. 9 = high percentage over 13/64; 1 = low percentage.

### **Alfalfa Footnotes**

\*\*All Pioneer products are varieties unless designated with Brand, in which case it is comprised of more than one Pioneer brand variety

Agronomic ratings based on period-of-years testing through 2013 harvest. Pest resistance, dormancy and winterhardiness ratings based on standard test protocols prescribed by the North American Alfalfa Improvement Conference (NAAIC). Ratings may change over additional years of data collection, or if NAAIC protocols change. Contact your Pioneer Hi-Bred sales representative before planting for the latest trait rating information.

IMPORTANT: Information and ratings are based on comparisons with other Pioneer® brand varieties, not competitive varieties. Information and ratings are assigned by DuPont Pioneer Agronomists and Research Managers, based on average performance across area of adaptation under normal conditions, over a wide range of both climate and soil types, and may not predict future results. Product responses are variable and subject to any number of environmental, disease and pest pressures. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com/products or contact a Pioneer Hi-Bred sales representative for the latest and most complete listing of traits and scores for each Pioneer brand product and for product placement and management suggestions specific to your operation and local conditions.

RATINGS: 9 = Outstanding; 1 = Poor; Blank = Insufficient Data.

DISEASE/PEST RESISTANCE KEY: HR = Highly Resistant; R = Resistant; MR = Moderately Resistant; LR = Low Resistance; S = Susceptible; Blank = Insufficient Data.

1 WINTERHARDINESS: EH = Extremely Hardy; VH = Very Hardy; H = Hardy; MH = Moderately Hardy; NH = Non-hardy; VNH = Very Non-hardy.

2 DISEASE RESISTANCE INDEX: DRI is a disease index based on the following pests: Bacterial wilt, Verticillium wilt, Fusarium wilt, Anthracnose, Phytophthora and Aphanomyces (Race 1) and Aphanomyces (Race 2). HR = 5 points; R = 4 points; MR = 3 points; LR = 2 points; S = 1 point. Highest possible DRI = 35 points.

3 STANDABILITY/LODGING RESISTANCE: Score based on standard test requirements where rating classes are assigned as R = Resistant, MR = Moderate Resistant and S = Susceptible.

### **Inoculants Footnotes**

IMPORTANT: Information and ratings are based on relative comparisons with other Sila-Bac® brand inoculants within each specific crop, not competitive products. Information and ratings are assigned by DuPont Pioneer Forage Additive Research, based on average performance across area of use under normal conditions, over a wide range of both environment and management conditions, and may not predict future results. Product responses are variable and subject to any number of environmental and management conditions. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com or contact a Pioneer Hi-Bred sales representative for your product positioning decision of traits and scores for each Sila-Bac brand product. Fermentation: Rate and extent of pH decline and the composition of fermentations acids occurring in silege. Bunklife: Relative heat development compared to ambient temperature. Bunklife considers both how quickly silage begins to heat and the amount of heat generated while remaining above ambient temperature. Fibre Digestbility: The digestbility of neutral detergent fibre (NDF) by the ruminant animal expressed as a percentage of the total NDF.

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® NuSun is a registered certification mark of the National Sunflower Association.

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### **OUR EXPERTS ARE GROWN LOCALLY.**

For the last 80 years, we've learned how to build our business by watching our customers build theirs. Like you, we believe in making progress by doing things the right way. Like you, we never sacrifice tomorrow for today. Like you, we're always thinking of new and better ways to do things. You may call it great agronomics, good business or family success.



### **Grower Testimonials**





# What our growers are saying about Pioneer® brand seed products

#### Canola

"On our farm near Milestone, SK, we grew Pioneer® hybrid canola 45H31 for the first time in 2013 and were very impressed. Pioneer® hybrid 45H31 was very easy to swath and set up well for harvest, and it was much easier to swath compared to some other products that we have grown recently in the InVigor® lineup. Pioneer® 45H31 also stood nice and the yield was decent in the 45 bu/ac range. Because of the standability and ease of harvest I will be growing Pioneer® hybrid canola 45H31 again next year."



KC Garratt, Milestone, SK

"I have grown Pioneer® brand seed products for over 10 years and have been very impressed by the level of service I receive from my Pioneer Hi-Bred Sales Rep - Philip Mansiere. I am very impressed with the extensive research that goes into producing the high performing canola hybrids that DuPont Pioneer provides, such as Pioneer® hybrid 45H29 canola. I have grown Pioneer® hybrid 45H29 for the last few years as it has been a consistently high yielding product on my farm. The plants on the Pioneer® hybrid 45H29 are always impressive under stress. It produces a lot consistently, so that is alright in my books!"

Florian Hagmann, The Milky Way Dairy, Birch Hills, SK 2013 Proving Ground™ Yield Challenge Winner

"We have grown Pioneer® hybrid 46H75 canola for the last 3 years and it has performed excellent on my farm. We have over 1000 acres of canola so if we can use a hybrid like 46H75 that stands nice and combines even better it makes our harvest easier. Pioneer® hybrid 46H75 yielded just as high as the InVigor® canola products on our farm with an average of 60 bu/ac in 2013. I will be growing Pioneer® hybrid 46H75 in the future not only for the great weed control with the Clearfield® production system and Ares™ but because of the consistently high yield."

Tim Devereaux, Devereaux Farms, Milestone, SK

"On our farm near Arborg, MB we have grown Pioneer® hybrid 45H29 canola for the last 3 years and have been very impressed. Pioneer® hybrid 45H29 stood very well and was easy to swath. Along with the superior standability the yield was very good averaging over the 50 bu/ac range last year so I have no reason to switch to another product. Another benefit with Pioneer® hybrid 45H29 is that the fields are very clean from the use of the Roundup Ready® system. We will be growing Pioneer® hybrid 45H29 canola again this year."

Ron Johnston, Arborg, MB

"Having had the opportunity to participate in the DuPont Pioneer Proving Ground<sup>TM</sup> plots in 2013 allowed me to experience growing Pioneer® hybrid canola 45H31. The hybrid stood fairly well and provided good harvestability and pretty good yield performance at 74 bu/acre. We will continue to grow Pioneer® hybrid 45H31 again this year and evaluate it as we go forward."

Darcy Sarafinchan, Lavoy, AB 2013 Proving Ground™ Yield Challenge Winner

#### **Soybeans**

"We planted Pioneer® 900Y61 soybeans in 2013 in Southeast Saskatchewan. We were very pleased with yield and harvestability in 2013. Grain cart load cell yields indicated 30+ bu/ac yield and they seemed to have a slight and noticeable yield advantage over a popular competitive variety that we planted on the same field."



Marcel van Staveren, JVM van Staveren Farms Inc., Griffin, SK

"We have grown Pioneer® brand corn, sunflowers and soybeans on our farm for over 30 years and they are always the top performing products each year. In 2013, I grew Pioneer® 900Y61 soybeans and they yielded 47 bu/ac and over 50 bu/ac last year. These soybeans performed excellent, came out of the ground very nice and were easy to thresh at harvest. We have completed side by side trials with Pioneer® brand soybeans over the last 10 years vs. other competitor soybeans and Pioneer® brand soybean varieties always come out on top. I will continue to grow Pioneer® brand soybeans due to the consistent product performance and great service from my Pioneer Hi-Bred sales rep."

Brent Oswald, Cottonwood Holsteins Ltd., Steinbach, MB 2013 Proving Ground™ Yield Challenge Winner (Corn)

#### Corn

"Our favourite varieties of grain corn on our farm are the Pioneer® brand 39D97 and 39D95 corn hybrids. They consistently outyield other varieties, over both dry and wet years. More recently the Pioneer® brand corn hybrids P7443R and P7632HR have proven to yield very well, while coming off the combine dryer, with exceptional higher bushel weights, and a pleasure to combine. Our Pioneer Hi-Bred Sales rep, Marc Hutlet, and his staff are very knowledgeable and have proven helpful to determine which varieties are best suited for our farm."



#### Edwin Froese, Frazer Farms, Grunthal, MB

"I have grown Pioneer® brand corn for over 15 years and they are always the highest yielding hybrids on my farm and provide the most consistent crop every year. Pioneer® brand corn always seems to be at the top of the yield scale each year with their new corn hybrids. In 2013, I grew the new Pioneer® brand corn hybrid P7632HR and it performed excellent yielding in the 165 bu/ac range. I will continue to grow Pioneer® corn hybrids due to the great and consistent product performance."

Lorne Loeppy, Rolling Prairie Farms, Niverville, MB

"We have grown the Pioneer® hybrid 39D95 corn for the last 3 years. Our primary use is corn silage for our dairy herd. In 2013, our corn silage average 187 T/acre at 37% dry matter. Not only did we receive outstanding yields but it had outstanding quality; testing 38% starch with an NEL of 1.67mcal/kg. This quality provides us with an exceptional energy source, saving money on our bottom line. Thank you DuPont Pioneer."

Steven Boerchers, Optimal Dairy, Beausejour, MB



### **Agronomy Team Contact Information**



### **DuPont Pioneer Agronomy and Technical Support Team**



Kristin Hacault Technical Lead White City, SK (306) 545-3390



Ellis Clayton Technical Product Manager Saskatoon, SK (306) 385-3013



**Glenda Clezy** Agronomy Trials Manager - Western Canada Saskatoon, SK (306) 385-3008

#### Alberta



**Doug Moisey** Area Agronomist Mallaig, AB (780) 645-9205



**Nicole Rasmussen** Area Agronomist Taber, AB (403) 331-3783

#### **Saskatchewan**



Breeanna Kelln Area Agronomist Duval, SK (306) 216-2272



Area Agronomist Watrous, SK (306) 946-4030



**Aaron Miller** Area Agronomist Warman, SK (306) 220-5686

#### Manitoba



Wilt Billing
Area Agronomist
Morden, MB (204) 822-1291



**Derwyn Hammond**Area Agronomist
Brandon, MB (204) 724-0275

### **Pioneer Hi-Bred Sales Representatives - Western Canada**

Our local sales representative network is committed to helping you grow a successful crop under your local conditions. **Contact your Pioneer Hi-Bred sales representative today!** 

### **Alberta**

#### **Craig Schmidt**

Barrhead (780) 674-4828

#### Dennis Nordhagen

Beaverlodge (780) 814-0789

#### **Brian Olfert**

Bezanson (780) 402-1355

### **Danny Nobbs**

Bonanza (780) 864-1289

#### Jill Feniak-Splane (1492918 AB Ltd)

Boyle / Smoky Lake (780) 689-3386

#### Gordon Frank

Brooks (403) 362-7299

### Maureen Black

Brownfield (403) 578-8185

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#### Cova Agrology

Drumheller (403) 823-0181

#### ReNew Ag

Fairview (780) 835-4356

#### Rob Wieler

Fort Vermilion (780) 927-4255

### David Sammons

Gleichen (403) 934-0940

### L and L Campbell Farms Ltd.

Grimshaw (780) 618-5220

### Smoky Seed Company Ltd.

Guy (780) 837-1334

### **Kelsey Solick**

Halkirk (403) 323-0315

#### E&A Land and Cattle Ltd.

Hayter (780) 753-6666

#### **Brianne Brault**

High Prairie (780) 536-7199

#### All In Farm Services Ltd.

Kitscoty (780) 847-2022

#### Ag-Vise Ltd.

Lacombe (403) 352-0586

#### Roger Andreiuk

Leduc / Calmar (780) 913-7463

#### **Next Generation Seeds Ltd.**

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#### **Clynton Butz**

Nampa (780) 625-1544

#### **Diadem Ag Enterprises**

Nanton (403) 646-5839

#### Ellis Agriculture Ltd.

Olds (403) 994-0292

#### Accur Aq

Ponoka (403) 588-4689

#### **Koester Ag Ventures**

Rockyford (403) 901-3560

#### Schoorlemmer Seeds Ltd.

Rycroft (780) 222-8689

#### Crop Care Ag Consulting Ltd.

Sexsmith (780) 518-9868

#### **Jason Tolsma**

Spruce Grove / Stony Plain

(780) 446-1082

#### Myron Zabolotniuk

St. Albert / Morinville (780) 915-6920

#### **Gerald Fodchuk**

St. Brides (780) 645-3720

### St. Paul Seed Cleaning Assoc.

St. Paul (780) 645-3939

### North Point Agronomy Ltd.

Star (780) 961-2981

#### Lee Van Ringen

Stettler (403) 741-9067

#### **Taber Home and Farm Centre**

Taber (403) 223-8948

### **Chris and Holly Drader**

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Torrington (403) 443-0357

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### JSK Sales & Service Ltd.

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### Dalton Seed Farm Inc.

Wainwright (780) 842-2361

### Wainwright (587) 281-5186

Pittman Agronomy Ltd. Warner (403) 642-7693

### Jacob Boychuk

**BJP Agronomy** 

Waskatenau / Thorhild (780) 656-6333

### **British Columbia**

### Ritchie Smith Feeds Inc.

Abbotsford (604) 859-7128

### Interior Seed and Fertilizer Ltd.

Cranbrook (250) 426-5347

### **Sales Contact Information**



Monty Brody

Fort Saint John (250) 793-0790

**Sure Crop Feeds** 

Grindrod (250) 838-6855

S & S Seed Corp.

Rolla (250) 219-1778

Manitoba

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Steve Beaumont

Brandon (204) 573-0455

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**Sloane AgriVentures** 

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**Grea Trewin** 

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Hamiota (204) 764-2844

**HB** - Agriseed

Killarney (204) 523-7464

**David Boechers** 

Laurier / St. Rose (204) 647-0634

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Letellier (204) 737-2605

Keen Seeds Ltd.

Manitou (204) 242-4074

Scott Sambrook

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Chris and Darryl Kulbacki

Neepawa (204) 476-6449

Derek Erb

Oak Bluff (204) 792-6744

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Portage la Prairie (204) 871-0767

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**Jeremy Andres** 

Roblin (204) 937-3833

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Steinbach (204) 422-5805

**Growth Science Potential Services Ltd.** 

Swan River (204) 734-4672

Barry Hutchison (5204259 Manitoba Ltd.)

Virden (204) 851-6157

C M Agra Limited

Winnipeg (204) 633-6010

Saskatchewan

**Matthew Paysen** 

Avonlea / Ogema (306) 868-7791

DJF Holdings Ltd.

Beechy (306) 859-7885

Biggar Grain Sampling

Biggar (306) 948-2953

**Kun Aq Services** 

Bruno (306) 369-2728

Jim Bletsky

Canora (306) 563-8888

Stewart Ranches Ltd.

Carnduff / Redvers (306) 482-7472

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Carrot River (306) 401-8900

**Kelsev Ag Ventures** 

Choiceland (306) 769-7887

McCarthy Seed Farm Ltd.

Corning (306) 224-4848

McPeek Ag Consulting Ltd. Coronach (306) 690-4142

Colin Schulhauser

Cupar (306) 726-7098

Stone Farms Inc.

Davidson (306) 567-8528

**David Blais** 

Delmas (306) 893-7186

DC Agro Ltd.

Dodsland (306) 932-4626

Jamie Blacklock

Dundurn (306) 370-0495

Camcar Enterprises Ltd.

Edam (306) 441-9772

Mantei Seed Cleaning Ltd.

Estevan (306) 634-1294

**Jeff Kuntz** 

Gerald (306) 745-9170

Hanmer Seeds Ltd.

Govan (306) 484-2261

**BG** Ag Ventures Ltd.

Grenfell (306) 541-3213

**Murray Chutskoff** 

Kamsack (306) 542-7205

**Bryce Mandziak** 

Kelliher (306) 795-7510

**Brad Sauter** 

Kindersley (306) 460-4903

Sproat Agro Ltd.

Kipling (306) 550-2247

Gerwing Ag Ventures Inc.

Lake Lenore (306) 368-2622

**Andrew Monchuk** 

Lanigan (306) 365-7404

Look's Custom Spraying Ltd. Lloydminster (306) 825-0673

Tennille Wakefield

Maidstone (306) 903-7333

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**Christopher Lincoln** 

Maryfield (306) 646-2161

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Meadow Lake / St. Walburg

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Wyett Meyers Meath Park (306) 940-7547

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Philip Mansiere Enterprises Ltd.

Meskanaw (306) 864-2914

Annex Agro

Milestone (306) 540-5858

**RA Garland Agro Inc.** 

Moose Jaw (306) 693-7810

**Skully Ag Corp** 

Moosomin (306) 435-9083

**Dale & Barry Hicks** 

Mossbank (306) 354-2567

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Nipawin (306) 862-7798 Nachtegaele Agri Services

North Battleford (306) 445-3347

The Rack Petroleum

Outlook (306) 867-4064

**ESH Contracting** 

Paradise Hill (306) 344-5334 Trov Moroz

Pelly (306) 594-7679

Scott Klemp Pense (306) 345-2330

**Mahussier Aq Ventures** 

Porcupine Plain (306) 813-7799

Preeceville (306) 547-3411

**Corwin Tonn** 

**Arrow Crop Management** Regina (306) 520-8202

RisRock Ag Services Inc.

Rockhaven (306) 398-3775

Adam Littman Saltcoats (306) 744-7708

Gro-Tech Ag Solutions Ltd.

Saskatoon (306) 230-2552

**Gary Sollid** Saskatoon (306) 321-2755

Sebulsky Farms Inc. Sheho (306) 269-8050

Cookson Ag Services Ltd.

Shellbrook (306) 747-2685 **Chris Beaudry** 

Spaulding (306) 874-8194

Red Sky Seed & Supply

Swift Current (306) 774-9920

Tramping Lake (306) 937-3844

Meridian Ventures Inc.

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Unity (306) 228-3157

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Unity (306) 228-3188 Ardell Ag Corp.

Vanscoy (306) 668-4415

Kenzie Seeds

Wadena (306) 338-3840

Wakaw (306) 229-8588

Ryan Mansiere Enterprises Ltd.

Cam Stokke

Watrous (306) 946-2804

W M Hicks Farms Ltd. Watrous (306) 946-8151

Quantum Agrology Services Inc. Weyburn (306) 891-9757

Rod Sveinbjornson Wynyard (306) 554-2918

Super Seed Yellow Grass (306) 465-2727

Rob & Tracey Bletsky Seeds Inc. Yorkton (306) 621-6227

Tisdale (306) 873-8892 Agricultural Direct Sales Ltd.

## Staying Connected With DuPont Pioneer:

Whether you're in the field, the office or on the road, you have year-round access to the crop management resources you need at **www.pioneer.com**.

This information is also available on our mobile site optimized for all smartphones. Simply type **www.pioneer.com** into your mobile browser.

### DuPont Pioneer now has FREE Applications available through the App Store on iTunes®





#### **Canola Seed Rate Calculator**

(Available for iPad®, available on iPhone® in 2014)

The Pioneer Canola Seed Rate Calculator can easily estimate canola seeding rates and final stand. It will help you calculate your target seeding rate in pounds per acre and allow you to make adjustments for seed size, germination, survivability and row spacing.



### **Planting Rate Estimator**

(Available for iPhone, iPod® touch, and iPad. Requires iOS 5.0 or later)

The Pioneer Planting Rate Estimator allows users to examine historical yield response curves to help estimate an optimum planting rate for Pioneer® Brand Corn Products.



#### **Plantability Calculator**

(Available for iPhone, iPod touch, and iPad. Requires iOS 5.0 or later)

The Pioneer Planting Rate Estimator makes it easy to examine historical yield response curves to help estimate an optimum planting rate for Pioneer® Brand Corn Products.



#### **Inoculant Value Calculator**

#### (Available for iPad. Requires iOS 6.0 or later)

The Pioneer Inoculant Value Calculator will assist you with estimating the value of Pioneer® brand inoculants for your farm. The Inoculant Value Calculator (IVC) will help you to evaluate benefits of reduced shrink, improved bunklife, reduced feed inputs, feed cost savings/cow/day and total added value from investment.



#### **Encirca<sup>SM</sup> View**

### (Available for iPad, iPhone and Android® devices through Google play)

Makes it easy to record, organize, and share crop observations. Using a convenient mobile app, your notes are automatically geo-referenced, so you can pinpoint improvements and layer information field by field.

