2025

Product Guide

CANOLA | BIOLOGICALS

From Your Friend In The Field

This is a real field. You're a real farmer. So that's where we keep our focus.

At BrettYoung, we focus on what's real, like good products, good information, and good local choice. It's how we've become Canada's Largest Independent Seed Company. Read on to see how we can help your farm.

BrettYoung™
DISTINCT BY DESIGN

CANADA BEST MANAGED COMPANIES
Platinum member

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Canola

The first in our new generation of LibertyLink® hybrids is here. BY 7204LL is our premier LibertyLink hybrid, equipped with Pod DefendR®, our shatter reduction trait, and Clubroot DefendR, next-generation clubroot resistance. With strong yield potential, excellent standability, and the LibertyLink herbicide system, you can have it all with BY 7204LL.

We will also have limited quantities available of our newest TruFlex hybrid - BY 6219TF. This mid-maturity hybrid has the Pod DefendR, Blackleg DefendR, and Clubroot DefendR traits, very good standability and is suited to all season zones.

Keeping Clubroot Under Control

Clubroot has been ravaging fields in parts of Western Canada and North Dakota for almost two decades now. The soil-borne disease causes galls to form on the roots of canola plants, eventually killing them prematurely. It's well documented in intensive clubroot zones that short canola rotations are a serious factor in aggravating the disease and creating conditions for it to thrive in, allowing new pathotypes to emerge.

The University of Alberta has identified over 43 clubroot pathotypes in Western Canada and North Dakota, of which 25 pathotypes are able to overcome some sources of clubroot resistance. Pathotype 3E and 8H are the most common in North Dakota with 3D being the first common resistance breaking pathotype to be identified.

Clubroot is spread easily through soil movement. Root galls release spores back into the soil where they remain dormant until susceptible plants are grown again. So, if you can't prevent it, what can you do?

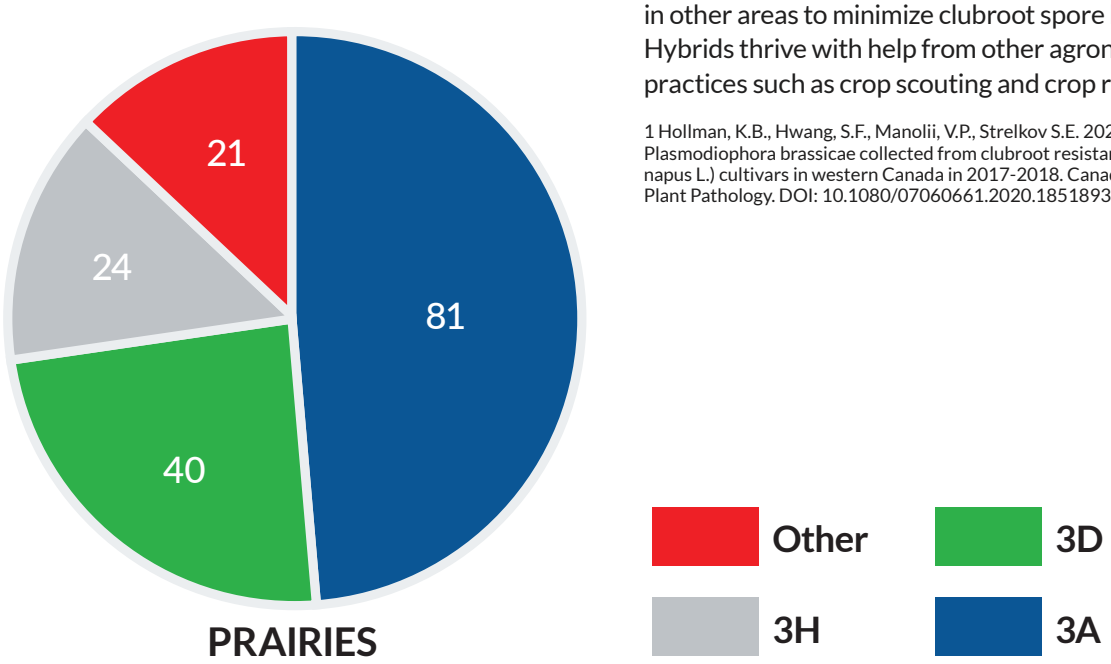


Fig. 1 Prevalence of Plasmodiophora brassicae pathotypes across the Canadian Prairies. Based on collections made from canola crops in 2017 and 2018. One hundred and sixty-six P. brassicae field isolates were tested, including 146 from Alberta, and 10 from each of Manitoba and Saskatchewan. Pathotype classifications are according to the Canadian Clubroot Differential set.

BrettYoung's Clubroot DefendR: Broad Resistance with a Multi-Genic Approach

Selection of a Clubroot DefendR hybrid is a strong step in the fight against clubroot. Along with the identification of new pathotypes, plant breeders have been identifying and incorporating new sources of resistance into their latest canola hybrids. This includes the stacking of multiple sources of clubroot resistance in hybrids like the new BY 7204LL and BY 6219TF, plus BY 6217TF. These hybrids have resistance to the older pathotypes that were first identified on the Prairies (2F, 3H, 5I, 6M, and 8N), and several recently discovered resistance-breaking pathotypes.

BrettYoung, through our primary canola genetics supplier, DL Seeds, continues to screen clubroot resistant hybrids against the most common and newly emerging clubroot pathotypes.

Choose BrettYoung's Clubroot DefendR hybrids for areas where resistance breakdown is suspected and in other areas to minimize clubroot spore buildup. Hybrids thrive with help from other agronomic practices such as crop scouting and crop rotation.

1 Hollman, K.B., Hwang, S.F., Manolii, V.P., Strelkov S.E. 2021. Pathotypes of Plasmodiophora brassicae collected from clubroot resistant canola (Brassica napus L.) cultivars in western Canada in 2017-2018. Canadian Journal of Plant Pathology. DOI: 10.1080/07060661.2020.1851893

DEFENDR™ Genetic Traits

DefendR is an easy-to-understand approach that highlights the superior harvest management and disease resistance genetics developed by our primary canola breeding partner, DL Seeds. The DefendR trait platform is gene-driven and can be an important piece of your overall canola management and production strategy. BrettYoung uses the DefendR designation to signal genetic tolerance to pod shatter and durable resistance to two prominent disease complexes affecting canola: clubroot and blackleg.

DefendR Traits

Trait	Minimum Resistance Level	Hybrids	
POD DEFENDR	A dependable level of shatter tolerance, well suited to straight-cut or delayed swathing harvest systems.	BY 7206LL BY 7204LL BY 7202LL	BY 6219TF BY 6217TF BY 6211TF
BLACKLEG DEFENDR™	Contains one or more major blackleg resistance genes that align with predominant blackleg race(s), combined with a strong R-rating for adult plant (quantitative) blackleg resistance.	BY 7206LL BY 6219TF BY 6217TF BY 6211TF	
CLUBROOT DEFENDR™	Stacked 1st and next-generation clubroot resistance genes that provide protection against a broad array of established patho-types like 3H and newer pathotypes such as 2B, 3A, and 3D.	BY 7206LL BY 7204LL BY 7202LL	BY 6219TF BY 6217TF

POD DEFENDR®

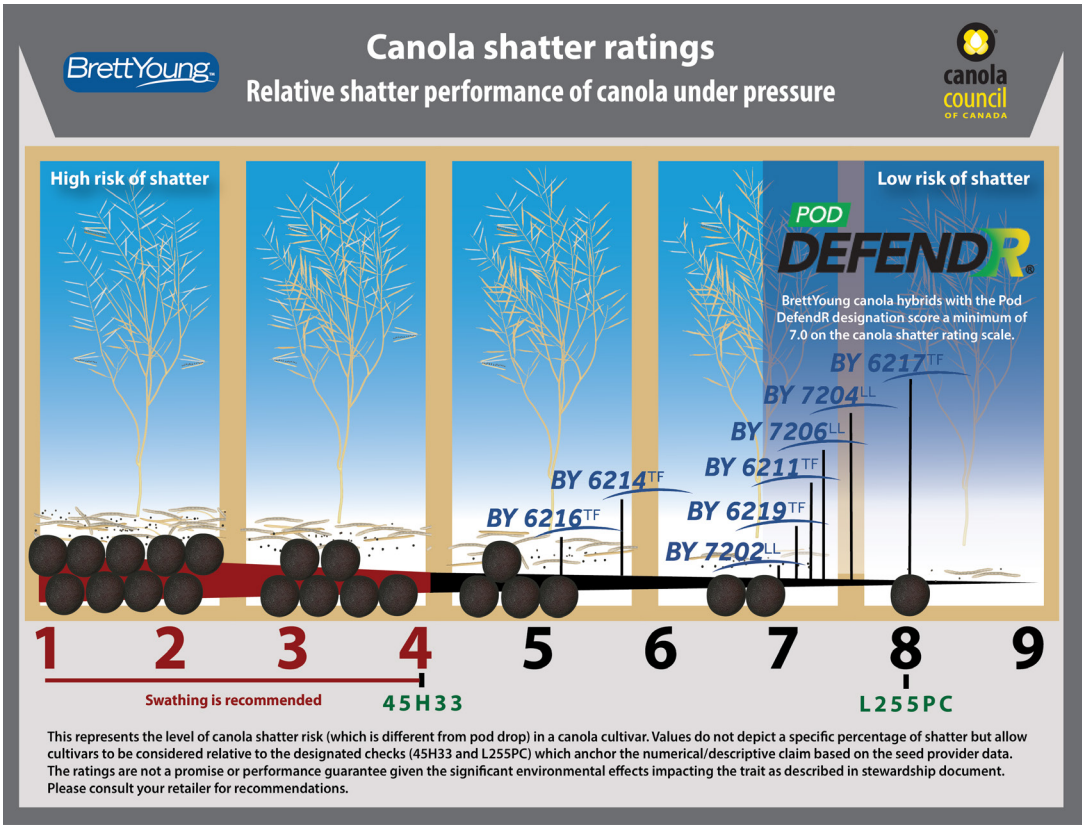
The introduction of pod shatter-resistant hybrids to canola growers several years ago led to a significant increase in adoption of both direct harvesting and delayed swathing of canola crops. BrettYoung canola growers can now enjoy this same flexibility because of our new pod shatter resistance trait, which delivers the dependable levels of shatter tolerance expected by today's growers.

Pod shattering, and the seed dispersion associated with it, is a survival mechanism found in nature and, despite decades of breeding and domestication, canola pods still have a natural tendency to split and open at maturity, with the goal of scattering seeds. Plant breeders and trait developers have been working to understand the physiology of canola pod ripening and pod shatter mechanisms.

DL Seeds, and its parent companies, have researched their own solutions, and what has emerged is an understanding of a complex pathway of gene interaction that controls pod valve function.

Much of this work has meant isolating specific genes from other brassica species and breeding them into canola to interrupt these shatter-inducing pathways. If you've ever grown mustard, you're aware of the substantial pod shatter resistance in that crop.

The result is Pod DefendR, a specific genetic trait that reduces pod tension built up at maturity and ultimately, the tendency for canola pods to split at the pod dehiscence zone (pod seam) that holds both sides of the pod (valves) together.



BrettYoung canola hybrid pod shatter resistance scores are developed through internal and breeder trial data.

BLACKLEG DEFENDR™

Blackleg is a disease that has made a resurgence in intensive canola production areas. Most agree that a combination of crop rotation, crop management (including regular field scouting), and proper hybrid selection are important factors to reducing the impact of this disease.

The Blackleg DefendR trait means the BrettYoung canola hybrid contains one or more major blackleg resistance genes that align with predominant blackleg race(s), and is combined with a strong R-rating for adult plant (quantitative) blackleg resistance. Blackleg DefendR hybrids achieve an enhanced level of resistance compared to competitor R-rated hybrids.

CLUBROOT DEFENDR™

Clubroot is an established pathogen in parts of North Dakota and the Prairies. Since 2013, when the first resistance-breaking pathotype was identified in Alberta, several new and more virulent pathotypes have evolved that can evade what is known as 1st generation (Mendel-type) resistance. The Clubroot DefendR trait indicates the canola hybrid has 1st generation resistance stacked with newer, next-generation clubroot resistance gene(s). This approach means resistance to the older, first-identified pathotypes, but also resistance to recently identified ones like 3A, 3D, and 3H. DL Seeds has a robust pipeline coupled to high performance hybrids that BrettYoung will continue to commercialize to support you in keeping one step ahead of this impactful disease. For the latest around the conversation on clubroot see the article on page five of this guide.

Managing Blackleg with Stubble Tests

Crop scouting is always the first step when managing blackleg. Assessing the level of incidence and severity of blackleg in the field can help growers to develop an estimate of blackleg risk for the future. There are two main management strategies once growers know what they're dealing with, one is crop rotation. A minimum two-year break between canola crops allows for crop residue housing the blackleg-causing pathogen to break down. A second way to manage the disease is by growing blackleg-resistant canola hybrids.

Fortunately, as blackleg advances, so do we. One of the biggest steps some of the industry has taken recently is labelling the major blackleg resistance genes found in their canola hybrids, something BrettYoung has been doing for years. This is important information as it can be used to rethink the approach towards effective blackleg management.

Canola hybrids use two sources of resistance — quantitative and qualitative (major gene). Quantitative resistance is a sort of "catch-all", meaning it has numerous genes working together to slow the infection of blackleg in your canola plants. Because quantitative resistance has so many genes working within it, it's more difficult to classify and harder to screen for. Qualitative resistance, on the other hand, are major genes that stop blackleg right at the site of infection. BrettYoung Regulatory & Agronomic Services Manager Justine Cornelsen said the industry's shift to labelling major genes and paired with quantitative resistance is a good thing as it provides more concrete protection for growers.

"With quantitative resistance, you have multiple genes working together to slow the pathogen down as it moves through the plant," said Cornelsen. "This minimizes the overall severity of the disease but doesn't eliminate it. Qualitative resistance is when a major gene matches an avirulence gene within the blackleg pathogen to initiate a defense response within the plant, that stops the pathogen at the site of infection." One of the most common avirulence genes found in fields across Western Canada where blackleg is present is AvrLm7, and with the Rlm7 major resistance gene recently deployed in Canada and northern USA, a few canola hybrids now have a new tool to defend with.

The blackleg pathogen is known as *Leptosphaeria maculans*. Blackleg stubble tests determine the pathogen genotype and phenotype, the phenotype being the important information for growers with blackleg concerns. The phenotype results will show growers the blackleg races present in their field, which is useful when making hybrid decisions for the field.

Identifying the Avirulence Profile

Leptosphaeria maculans races

Phenotype: AvrLm2-**4**-5-6-**7**-11 (25%)
AvrLm**4**-5-6-**7**-11 (50%)
AvrLm1-**4**-5-6-**7** (25%)

Corresponding R-genes to initiate defense response: **Rlm4**, Rlm5, Rlm6, & **Rlm7**

Figure 1. An example of stubble test results showing the identified races. Note Rlm5 and Rlm6 aren't yet in Canadian germplasm.

Growing a canola hybrid with blackleg resistance is the main way to combat the pathogen. When purchasing seed for the year, Cornelsen said it's imperative to choose a hybrid with at least one major gene that will match the avirulence genes present in your field — having just one match will ensure your crop is protected from blackleg.

"If you don't have that information, you're pretty well guessing," she said. "Stubble tests are the only way to know which *L. maculans* races are in your field, so they're the only way to know how which major genes you need."

In North Dakota the most prevalent avirulence genes are AvrLm4, AvrLm7, and AvrLm11. With the addition of the Rlm7 resistance gene to canola hybrids, Cornelsen said there's a good chance most growers with blackleg issues will have much stronger success in minimizing disease pressure if they're growing a hybrid with that major gene.

Like most pathogens, *L. maculans* changes with time to build tolerance towards resistance genes. Cornelsen noted the Rlm3 resistance gene is a good example of this — the gene has been used in Western Canada and North Dakota for so long, it's rarely seen in *L. maculans* races anymore or is suppressed by other genes.

BrettYoung currently has five canola hybrids with the Rlm7 resistance gene:

- BY 7206LL
- BY 7204LL
- BY 6219TF
- BY 6217TF
- BY 6216TF

BY 7206LL has the LepR2, Rlm1, and Rlm7 genes, BY 6217TF has both the Rlm3 and Rlm7 genes, while BY 6216TF, BY 6219TF, and BY 7204LL have just the Rlm7 gene. The quantitative resistance in each hybrid also helps slow the rate of infection from the few remaining races that don't include AvrLm7.

L. maculans phenotype	Major Resistance Genes	BrettYoung Hybrids to Utilize
AvrLm4-5-6-7-11	**Rlm4**, Rlm5, Rlm6, **Rlm7**, Rlm11	BY 7206LL, BY 7204LL, BY 6219TF, BY 6217TF, BY 6216TF
AvrLm2-3-5-9-S	Rlm2, **Rlm3**, Rlm5, Rlm9, **RlmS**	BY 7202LL, BY 6214TF, BY 6211TF, BY 5125CL

Selecting a BrettYoung canola hybrid based on common *L. maculans* races.

Consult the Canola Council of Canada's website (blackleg.ca) for the latest information on blackleg management.

References
Figure 1. Soomro W, Kutcher HR, Yu F, Hwang SF, Strelkov SE, Fernando WGD, McLaren D, Peng G. 2021. Race structure of Leptosphaeria maculans in western Canada between 2012 and 2014 and its influence on blackleg of canola. Can J Plant Path. 43: 480-493.

Canola root cross-section cuts to assess blackleg infection on a 0 (healthy) to 5 (severely infected) disease severity scale.

Canola Portfolio

Realize your yield potential with BrettYoung canola. BrettYoung has industry-leading hybrids in the TruFlex, LibertyLink, and Clearfield systems, sourcing the best technology and genetics to keep your operation profitable.

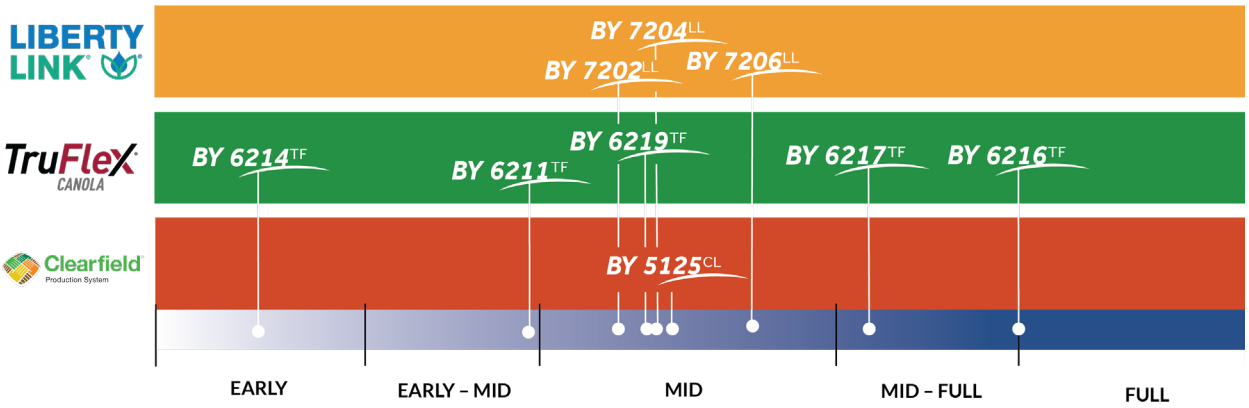
BrettYoung's premium canola genetics also carry the DefendR trait platform as part of an active disease and harvest management strategy. A variety of maturity and DefendR trait combinations will help you find the best canola hybrid fit for your farm.

For product performance information scan this QR code or visit brettyoung.ca/product-performance.

Variety	Herbicide System	Yield Rating[1]	Blackleg Rating	Blackleg Major Gene	Clubroot Rating	DefendR Disease Designation
NEW BY 7206LL	LIBERTY LINK	1	R – A, E_2, G	LepR2, Rlm1, Rlm7	R (Next-generation* resistance)	DOUBLE LAYERED DEFENDR BLACKLEG + CLUBROOT
NEW BY 7204LL	LIBERTY LINK	1	R – E_2	Rlm7	R (Next-generation* resistance)	CLUBROOT DEFENDR
NEW BY 7202LL	LIBERTY LINK	1	R – C	Rlm3	R (Next-generation* resistance)	CLUBROOT DEFENDR
NEW BY 6219TF	TruFlex CANOLA	1	R – E_2	Rlm7	R (Next generation* resistance)	DOUBLE LAYERED DEFENDR BLACKLEG + CLUBROOT
BY 6217TF	TruFlex CANOLA	1	R – CE_2	Rlm3, Rlm7	R (Next generation* resistance)	DOUBLE LAYERED DEFENDR BLACKLEG + CLUBROOT
BY 6211TF	TruFlex CANOLA	2	R – AG	Rlm3, RlmS	—	BLACKLEG DEFENDR
BY 5125CL	Clearfield Production System for Canola	2	R – C	Rlm3	R (1st generation** resistance)	—

Disease Management Rating: R = Resistant
[1] Yield and maturity ratings based on relative to check performance in co-op registration trials.
[2] Pod shatter tolerance rating. This is based on the Canola Council of Canada's shatter tolerance scale of 1 – 9. 1 = poor, 9 = excellent. Results may vary slightly on your farm due to environmental factors and management practices.

Canola Hybrid Maturities



Standability	Pod DefendR Rating	Maturity[1]
Excellent	DEFENDR 7.3[2]	Mid
Excellent	DEFENDR 7.5[2]	Mid
Excellent	DEFENDR 7.0[2]	Mid
Excellent	DEFENDR 7.1[2]	Mid
Excellent	DEFENDR 8.0[2]	Mid - Full
Very Good	DEFENDR 7.2[2]	Early - Mid
Excellent	—	Mid

Canola Seed Treatments

BrettYoung canola hybrids have a base treatment of Helix® Saltro® with optional add-on treatments of BUTEO® start and Fortenza®.

Pests Controlled by Seed Treatments	Base Treatment	With Optional Add-on Treatment	
	Helix Saltro	BUTEO start	BUTEO start + Fortenza
Pythium spp.	✓	✓	✓
Fusarium spp.	✓	✓	✓
Rhizoctonia spp.	✓	✓	✓
Seed-borne Blackleg	✓	✓	✓
Airborne Blackleg	✓	✓	✓
Flea Beetles	✓	✓	✓
Leaf Hoppers	✓	✓	✓
Enhanced Flea Beetle Control		✓	✓
Cutworms			✓

* Next-generation resistance includes pathotypes covered by 1st generation resistance plus resistance to newer pathotypes such as 3A, 3D, 3H, and other prevalent pathotypes.
** 1st generation resistance means resistant to pathotypes 2F, 3H, 5I, 6M, and 8N (these are equivalent to pathotypes 2, 3, 5, 6, 8 on the Williams' Differential set).

Canola Hybrids

NEW BY 7206LL

Unlock the Full Potential of Your Canola Crop with this Hybird — Engineered for Pod Shatter COntrol, Advanced Clubroot Defense, and Unbeatable Blackleg Resistance

- Pod DefendR shatter reduction technology
- Double-layered Clubroot and Blackleg DefendR traits
- A high-yielding mid-maturity hybrid

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
1	R – A, E_2, G	Rlm7	R (Next-generation* resistance)	Excellent	Mid	7.3

NEW BY 7204LL

The Future of Canola Hybrid Technology is Here: Consistent, High-Yield Performance in a Mid-Maturity Hybrid with Pod, Blackleg, and Clubroot DefendR Genetic Traits

- Pod DefendR — durable shatter resistance technology
- DefendR-rated next-generation clubroot protection
- Strong early season vigour and excellent standability

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
1	R – E_2	Rlm7	R (Next-generation* resistance)	Excellent	Mid	7.5

NEW BY 7202LL

Boost Your Canola Harvest. This Hybrid Features Pod DefendR Shatter Reduction and Cutting-Edge Clubroot Protection

- An earlier mid-maturity hybrid
- Pod DefendR shatter reduction
- Next-generation clubroot protection

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
1	R – C	Rlm3	R (Next-generation* resistance)	Excellent	Mid	7.0

Disease Management Rating: R = Resistant
[1] Yield and maturity ratings based on relative to check performance in co-op registration trials.
* Next-generation resistance includes pathotypes covered by 1st generation resistance plus resistance to newer pathotypes such as 3A, 3D, 3H, and other prevalent pathotypes.
** 1st generation resistance means resistant to pathotypes 2F, 3H, 5I, 6M, and 8N (these are equivalent to pathotypes 2, 3, 5, 6, 8 on the Williams' Differential set).

NEW BY 6219TF

POD DEFENDR | DOUBLE LAYERED DEFENDR BLACKLEG + CLUBROOT | TruFlex CANOLA | DL Seeds

BrettYoung's premier hybrid with Pod DefendR shatter resistance

- TruFlex canola hybrid equipped with the latest in herbicide trait technology
- DefendR-rated clubroot and Blackleg resistance
- Mid maturity suitable for all zones

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
1	R – E_2	Rlm7	R (Next-generation* resistance)	Excellent	Mid	7.1

BY 6217TF

POD DEFENDR | DOUBLE LAYERED DEFENDR BLACKLEG + CLUBROOT | TruFlex CANOLA | DL Seeds

Pod, Clubroot, and Blackleg DefendR Protection and Flexibility of the TruFlex Canola System

- Another BrettYoung canola hybrid with Pod DefendR — a shatter reduction trait
- DefendR-rated clubroot and blackleg resistance
- Mid to full maturity suitable for mid- and full-season zones
- TruFlex canola hybrid equipped with the latest in herbicide trait technology

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
1	R – CE_2	Rlm3, Rlm7	R (Next-generation* resistance)	Excellent	Mid - Full	8.0

BY 6211TF

POD DEFENDR | BLACKLEG DEFENDR | TruFlex CANOLA

New Level of Pod Shatter Resistance with Blackleg DefendR Protection

- Contains a genetic source of pod shatter resistance well suited to direct harvest and delayed swathing systems
- DefendR-rated multi-genic blackleg resistance
- Excellent yield potential with mid-season maturity

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
2	R – AG	Rlm3, RlmS	—	Very Good	Early - Mid	7.2

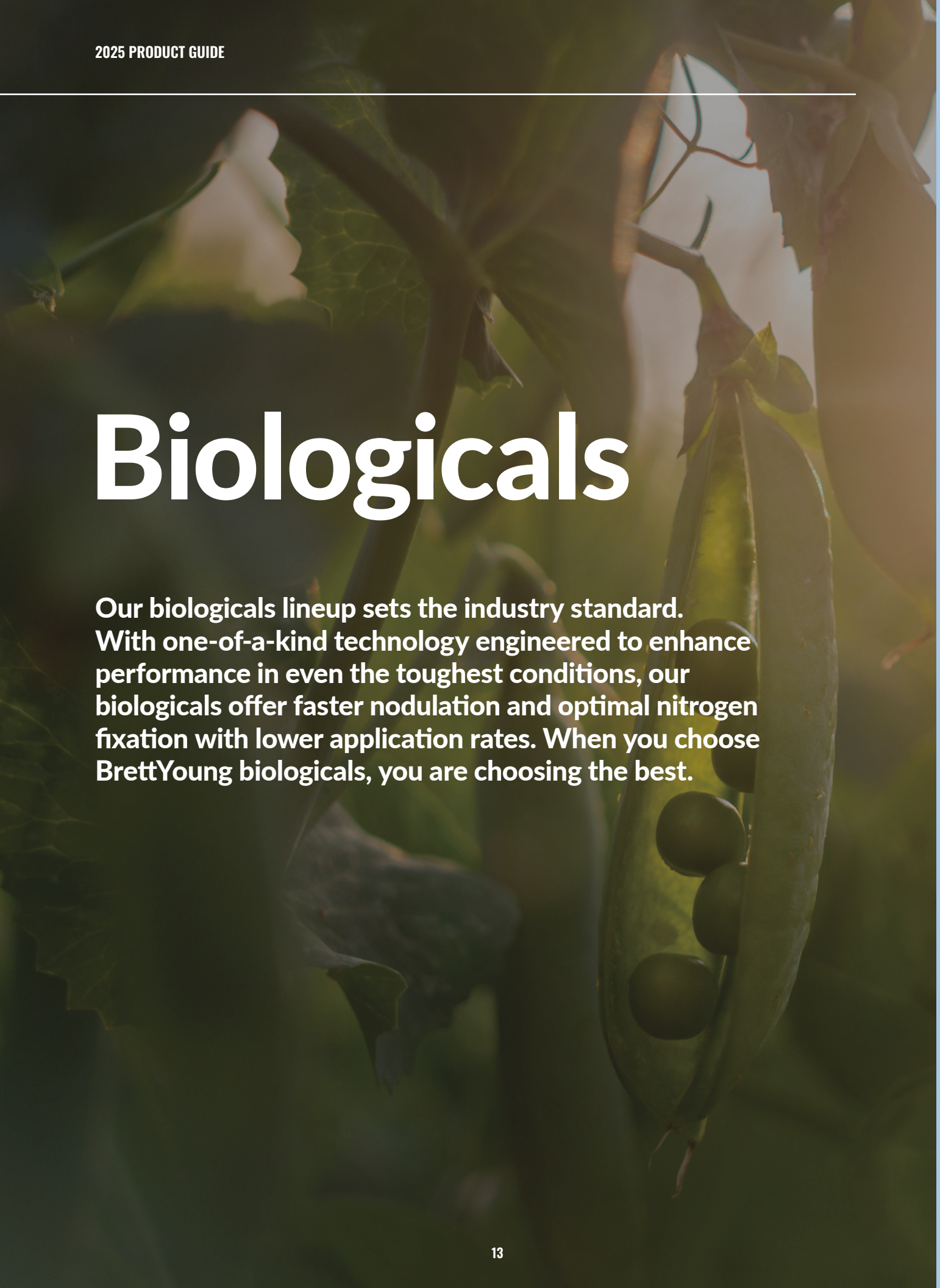
BY 5125CL

Clearfield Production System for Canola | DL Seeds

An Outstanding Yield Performer in the Clearfield® Segment

- 1st generation** clubroot protection
- Blackleg resistant
- Can be marketed under the Clearfield (non-GMO) canola premium programs

Yield	Blackleg	Blackleg Major Gene	Clubroot	Standability	Maturity	Pod Shatter Tolerance Rating
2	R – C	Rlm3	R (1st generation** resistance)	Excellent	Mid	—



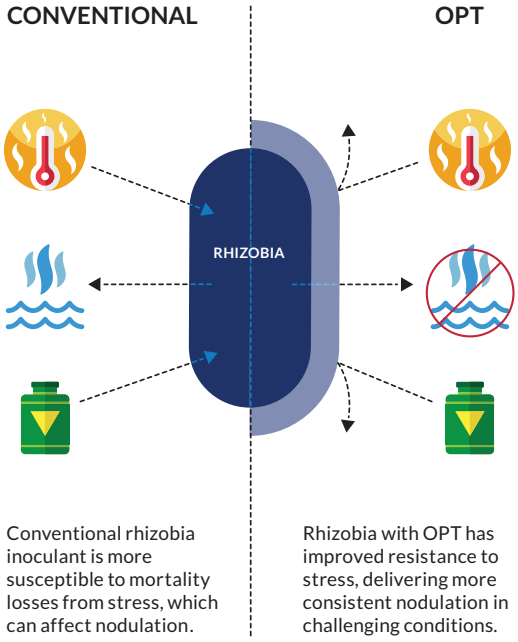
Biologicals

Our biologicals lineup sets the industry standard. With one-of-a-kind technology engineered to enhance performance in even the toughest conditions, our biologicals offer faster nodulation and optimal nitrogen fixation with lower application rates. When you choose BrettYoung biologicals, you are choosing the best.

Osmo Protector Technology (OPT)

Many of BrettYoung's inoculants come equipped with Osmo Protector Technology, which features high-performance bacteria with longer on-seed survival. Rhizobia with Osmo Protector Technology are better equipped to withstand our tough Prairie conditions and deliver excellent compatibility with many seed treatments.

Osmo Protector Technology strengthens the cell walls of rhizobial bacteria through a longer, stress-inducing manufacturing process. This enhances on-seed survival and performance in challenging environments including exposure to higher temperatures, low moisture soils, and chemical (seed treatment) stresses.



Conventional rhizobia inoculant is more susceptible to mortality losses from stress, which can affect nodulation.

Rhizobia with OPT has improved resistance to stress, delivering more consistent nodulation in challenging conditions.

Make the Switch to Liquid Inoculants

Osmium is BrettYoung's premier liquid inoculant, available for pea, lentil, and chickpea crops. Equipped with Osmo Protector Technology, Osmium strengthens the cell walls of rhizobial bacteria, resulting in tougher, high-performance bacteria with industry leading on-seed survival.

Liquid

✓ Longer On-Seed Life

BrettYoung's liquid inoculants have an on-seed life of up to 15 days, giving you maximum flexibility.

✓ More Cost Effective

Liquid inoculants cost less per acre than granular inoculants do, making them the more economical choice.

✓ Easier to Use

Liquid inoculants are easy to apply and accurately meter versus peat powder formulations.

Granular

✗ Difficult to Handle

Granular inoculants are bulkier than liquid and require more handling from start to finish.

✗ More Expensive Per Acre

Granular inoculants are more costly than liquid, costing growers more overall.

✗ More Effort to Use

Granular inoculants have to be augered or lifted into the air seeder rather than applied directly to the seed.

Seed Treatment Compatibility

Scan the QR code for the latest compatibility information on Osmium, Signum, and Launcher Liquid, our complete liquid inoculant lineup.

Bio-Inducer Technology

To accomplish nodulation, plant roots and rhizobia bacteria communicate using chemical signals. In turn, rhizobia respond with additional chemical signals (called nodulation determinants) initiating the nodulation process.

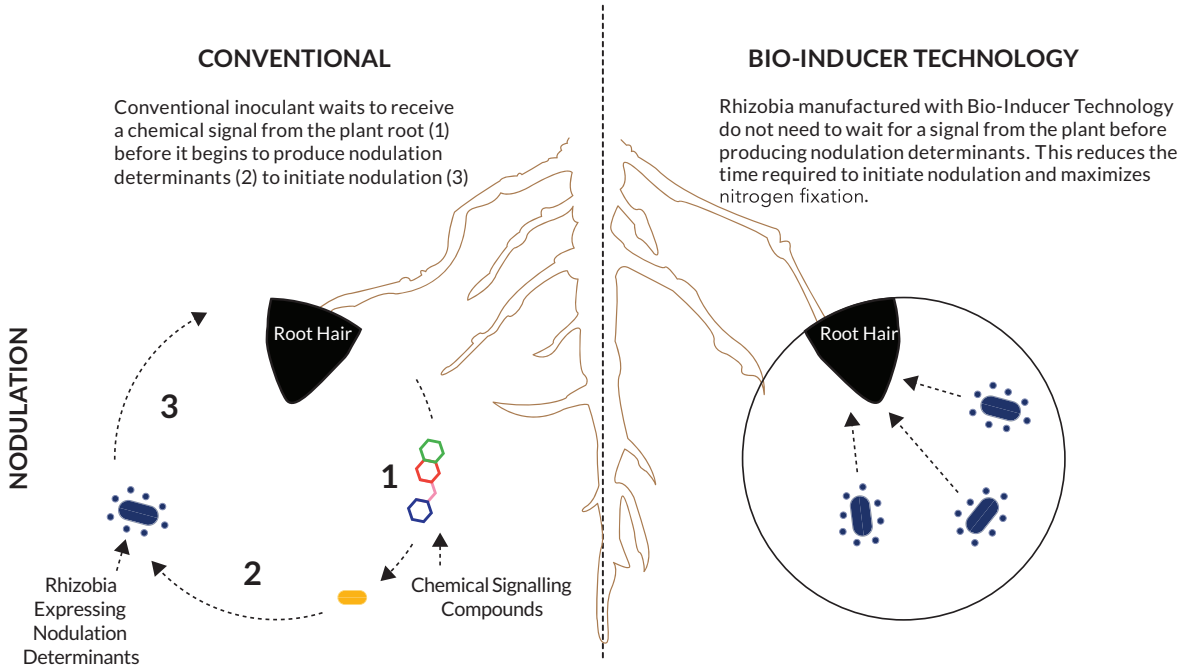
These nodulation determinants include:

- **Nod Factors** — Chemical compounds released by the rhizobia bacteria signaling the plant to initiate nodulation
- **Lipopolysaccharides (LPS)** — Long chain fatty acid molecules responsible for the development of the infection tube
- **Type Three Secretion System (T3SS)** — A protein structure used to transport substances between the cells of the rhizobia and the plant

Bio-Inducer Technology assists in the process by stimulating earlier production of specific nodulation determinants through introducing rhizobia to plant-based signaling compounds, called Bio-Inducer components, during the manufacturing process. These compounds mimic what plant roots release naturally in the soil, inducing the rhizobia to respond by releasing nodulation determinants, as if they were already in the presence of a receptive host.

The early presence of these nodulation determinants accelerates the nodulation process in the soil and improves nodulation on a plant's crown and primary roots, where nodules are most effective. This maximizes nitrogen fixation and yield potential, delivering more consistent performance under all conditions.

Signum® Soybean inoculants come equipped with Bio-Inducer Technology, which accelerates and improves nodulation. This not only maximizes nitrogen fixation but improves yield potential for your crop.



Signum® Bio-Inducer

Signum Soybean is an effective and convenient inoculant equipped with both Osmo Protector and Bio-Inducer Technology to promote quicker biological fixation of nitrogen, allowing soybean growers to maximize yields even in stressful growing conditions.

- High concentration
- Bio-inducers
- Enhanced performance in challenging environments
- Longer survival on-seed
- Convenient all-in-one liquid formulation

Formulation:	Liquid Suspension
Guaranteed Analysis:	*Bradyrhizobium japonicum* 1×10^{10} CFU/ml
Technology:	Bio-Inducer Technology, Osmo Protector Technology
Crops:	Soybean
Application:	On-Seed
Application Rate:	130 ml/100 kg, 2 fl. oz./100 lb
On-Seed Life:	Up to 120 days[1]
Package Size:	11.84 L (400 fl.oz.) – treats 400 units (20,000 lb); 1.18 L (40 fl. oz.) – treats 40 units (2,000 lb)

Launcher™ Liquid Soybean Inoculant

Launcher Soybean is an economical liquid inoculant for effective biological fixation of nitrogen for on-seed or in-furrow use.

- High concentration
- All-in-one liquid formulation

Formulation:	Liquid Suspension
Guaranteed Analysis:	*Bradyrhizobium japonicum* 4×10^{9}
Crop:	Soybean
Application:	On-Seed or In-Furrow
On-Seed Application Rate:	130ml/100kg, 2 fl. oz/100 lb
In-Furrow Application Rate:	5ml/100m, 0.5 fl. oz/1,000 ft
On-Seed Life:	Up to 4 days[1]
Package Size:	11.84 L (400 fl. oz.) – treats 400 units (20,000 lb); 1.18 L (40 fl. oz.) – treats 40 units (2,000 lb)

[1] **Visit brettyoung.ca/compatibility for seed treatment compatibility information**

Bio-Inducer Technology	*Included In Signum® Bio-Inducer	**Bio-Inducers** Accelerates initial, early communication between rhizobia and plant roots and triggers earlier nodulation for maximum nitrogen fixation.
Osmo Protector Technology	*Included In Signum® Bio-Inducer, Osmium® Osmo Protector	**Enhanced Performance in Challenging Environments** Osmo Protector Technology results in tougher bacteria that enhances performance in the field under adverse conditions. This includes high temperatures, low water availability, and chemical (seed treatment) stresses.

Pea / Lentil Osmium® Osmo Protector

Osmium Pea/Lentil is a convenient liquid inoculant featuring Osmo Protector Technology to provide pea and lentil growers with longer on-seed survival and enhances performance in challenging environments.

- Enhanced performance in challenging environments
- Longer survival on-seed
- Convenient all-in-one liquid formulation

Formulation:	Liquid Suspension
Guaranteed Analysis:	*Rhizobium leguminosarum bv. Viciae* 1 x 10^9 CFU/ml
Technology:	Osmo Protector Technology
Crops:	Pea, Lentil and Faba Bean
Application:	On-Seed
Application Rate:	200 ml/100 kg, 3 fl. oz./100 lb
On-Seed Life:	Up to 15 days[1]
Package Size:	2 x 5.45 L (2 x 184 fl. oz.) – treats 200 bu (12,000 lb)

Chickpea Osmium® Osmo Protector

Osmium Chickpea is an inoculant featuring Osmo Protector Technology that provides chickpea growers with a liquid formulation that has on-seed survival that outperforms all other peat and liquid inoculants and enhance performance in challenging environments.

- Enhanced performance in challenging environments
- Longer survival on-seed
- Convenient all-in-one liquid formulation

Formulation:	Liquid Suspension
Guaranteed Analysis:	*Mesorhizobium Ciceri* 1 x 10^9 CFU/ml
Technology:	Osmo Protector Technology
Crops:	Chickpea
Application:	On-Seed
Application Rate:	200 ml/100 kg, 3 fl. oz./100 lb
On-Seed Life:	Up to 15 days[1]
Package Size:	2 x 5.45 L (2 x 184 fl. oz.) – treats 200 bu (12,000 lb)

Longer Survival On-Seed
Osmo Protector Technology provides added protection for longer on-seed survival without requiring an extender. This allows growers much greater planting window flexibility compared to other seed-applied liquid and peat inoculants.

Seed containing a patented trait can only be used to plant a single commercial crop. It is unlawful to save and replant Roundup Ready® spring canola, Roundup Ready® winter canola, and TruFlex® canola with Roundup Ready® Technology. Additional information and limitations on the use of these products are provided in the Technology Stewardship Agreement and the Bayer Technology Use Guide: tug.bayer.com. U.S. patents for Bayer technologies can be found at the following webpage: cs.bayerpatents.bayer.com

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ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

Roundup Ready® Technology contains genes that confer tolerance to glyphosate. Plants that are not tolerant to glyphosate may be damaged or killed if exposed to those herbicides. Not all products are registered for use in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or representative for the product registration status in your state. BUTEO® start, Roundup Ready® and TruFlex® are trademarks of Bayer Group. Used under license. Bayer CropScience Inc. is a member of CropLife Canada.

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