



Pioneer Canola What's Coming?



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Herbicide Platforms Available thru Pioneer



Pioneer Protector® Brand canola hybrid portfolio has the most diverse canola portfolio available in the market today!

Weed Resistance management is strength within our portfolio with high yields, consistent performance, and Pioneer Protector® traits being available within all herbicide systems.



COMING SOON -



What is Optimum® GLY?



- Corteva’s proprietary glyphosate tolerance trait
 - Improve crop safety
 - Excellent weed control system
 - Greater application flexibility

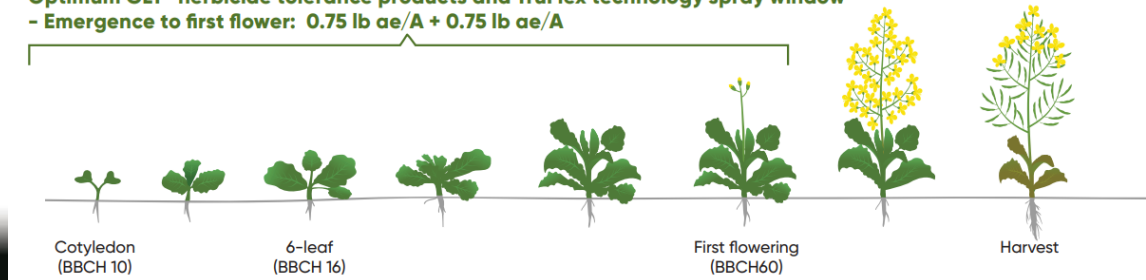
Table 1. Comparison of glyphosate labeled timing and rates on the three glyphosate-tolerant technologies.

Stage	Roundup Ready® canola	TruFlex™ technology	Optimum® GLY herbicide tolerance trait
Emergence – 6 leaf	Durango® DMA® @ 12 oz/A (0.38 lb ae/A) as two applications OR 18 oz/A (0.56 lb ae/A) as single application	Durango DMA @ 48 oz/A (1.5 lb ae/A) for a single application	Durango DMA @ 48 oz/A (1.5 lb ae/A) for a single application
Emergence – First flower	N/A	Durango DMA @ 24 oz/A (0.75 lb ae/A) for two applications	Durango DMA @ 24 oz/A (0.75 lb ae/A) for two applications



Optimum® GLY herbicide tolerance products and TruFlex™ technology spray window
 - Emergence to 6 leaf: Up to 1.5 lb ae/A

Optimum GLY® herbicide tolerance products and TruFlex technology spray window
 - Emergence to first flower: 0.75 lb ae/A + 0.75 lb ae/A





Pioneer Protector® Sclerotinia



Sclerotinia susceptible and non-susceptible



Non-resistant 55% infection



Sclerotinia resistant 13% infection

Photo, courtesy of Pioneer® Canada, showing infected stems ripened prematurely.

Leading the Industry in Sclerotinia Resistance

- Corteva Agriscience developed and commercialized the first Sclerotinia resistance hybrid in 2008.

Benefits of Seeding Canola with Pioneer Protector® Sclerotinia Trait

- Reduction in Incidence by over 60%
- Peace of Mind that provides increased flexibility and insurance when timing fungicide applications.
- Convenience of Sclerotinia protection that is planted with the seed.
- Season-Long Control of an in-plant trait that provides protection regardless of weather patterns throughout the entire growing season.
- Management tool to help manage risk of Sclerotinia infection over large acres.

Products available with Pioneer Protector® Sclerotinia trait packages:



Pod Shatter Tolerance – Rating System



- Pioneer hybrids will be scored on a 1-9 scale indicating their **relative** ability to reduce pod shatter.
- The score reflects the expected probability that pods will not shatter under normal, timely harvest conditions.
- This data is collected from multiple sites over multiple years in trials specifically designed to induce shatter and trials that shatter naturally.
- No hybrid is shatter-proof under all environment or management conditions and shatter-proof does not exist otherwise grower would not be able to combine the product.
- 1 to 9 scale
 - 1 = 100% Seed Loss
 - 9 = 0% Seed Loss

Hybrid	Herbicide Tolerant Trait	Pod Shatter Score
45M35	Round-up Ready	7
45CM39	Round-up Ready	7
P501L	Liberty-Link	4
P505MSL	Liberty-Link	7
P506ML	Liberty-Link	6
P612L	Liberty-Link	7
P516L	Liberty-Link	6
P508MCL	Clearfield	7
P514CL	Clearfield	6



"NEW" P516L



- ❑ Pod Shatter Score 6, improved shatter tolerance over P506ML.
- ❑ Improved verticillium stripe score (6).
- ❑ New Source (CR6) for Clubroot Resistance
- ❑ Expected to be a replacement for P506ML.

* 2 YEAR IMPACT DATA & PKP (Western Canada & US) – Compiled on 11/14/22

Pioneer® Hybrid/ Brand	Comp Brand	Comp Hybrid	#Cmp	Yld Adv (lb./a)	Yld %Wins
P516L	Pioneer	P505MSL	113	25	52%
	Pioneer	P506ML	99	60	55%
	Pioneer	P612L	110	0	53%
	InVigor	L345PC	45	-85	36%



Pioneer® Hybrid/ Brand	Comp Brand	Comp Hybrid	#Cmp	Yld Adv (lb/a)	Yld %Wins
P501L	Pioneer	P505MSL	285	-45	38%
	Pioneer	P506ML	303	-30	41%
	Pioneer	P516L	81	-75	35%
P505MSL	Pioneer	P506ML	351	10	48%
	Pioneer	P612L	251	-5	51%
	Pioneer	P516L	113	-25	47%
	<u>InVigor</u>	L343PC	5	55	60%
	<u>InVigor</u>	L345PC	176	-95	38%
P506ML	Pioneer	P505MSL	351	-10	50%
	Pioneer	P612L	230	-25	48%
	Pioneer	P516L	99	-60	43%
	<u>InVigor</u>	L343PC	5	200	80%
	<u>InVigor</u>	L345PC	169	-100	36%
P612L	Pioneer	P505MSL	251	5	49%
	Pioneer	P506ML	230	25	50%
	Pioneer	P516L	110	0	47%
	<u>InVigor</u>	L357P	13	20	46%
	<u>InVigor</u>	L345PC	106	-80	31%
P516L	Pioneer	P505MSL	113	25	52%
	Pioneer	P506ML	99	60	55%
	Pioneer	P612L	110	0	53%
	<u>InVigor</u>	L345PC	45	-85	36%



PIONEER® LIBERTY-LINK CANOLA PRODUCTS 2020 - 2022 Comparison Plot Results for Western Canada & US

(Information from 11/14/22 includes PKP & IMPACT)



2022 –Agronomic Issues in Canola

- FLEA BEETLES!! - Continue to be a Problem...
- Pod Drop continues to be an issue when products left too long in the field.
- Pod Shatter incidence was down for 2022 season even with high winds.
- **Verticillium Stripe** and **Blackleg** incidences increased causing major late season lodging and standability issues!!
 - Over 20 samples sent into the Corteva Diagnostics Lab in 2022. All came back positive for Verticillium!



Root cross-section of plants prior to harvest. Verticillium stripe (left), blackleg (middle), and healthy plant (right).



- It is believed that Early season infections caused the major standability and yield losses.
- Later season infections don't usually cause major issues in canola.
- Soil borne fungal disease so we will have to use genetics to combat this disease.



2022 Plot Results:



PLOT NAME	LOCATION
Horizon Ag Plot	Rugby, ND
PLANTING DATE	HARVEST DATE
5/11/22	9/4/22

- Planted @ 5 lbs/A
- Some Pod-Shatter visible on P506ML
- Straight cut @ harvest

ENTRY #	BRAND	PRODUCT	YIELD RANK	MOISTURE	YIELD (LB/A)	YIELD (BU/A)
1	InVigor	L345PC	3	5.9%	1905	38.1
2	Pioneer	P505MSL	4	6.0%	1900	38.0
3	Pioneer	P506ML	2	8.1%	1965	39.3
4	Pioneer	P612L	1	6.3%	2000	40.0
5	InVigor	L233P	5	9.0%	1895	37.9

PLOT NAME	LOCATION
Pederson Plot	Rolette, ND
PLANTING DATE	HARVEST DATE
5/25/2022	9/5/2022

- Planted @ 4.5 lbs/A
- Some Pod-Shatter visible on P501L & P506ML
- Straight cut @ harvest

ENTRY #	BRAND	PRODUCT	YIELD RANK	MOISTURE	YIELD (LB/A)	YIELD (BU/A)
1	Pioneer	P501L	5	8.3%	2360	47.2
2	Pioneer	P505MSL	4	8.5%	2635	52.7
3	Pioneer	P506ML	3	8.4%	2695	53.9
4	Pioneer	P612L	1	9.4%	3040	60.8
5	Pioneer	"NEW" P516L	2	9.0%	2770	55.4

2022 Plot Results:



PLOT NAME	LOCATION
Muhs Plot	Langdon, ND
PLANTING DATE	HARVEST DATE
6/8/22	9/30/22

- Planted @ 5 lbs/A
- Some Pod-Shatter visible on P506ML & P501L
- Field was sprayed w/ Reglone and harvested on day 12
- Straight cut @ harvest

ENTRY #	BRAND	PRODUCT	YIELD RANK	MOISTURE	YIELD (LB/A)	YIELD (BU/A)
1	Pioneer	P501L	5	7.7	2480	49.6
2	Pioneer	P506ML	2	6.7	2755	55.1
3	Pioneer	P612L	1	6.5	2785	55.7
4	Pioneer	"NEW" P516L	4	6.4	2565	51.3
5	Pioneer	P505MSL	3	6.6	2580	51.6

PLOT NAME	LOCATION
Lakeview Plot	Rock Lake, ND
PLANTING DATE	HARVEST DATE
6/8/22	10/8/22

- Planted @ 5 lbs/A
- Pod-Shatter was visible.
- Field desiccated w/ Reglone and harvested 3.5 weeks after application – pod drop was present on all hybrids.
- Straight cut @ harvest

ENTRY #	BRAND	PRODUCT	YIELD RANK	MOISTURE	YIELD (LB/A)	YIELD (BU/A)
1	Pioneer	P501L	2	7.8	2260	45.2
2	Pioneer	P505MSL	5	7.6	1970	39.4
3	Pioneer	P506ML	4	7.8	2220	44.4
4	Pioneer	"NEW" P516L	3	7.1	2255	45.1
5	Pioneer	P612L	1	6.4	2440	48.8

2022 Plot Results:



PLOT NAME	LOCATION
Smith Farms	Walhalla, ND
PLANTING DATE	HARVEST DATE
05/23/2022	08/30/2022

ENTRY #	BRAND	PRODUCT	YIELD RANK	MOISTURE	YIELD (LB/A)
1	BASF InVigor	L345PC	1	8.6	2,670
2	Pioneer	P612L	4	7.8	2,605
3	Pioneer	P505MSL	6	8.7	2,485
4	BASF InVigor	L343PC	5	8.3	2,550
5	Pioneer	P506ML	2	9.8	2,635
6	DeKalb	DKTFL21SC	3	7.6	2,620

FIRST IMPRESSIONS ARE EVERYTHING.



Lumiderm™

INSECTICIDE SEED TREATMENT

Key Grower Benefits:

- Enhanced protection against crucifer and striped flea beetles
- Control of early season cutworms in canola
- Up to 35 days of protection through the critical stages of seedling growth
- Excellent early season seedling stand establishment, vigour and biomass
- Novel class of chemistry (Group 28) for resistance management

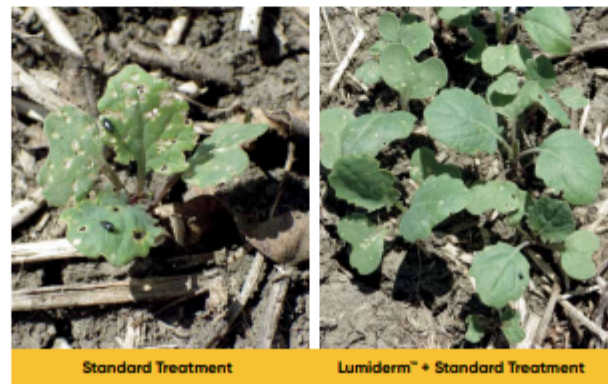
See the Lumiderm™ difference in yield increase.

- 78% occurrence of positive yield increase across Western Canada[†]
- 35% Less Flea Beetle Damage^{*}
- 1.4 bu/ac higher yield^{**}

See the Lumiderm™ difference in enhancing flea beetle protection

Crucifer and striped flea beetles can cause significant damage to canola crops. Lumiderm™ insecticide seed treatment offers enhanced protection against flea beetles, to help maximize your canola yield.

- Lumiderm™ provided a 35% reduction in flea beetle damage, 14–35 days after seeding, in 192 trials across Western Canada^{*}
- Growers have achieved a 1.4 bu/acre advantage over the standard treatment, across Western Canada^{**}



Source: Lumsden, SK, 22 Days After Seeding.

See the Lumiderm™ difference in cutworm control

Cutworms are a real problem in canola production. If you're not paying close attention to your fields, they can destroy a significant portion of your crop in a matter of days.

- Cutworms are very difficult to detect since they typically live underground during the day and feed at night
- During the first 35 days of seedling growth, Lumiderm™ helps protect your canola from cutworm feeding, which can enhance early season stand establishment and crop vigour



[†] Results from 55 large-scale, grower managed field trials across Western Canada in 2015.

^{*} Source: 192 Research & Development (replicated) trials and Grower Demo strip trials (2010–2015).

^{**} Source: Canola yield averaged across 137 Grower demonstration strips in Western Canada from 2013–2015.



TRUTH, BE TOLD.



What's Coming from Pioneer?

- Optimum Gly Trait Package to replace RR.
- New Base Fungicide Seed Treatment Package.
- Improved Shatter Tolerance over current hybrids.
- Additional hybrids with Sclerotinia Tolerance.
- Improved Verticillium Stripe Tolerance/Resistance.
- Continued Improved Clubroot Resistance Packages.



Any Questions? Thank You!

If Interested the best discounts on seed are available until this Friday, Dec. 9th.

Contact -



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