

CONFIDENCE FROM THE GROUND UP.

THE INPUTS, EXPERTISE AND ADVICE THAT YIELD RESULTS.



CEREALS, PULSES AND
INOCULANTS GUIDE
2025

BEING A UFA MEMBER MEANS YOU COULD EARN PATRONAGE ON MANY PURCHASES YOU MAKE TO GROW HEALTHY CROPS:

THAT'S A PLUS.



HELPING YOU ACHIEVE A BETTER YIELD.

The right crop protection and your approach are important, whether you're growing cereals or pulses. This guide, and your Customer Account Manager's (CAM) experience and knowledge, makes sure you have the best information to make decisions. From seeding to storage, we're with you every step of the way.

With a full range of products to improve the health of your crop at any stage, your CAM will work with you to provide the right products, including our own lineup of micronutrients. This means you'll get the best solution for your growing conditions.

As a UFA member you can benefit from exclusive credit programs, to help you get the most of every dollar.

Grow with Confidence, Grow with UFA.



Scan the QR Code and discover that Better Crops begin here.

*Minimum combined \$5,000 purchase on all categories to qualify for patronage. Excludes Micro Beef, Crop Nutrition and leased purchases. Subject to Board and Delegate approval.

CEREALS

Get your cereal crop off to the best start with the top crop input choices. UFA offers a variety of options that help keep your cereal crops safe from other plants that compete for moisture and nutrients, insects and disease, meaning healthier plants and higher yields. Our complete acre solutions are simple steps that help you grow consistent, healthy crops.

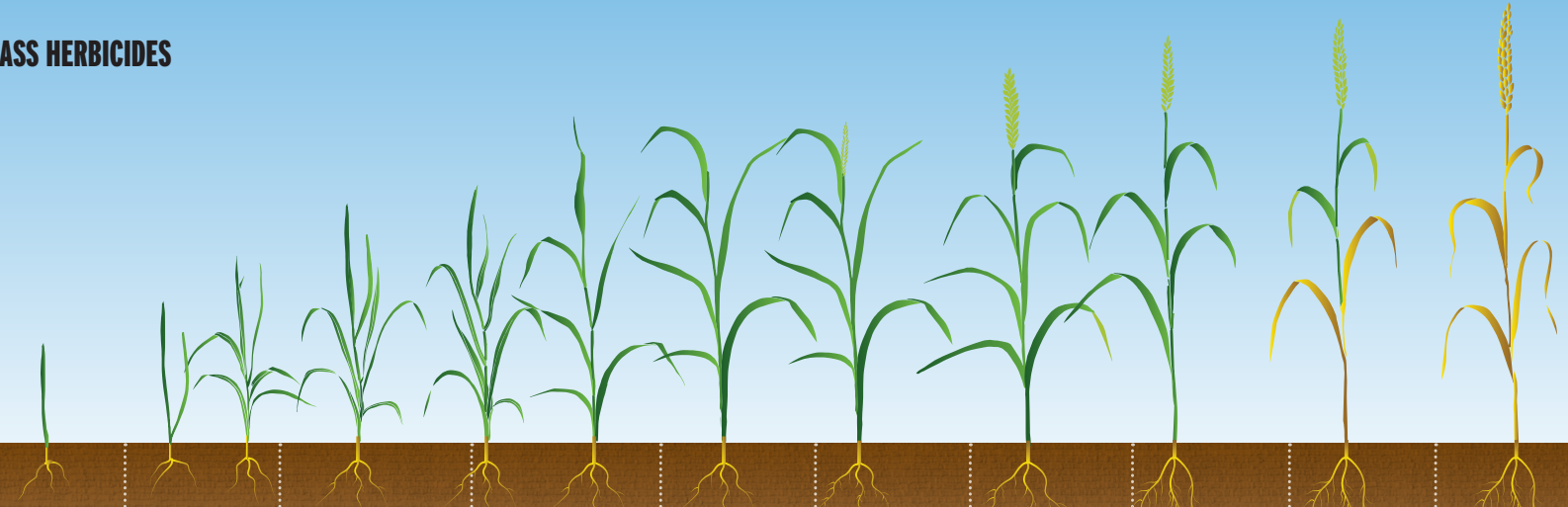
UFA is here to partner with you to provide the right products and solutions to maximize your yields and grow your returns.

WHEAT CROP STAGE SOLUTIONS GROUP 1 GRASS HERBICIDES



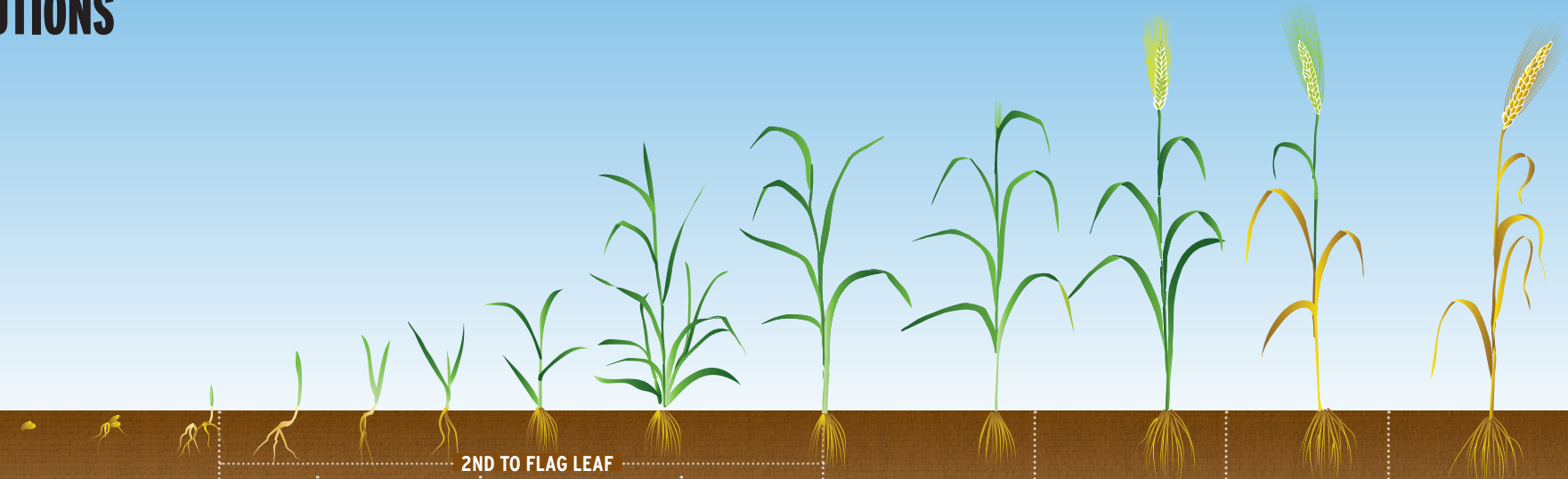
	PRE-SEED	PRE-EMERGENCE	SEED	1ST LEAF	BROADLEAF CONTROL	2ND TO FLAG LEAF GRASS CONTROL	CO-PACKS	FLAG LEAF	EARLY HEAD EMERGENCE	FULL HEAD EMERGENCE	20% FLOWER	50% FLOWER	PRE HARVEST	POST HARVEST
RECOMMENDED	BLACKHAWK® EVO	VALTERA™ EZ	CRUISER® VIBRANCE® QUATTRO		OXBOW	AXIAL®	AXIAL® XTREME	MIRAVIS® NEO		MIRAVIS® ACE			TRANSORB®	DISTINCT®
	PREPASS™ FLEX	AVADEX	RAXIL® PRO SHIELD ALL IN 1		INFINITY® FX	TRAXOS®	AXIAL® XTEME IPAK™	NEXICOR®		PROSARO® XTR			HEAT® LQ	
	VORAXOR®	FORTRESS	TERAXXA® F4		PIXXARO™ A	EPIC®	REZUVANT™ XL	TILMOR®		SPHAEREX®			AIM®	
	AUTHORITY®		VIBRANCE® QUATTRO		TALINOR®	TRONDUS	TRAXOS® TWO	HORNET™						
	FOCUS®		RAXIL® PRO		TRUSLATE™ PRO	SIGNAL®	TUNDRA							
	SMOULDER®		INSURE® CEREAL FX4		ENFORCER®	HORIZON® NG								
	PARADIGM PRE		INTEGO SUITE		ONDECK (BSZ)	PUMA ADVANCE								
ESSENTIAL NUTRITION					BUCTRIL® M									
			PRECEDE™ CEREAL		MAGNIFY™ FOCUS <small>Exclusive to UFA</small>			MULTIPLY™ ADVANTAGE <small>Exclusive to UFA</small>						

WHEAT CROP STAGE SOLUTIONS GROUP 2 GRASS HERBICIDES



	PRE-SEED	PRE-EMERGENCE	SEED	1ST LEAF	BROADLEAF CONTROL	2ND TO FLAG LEAF GRASS CONTROL	CO-PACKS	FLAG LEAF	EARLY HEAD EMERGENCE	FULL HEAD EMERGENCE	20% FLOWER	50% FLOWER	PRE HARVEST	POST HARVEST
RECOMMENDED	AIM/FOCUS	VALTERA EZ	CRUISER VIBRANCE QUATTRO		OXBOW	SIMPLICITY™	REXADE™	NEXICOR		MIRAVIS ACE			TRANSORB	DISTINCT
	BLACKHAWK EVO	AVADEX	RAXIL PRO SHIELD ALL IN 1		INFINITY FX	VARRO FX	VELOCITY™	MIRAVIS NEO		PROSARO XTR			HEAT LQ	
	PREPASS FLEX	FORTRESS	TERRAXXA F4		PIXXARO A	EREBUS™ XTREME	TANDEM	HORNET		SPHAEREX			AIM	
	VORAXOR		VIBRANCE QUATTRO		TALINOR	REATA*		TILMORE						
	SMOULDER		RAXIL PRO		TRUSLATE PRO									
	PARADIGM PRE		INSURE CEREAL FX4		ONDECK™									
			INTEGO SUITE		REFINE M									
ESSENTIAL NUTRITION			PRECEDE CEREAL		MAGNIFY FOCUS <small>tec</small> Exclusive to UFA			MULTIPLY ADVANTAGE Exclusive to UFA						

BARLEY CROP STAGE SOLUTIONS



	PRE-SEED BURN DOWN (MIX WITH GLYPHOSATE)	PRE- EMERGENCE	SEED	1ST LEAF	BROADLEAF CONTROL	GRASS CONTROL 2ND TO FLAG LEAF	CO-PACKS	FLAG LEAF	EARLY HEAD EMERGENCE	FULL HEAD EMERGENCE	PRE HARVEST	POST HARVEST
RECOMMENDED	AIM	AVADEX	CRUISER VIBRANCE QUATTRO		ENFORCER	AXIAL	REZUVANT XL	NEXICOR	PROSARO		HEAT LQ	DISTINCT
	PREPASS FLEX	FORTRESS	RAXIL PRO SHIELD ALL IN 1		INFINITY FX	EPIC	AXIAL XTREME	MIRAVIS NEO	MIRAVIS ACE		ROUNDUP TRANSORB	
	BLACKHAWK		VIBRANCE QUATTRO		PIXXARO A	LIQUID ACHIEVE™		TILMORE			AIM	
	VORAXOR		RAXIL PRO		REFINE M	PUMA ADVANCE						
	SMOULDER		INSURE CEREAL FX4		INFINITY							
			NIPSIT SUITE		BUCTRIL M							
ESSENTIAL NUTRITION			PRECEDE™ CEREAL	MAGNIFY™ FOCUS Exclusive to UFA			MULTIPLY™ ADVANTAGE Exclusive to UFA					

CEREAL SEED TREATMENT COMPARISON

FUNGICIDE ONLY

	BASF Insure® Cereal FX4	Syngenta Vibrance® Quattro	Bayer Raxil® PRO
Container size(s)	9.8 L, 120 L, 450 L	10 L, 115 L, 450 L	10 L, 58.5 L, 175.5 L
Application Rate mL/100 kg seed	300 mL	325 mL	325 mL
Wheat	120 bu/9.8 L jug	113 bu/10 L jug	113 bu/10 L jug
Barley	150 bu/9.8 L jug	141 bu/10 L jug	141 bu/10 L jug
Oats	212 bu/9.8 L jug	200 bu/10 L jug	200 bu/10 L jug
Active Ingredients	Pyraclostrobin, Triconazole, Fluxapyroxad, Metalaxyl	Difenoconazole, Metalaxyl-M, Sedaxane, Fludioxonil	Prothioconazole, Tebuconazole, Metalaxyl
Fungicide Group	3, 4, 7, 11	3, 4, 7, 12	3, 4
Insect Control (Need to Tank Mix)	None registered	Cruiser 5FS	Stress Shield

WHEAT DISEASES

Seed Rot & Damping off caused by:			
<i>Fusarium</i> spp.	C	C	C
<i>Cochliobolus sativus</i>	C	S	S
<i>Rhizoctonia</i>	C	C	S
<i>Pythium</i> spp.	C	C	S
<i>Penicillium</i>		C	S
<i>Aspergillus</i>		C	S
Seedling Blight caused by:			
<i>Fusarium</i> spp.	C	C	C
<i>Pythium</i> spp.	C	C	C
<i>Cochliobolus sativus</i>	S	S	C

	BASF Insure® Cereal FX4	Syngenta Vibrance® Quattro	Bayer Raxil® PRO
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WHEAT DISEASES (continued)

Common Root Rot caused by:			
<i>Fusarium</i> spp.	C	C	
<i>Pythium</i> spp.	C	C	
<i>Cochliobolus sativus</i>	S	S	S
Loose Smut	C	C	C
Common Bunt	C	C	C
Fusarium Crown and Foot Rot	S	S	S
Take All		S	

BARLEY DISEASES

True Loose Smut	C	C	C
False/covered Smut	C	C	C
Common Root Rot	S	S	S
<i>Pythium</i> spp.	C	C	S
<i>Fusarium</i> spp.	C	C	C
Take All		S	
<i>Rhizoctonia</i>	C	C	S
Leaf Stripe			C

C CONTROL S SUPPRESSION* NOT REGISTERED

*Suppression means consistent control at a level that is not optimal, but is still of commercial benefit.

Always read and follow label directions. Syngenta Cruiser Vibrance® Quattro is a registered trade-mark of Syngenta® Canada. Bayer Raxil® Pro is a registered trade-mark of BayerCropScience Inc. Insure® Cereal FX4 is a registered trade-mark of BASF Canada Inc.

CEREAL SEED TREATMENT COMPARISON

FUNGICIDE PLUS INSECTICIDE

	BASF Teraxxa F4	Syngenta Cruiser® Vibrance® Quattro	Nufarm Nipsit™ Suite	Bayer Raxil® PRO Shield
Container size(s)	9.8L, 120L, 450L	10 L, 115 L, 450 L	10L, 115 L	10L, 125 L
Application Rate mL/100 kg seed	300 mL	325 mL	326 mL	325 ml
APPLICATION RATE				
Wheat	120 bu/9.8 L jug	113 bu/10 L jug	113 bu/10 L jug	113 bu/10 L jug
Barley	150 bu/9.8 L jug	141 bu/10 L jug		141 bu/10 L jug
Oats	212 bu/9.8 L Jug	200 bu/10 L jug		200 bu/10 L jug
Active Ingredients	Broflanilide, Pyraclostrobin, Triconazole, Fluxapyroxad, Metalaxyl	Difenoconazole, Metalaxyl-M, Sedaxane, Fludioxonil, Thiamethoxam	Metalaxyl, Metconazole, Clothianidin	Prothioconazole, Tebuconazole, Metalaxyl, Imidacloprid
Insecticide Group	30	4	4	4
Fungicide Group	3, 4, 7, 11	3, 4, 7, 12	3, 4	3, 4

INSECTICIDAL ACTIVITY

Wireworm	C	S	S	S
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WHEAT DISEASES

Seed Rot and Damping Off caused by:				
<i>Fusarium</i> spp.	C	C	C	C
<i>Cochliobolus sativus</i>	C	S	C	C
<i>Pythium</i> spp.	C	C	C	C
<i>Rhizoctonia</i>	C	C		S
<i>Penicillium</i>		C		S
<i>Aspergillus</i>		C		C

	BASF Teraxxa F4	Syngenta Cruiser® Vibrance® Quattro	Nufarm Nipsit™ Suite	Bayer Raxil® PRO Shield
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WHEAT DISEASES (continued)

Seedling Blight caused by:				
<i>Fusarium</i> spp.	C	C	C	C
<i>Pythium</i> spp.	C	C	C	C
<i>Cochliobolus sativus</i>	S	S	S	C
Common Root Rot caused by:				
<i>Fusarium</i> spp.	C	C	C	
<i>Pythium</i> spp.	C	C	C	
<i>Cochliobolus sativus</i>	S	S	S	S
Loose Smut	C	C	C	C
Common Bunt	C	C	C	C
Fusarium Crown and Foot Rot	S	S		S
Take All		S		

BARLEY DISEASES

True Loose Smut	C	C	C	C
False/covered Smut	C	C	C	C
Common Root Rot	S	S	S	S
<i>Pythium</i> spp.	C	C	C	C
<i>Fusarium</i> spp.	C	C	C	C
Take All		S		
<i>Rhizoctonia</i>	C	C		S
Leaf Stripe				C

C CONTROL S SUPPRESSION* NOT REGISTERED

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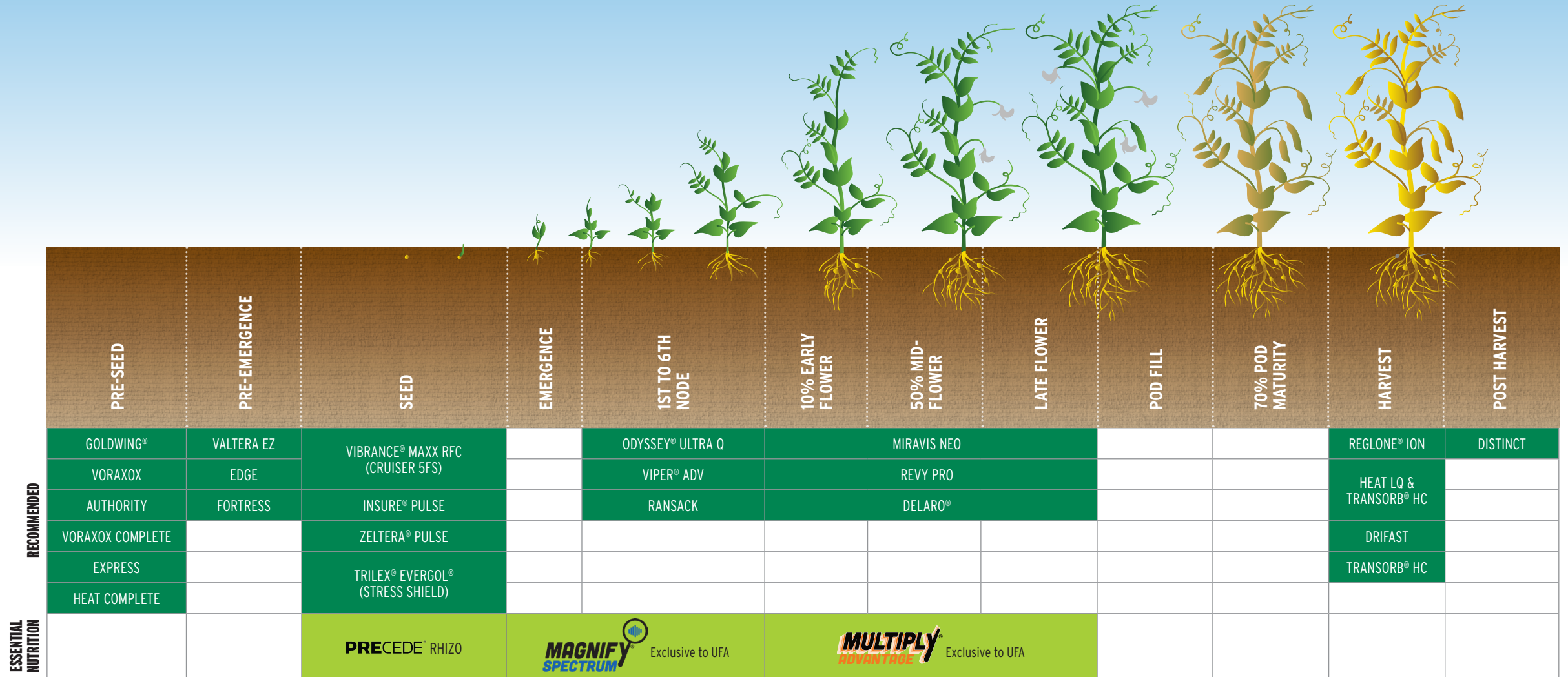
Always read and follow label directions. Syngenta Cruiser Vibrance® Quattro is a registered trade-mark of Syngenta® Canada. Bayer Raxil® Pro Shield is a registered trade-mark of BayerCropScience Inc. Nufarm Nipsit™ Suite is a registered trade-mark of Nufarm. Teraxxa F4 is a registered trade-mark of BASF Canada Inc.

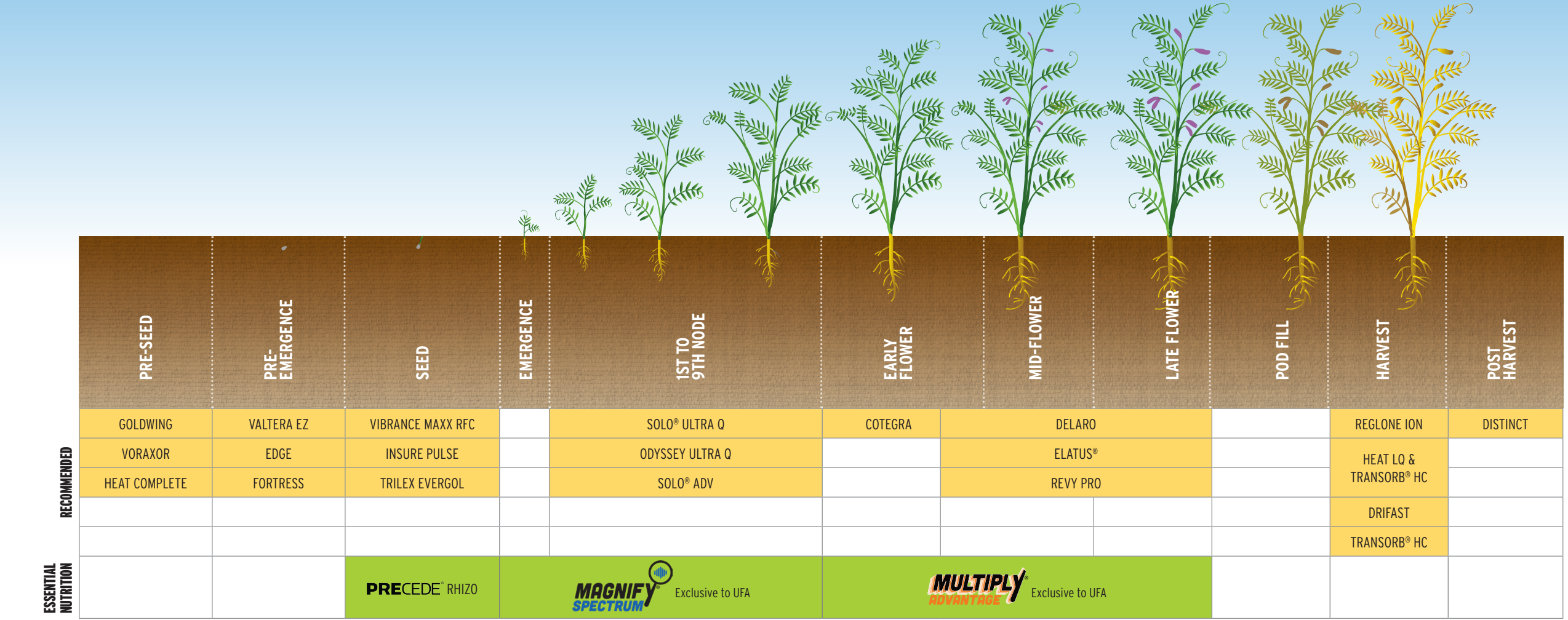


PULSES

Get the most out of your crops while reducing risk.
Your CAM is here to help.

Great crops start with the right seed treatment, inoculants,
and nutrients. Working with your CAM makes it easier
to select the right combination to give your crop the
strong start it needs to overcome pressures like disease
and insects. UFA is here to help you get the highest yield
possible from your field.





PULSE SEED TREATMENT COMPARISON

FUNGICIDE ONLY

	BASF Insure® Pulse	Syngenta Vibrance® Maxx RFC	Syngenta Vibrance® Total	Nufarm Zeltera® Pulse	Bayer Trilex® EverGol®	Bayer EverGol Energy
Container size(s)	9.8 L, 120 L	3.075 L, 56.78 L	10 L, 115 L, 450 L	10 L	Cases: 1.5 L + 0.96 L or 6.49 L + 4.15 L	33.75 L
Application Rate mL/100 kg seed	300 mL	100 mL, 325 mL with water slurry	325 ml	313 ml	Trilex® Jug A 25 mL, Trilex® Jug B 16 mL - Mix with Water	65 ml Mix with Water
APPLICATION RATE						
Peas, Lentils, Chickpeas	120 bu/9.8 L jug	113 bu/10 L jug	113 bu/ 10 L jug	120 bu/10 L jug	221 bu/case	1908 bu/drum
Active Ingredients	Fluxapyroxad, Pyraclostrobin, Metalaxyl	Fludioxonil, Sedaxane, Metalaxyl-M, S-isomer	Thiabendazole, Sedaxane, Metalaxyl-M, S-isomer, Fludioxonil, Picarbutrazox	Metalaxyl, Inpyrfluxam, Mandestrobin, Ethanboxam	Penflufen, Trifloxystrobin, Metalaxyl	Metalaxyl, Penflufen, Prothioconazole
Fungicide Group	4, 7, 11	4, 7, 12	1, 4, 7, 12, U17	4, 7, 11, 22	4, 7, 11	3, 4, 7
Insect Control (Tank Mix)	None registered	Cruiser 5FS	Cruiser 5FS	N/A	Stress Shield	Stress Shield

C CONTROL **S** SUPPRESSION* **NOT REGISTERED**

*Suppression means consistent control at a level that is not optimal, but is still of commercial benefit.

	BASF Insure® Pulse	Syngenta Vibrance® Maxx RFC	Syngenta Vibrance® Total	Nufarm Zeltera® Pulse	Bayer Trilex® EverGol®	Bayer EverGol Energy
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PEA DISEASES

Seed and seedling rot/blight	C	C	C	C	C	C
Pythium seed rot/damping off	C	C	C	C	C	C
Seed-borne ascochyta	C	C	C	S	S	C
Aphanomyces (Peas)				S		

LENTIL AND CHICKPEA DISEASES

Seed and seedling rot/blight	C	C	C	C	C	C
Pythium seed rot/damping off	C	C	C	C	C	C
Botrytis seed rot and seedling blight	S	C	C		C	C
Seed-borne ascochyta	C	C	C	S	C	C

PULSE SEED TREATMENT COMPARISON

FUNGICIDE PLUS INSECTICIDE

	Syngenta Cruiser® Maxx® Vibrance Pulses	Bayer Trilex® EverGol® SHIELD	Syngenta Cruiser® 5FS	Bayer Stress Shield®
Container size(s)	23.4L or 56.78 L 2 x 3.075 or 56.78 L	1.5 L + 0.96 L + 6.25 L tri-pack	23.4 L, 56.78 L	27 L
Application Rate mL/100 kg seed	Vibrance Maxx 325 ml Cruiser 5FS 50 ml	Trilex Jug A 25 mL, Trilex Jug B 16 mL, Stress Shield 104 mL Mix with Water	50 mL*	104 - 208 mL
APPLICATION RATE				
Peas, Lentils, Chickpeas	113 bu/jug plus target rate of Cruiser 5FS	221/case	To be mixed with fungicide seed treatments	To be mixed with fungicide seed treatments
Active ingredients	Thiamethoxam, Fludioxonil, Metalaxyl M, Sedaxane	Imidacloprid, Penflufen, Trifloxystrobin, Metalaxyl	Thiamethoxam	Imidacloprid
Insecticide Group	4	4	4	4
Fungicide Group	4, 7, 12	4, 7, 11	N/A	N/A

* 50 mL is the rate to obtain the 30g/100 kg rate of Cruiser 5FS which is the rate for pea leaf weevil.

	Syngenta Cruiser Maxx® Vibrance Pulses	Bayer Trilex® EverGol® SHIELD	INSECTICIDE ONLY	
			Syngenta Cruiser® 5FS	Bayer Stress Shield®

INSECTS

Pea Leaf Weevil	S	S	S	S
Wireworms	S	S	S	S

PEA DISEASES

Seed and seedling rot/ blight	C	C		
Pythium seed rot/damping off	C	C		
Seed-borne ascochyta	C	S		
Aphanomyces (Peas)				

LENTIL AND CHICKPEA DISEASES

Seed and seedling rot/blight	C	C		
Pythium seed rot/damping off	C	C		
Botrytis seed rot and seedling blight	C			
Seed-borne ascochyta	C	C		

C CONTROL **S** SUPPRESSION* NOT REGISTERED

*Suppression means consistent control at a level that is not optimal, but is still of commercial benefit.

Always read and follow label directions. Syngenta Cruiser® Vibrance Maxx® 5FS are registered trade-marks of Syngenta® Canada. EverGol®, Stress Shield® and Trilex® are registered trade-marks of the Bayer Group.

INOCULANTS

Give your crop a stronger start with quality inoculant. Applying the right inoculant to your seed or soil will improve root nodule formation, nitrogen fixation and reduce pests & disease, all leading to better yields.

Your local CAM can help you decide on the right inoculant for your seed treatment, soil condition and preferred application method.

SEED TREATMENT & INOCULANT COMPATIBILITY

	BASF Nodulator® DUO Solid Core Granular	BASF Nodulator® XL Liquid			BASF Nodulator® XL Peat		TagTeam® BioniQ® Granular	TagTeam® LCO Granular	TagTeam® Liquid			TagTeam® Peat			LalFix® Spherical Pea & Lentil*	LalFix® Peat Pea & Lentil*	LalFix® Liquid Pea & Lentil*
		Tank Mix ¹ time on Seed	Simultaneous	Sequential	Simultaneous	Sequential			Tank Mix time on Seed	Simultaneous	Sequential	Tank Mix time on Seed	Simultaneous	Sequential			
Syngenta Vibrance® Maxx	Nodulator® DUO Solid Core Granular is compatible with all pesticide treated seed in furrow.	4 hours	2 hours	2 hours	24 hours	24 hours	TagTeam® BioniQ® Granular is compatible with all pesticide-treated seed in furrow.	TagTeam® LCO Granular is compatible with all pesticide treated seed in furrow.	Not recommended	48 hours for pea, 24 hours for lentil	48 hours for pea, 24 hours for lentil	48 hours for pea, not recommended for lentil	48 hours	48 hours	Compatible	48 Hours	Not yet tested
Bayer Trilex® EverGol®		Not recommended	2 hours	1 hour for pea, 2 hours for lentil	2 hours for pea, 4 hours for lentil	4 hours			Not recommended	Not recommended	Not recommended	48 hours	48 hours	48 hours	Compatible	48 Hours	48 Hours
Bayer Trilex® EverGol® SHIELD		Not recommended	Not recommended	Not recommended	2 hours	4 hours			Not recommended	Not recommended	Not recommended	Not recommended	24 hours for pea, 48 hours for lentil	24 hours for pea, 48 hours for lentil	Compatible	48 Hours	48 Hours
BASF Insure® Pulse		Not recommended	Not recommended	Not recommended	Not recommended	2 hours			Not recommended	Not recommended	Not recommended	Not recommended	Not recommended	Not recommended	Compatible	48 Hours	Not recommended
Syngenta Vibrance® Maxx with Intego®		4 hours	2 hours	2 hours	24 hours	24 hours			Not recommended	Not recommended	Not recommended	48 hours for pea, not recommended for lentil	48 hours	48 hours	Compatible	48 Hours	Not yet tested
Syngenta Vibrance® Maxx RFC		Not available	6 hours	4 hours	24 hours	24 hours			Not recommended	48 hours	48 hours	48 hours	48 hours	48 hours	Compatible	48 Hours	Not yet tested
Syngenta Cruiser Maxx® Vibrance® Pulses		Not recommended	Marginal	Not recommended	6 hours	6 hours			Not recommended	48 hours	48 hours				Compatible	48 Hours	24 Hours

TANK MIX

The inoculant is mixed with the seed treatment in a single tank and applied as one solution or suspension using the same applicator. The inoculant and seed treatment can be tank mixed for a period of time before application to the seed.

SIMULTANEOUS (WET SEQUENTIAL)

The inoculant and seed treatment are applied at the same time, from separate tanks. They must be applied by separate applicators to be defined as a simultaneous or wet sequential application.

DRY SEQUENTIAL

One product is applied first and allowed to dry, before the second product is applied. This can be a seed treatment followed by an inoculant or inoculant followed by a seed treatment. Drying time will vary based on formulation, relative air humidity and other factors. A minimum 30 minutes is typical, but it may take up to a day.

*Seeds were treated with chemical products at rates according to the manufacturer's recommendation as a dry sequential application and were stored at 4°C. Always read and follow label directions. All trademarks are the property of their respective owners.

¹ These on-seed shelf life recommendations are based on a maximum of four - hour tank-mix period. Always read and follow label directions. All trademarks are the property of their respective owners.



LALFIX START

Lallemand brings a new kind of inoculant to the table for peas and lentils. LALFIX® Start for Peas, Lentils & Faba is a high quality dual-action, in-furrow spherical inoculant with 7.5 x 10⁷ viable *Rhizobium leguminosarum* biovar *viciae* cells per gram.

LALFIX® Start for Peas, Lentils & Faba brings a number of enhancements over traditional granular inoculants:

- Technologically advanced spherical granule
- Provides accurate inoculant placement while increasing granule durability and Rhizobia survival
- Low dust partition allows for even application
- Selected *Rhizobium leguminosarum* strains enables the plants to start fixing nitrogen earlier and more efficiently
- Better crop establishment and enhanced yields

LALFIX® START SPHERICAL PEA & LENTIL

LALFIX® SPHERICAL PEA - FAB A - LENTIL

Row Width		Recommended Rate (granular)			Area treated - acres (ha)	
in	cm	lbs/ac	kg/ac	kg/ha	Bag	Tote
6	15	4.4	2	5	6.1 (2.5)	196 (79.3)
7	18	3.8	1.7	4.3	7.1 (2.9)	227 (91.8)
8	20	3.3	1.5	3.7	8.2 (3.3)	262 (106)
9	23	3	1.4	3.3	9.0 (3.6)	288 (116.5)
10	25	2.7	1.2	3	10.0 (4.0)	320 (129.5)
12	30	2.2	1	2.5	12.3 (5.0)	393 (159)

Data provided by Lallemand

LALFIX® START SPHERICAL PEA & LENTIL

is a high quality, dual-strain sterile peat powder inoculant that contains a select peat carrier that aids in the adhesion of the inoculant to the seed. This product can be applied on the seed through a variety of application methods that suit the grower's requirements.

27 lbs (12.2 kg)	432 lbs (196 kg)
Application Rate: In Furrow	Application Rate: In Furrow
0.81 oz per 1,000 feet of row	0.81 oz per 1,000 feet of row
10" row spacing = 2.7 lbs/ac (1 bag treats 10 acres)	10" row spacing = 2.7 lbs/ac (1 tote treats 160 acres)

LALFIX® SPHERICAL PEA - FAB A - LENTIL

contains two strains of *Rhizobium leguminosarum* biovar *viciae* selected for enhanced performance and competitiveness in pea, lentil, and faba bean production. These two strains are known to nodulate pea, lentil, and faba bean roots and fix atmospheric nitrogen in a symbiotic relationship with the plant.



We create chemistry Inoculant

BASF continues to provide inoculants and biologicals backed by research, development and innovative technologies that benefit growers by improving nodulation, nitrogen-fixation, root vigor, nutrient uptake and yield potential.

NODULATOR XL LIQUID

Application Rates – Light formulation:

- One case contains 3 x 7.5L bladders
- One case will treat 300 bushels of seed.

On-Seed Liquid Application

Flow Valve Setting	Inoculant Flow Rate (liquid)		Seed/Auger Flow Rate	
	mL/min	fl. oz./min	kg/min	lbs (bu)/min
1	360	12	131	289 (5)
2	860	29	313	690 (11)
3	1340	45	487	1074 (18)
4	1660	56	604	1332 (22)
5	1780	60	647	1426 (24)
6	2030	68	738	1627 (30)

Data provided by BASF Canada Inc.

In-Furrow Liquid Application

Row Spacing		Application Rate		Area Treated per Case	
cm	in	L/ha	L/ac	ha	ac
15.2	6	6.5	2.6	1.2	2.9
17.8	7	5.5	2.2	1.4	3.3
20.3	8	4.9	2	1.5	3.8
22.9	9	4.3	1.7	1.7	4.3
25.4	10	3.9	1.6	1.9	4.8
27.9	11	3.5	1.4	2.1	5.2
30.5	12	3.2	1.3	2.3	5.7

NODULATOR XL PEAT

Application Rates - Sterile peat formulation:

- One case contains 3 x 1.2 kg packages
- One case will treat 110 bushels of seed
- The standard rate of application is 1.2 kg per 600 kg of seed

On-Seed Peat Application

Application Method	Recommendations
Slurry	Add complete pack contents to approximately 2 litres of clean, dechlorinated water and stir well in a clean container to form a lump-free slurry. Not allowing slurry to settle out, pour onto the seed and mix thoroughly to ensure the seeds are evenly coated. Allow seed to dry before further handling.
Damp	Apply just enough water to slightly dampen seed (2 mL/kg). Mix the damp seed thoroughly with the inoculant so that they are evenly coated.
Dry	Pour the correct amount of inoculant onto thin layers of seed in the drill hopper and mix thoroughly to evenly coat seed. For bulk seed handling systems, the inoculant can be metered directly onto augured seed.

Data provided by BASF Canada Inc.

NODULATOR DUO SCG

Application Rates - Solid Core Granule Formulation:

- One bag will treat 10.6 acres (7" rows) to 18.5 acres (12" rows)
- One Q-Pak will treat 170 acres (7" rows) to 18.5 acres (12" rows)
- Apply granular inoculant at a rate of 28.5 g/1,000 linear row feet

In-Furrow Granular Application

Row Spacing		Application Rate		Area Treated per Bag	
cm	in	kg/ha	lb/ac	ha	ac
15.2	6	6.2	5.6	3.7	8.9
17.8	7	5.3	4.7	4.3	10.6
20.3	8	4.6	4.1	4.9	12.2
22.9	9	4	3.6	5.7	13.9
25.4	10	3.7	3.3	6.1	15.2
27.9	11	3.4	3	6.7	16.7
30.5	12	3	2.7	7.6	18.5

Data provided by BASF Canada Inc.

BIOLOGICALS

by

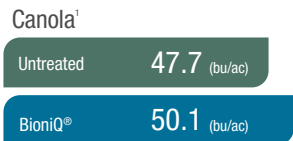


Stronger Crops, Maximum Yields

Getting your crop off to a vigorous start is crucial for maximizing yield potential. Bio-nutrition products from FMC can help by improving the availability of fertilizer and soil nutrients to the plant, maximizing nitrogen fixation, and stimulating root growth and shoot development. This will result in your crops getting a head start in delivering maximum yields.



Three biological actives to solubilize phosphorus & other nutrients while stimulating root and shoot growth in cereal and canola crops.



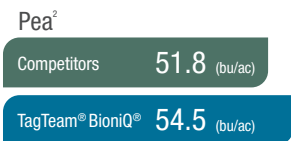
Win Rate



Yield Advantage



Four biological actives to promote crop growth and a signalling molecule to quicken nodule development.



Win Rate



Yield Advantage



Specially selected rhizobia provide effective nodulation to enhance nitrogen fixation in key crops.

Ask your local UFA retailer or FMC representative today about Biologicals by FMC.



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¹ Source: Results were collected from 78 farmer-conducted, large-scale, side-by-side BioAdvantage Trials conducted in Western Canada from 2017-2021.

² Source: Results were collected from 43 farmer-conducted, large-scale, side-by-side BioAdvantage Trials conducted in Western Canada from 2017-2023.

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TagTeam

Formulation	Peat			Liquid			
	Crop	Pea	Lentil	Chickpea	Crop	Pea	Lentil
Rate					300 ml/100kg seed		
Size 2.2 kg		50 bu 3,000 lb 4 L water	30 bu 1800 lb 2.5 L water	50 bu 3,000 lb 4 L water	Size 3 L	40 bu 2,400 lb	40 bu 2,400 lb

Cell Tech

Formulation	Peat			Liquid		
	Crop	Pea	Lentil	Crop	Pea	Lentil
Rate				Rate	300 ml/100kg seed	
Size 2.2 kg		50 bu 3,000 lb 4 L water	30 bu 1800 lb 2.5 L water	Size 3L	40 bu 2,400 lb	40 bu 2,400 lb
Size 2.32 kg		-	-	Size 9.8L	130 bu 7,840 lb	130 bu 7,840 lb

BioniQ

Formulation	Multi-Wettable powder (co pack)					
	Crop	Canola	Wheat	Barley	Oat	Rye
Size 783g (333g + 450g)		10 bu 500 lb 5 L water	250 bu 15,000 lb 42 L water	250 bu 12,000 lb 34 L water	250 bu 8,500 lb 24 L water	250 bu 14,000 lb 39 L water

Nitragin Gold

Formulation	Clay powder		
	Crop	Alfalfa	Clover
Size 19 kg		5000 lb	5000 lb

JumpStart

Formulation	Multi-Wettable powder								
	Crop	Alfalfa	Canola	Chickpea	Corn	Dry bean	Lentil	Pea	Wheat
Size 400g		1100 lb 10 L water	1000 lb 10 L water	400 bu 24,000 lb 30 L water	70 units 19.6 L water	300 bu 18,000 lb 25 L water	300 bu 18,000 lb 25 L water	500 bu 30,000 lb 40 L water	300 bu 18,000 lb 50 L water

PRODUCT REFERENCE

(Acre/Volume of Product)

TagTeam BioniQ

Formulation	Improved Granule		
Crop	Pea/Lentil	Chickpea	Faba Bean
Size 16.5 kg	11*	11*	11*
Size 454 kg	303*	303*	-

TagTeam

Formulation	Peat			Liquid		
Crop	Pea	Lentil	Chickpea	Crop	Pea	Lentil
Size 2.2 kg	17	25	25	Size 3L	13	33

BioniQ

Formulation	Multi-Wettable powder			
Crop	Canola	Wheat	Barley	Oat
Size 783g	100 or 10 bags	100	125	83

TagTeam BioniQ (Improved Granule) Pea/Lentil

Package Size	16.5kg (36.3lb) Bag		Super Sack (454 kg)
Row Spacing	lb/ac	ac/bag	ac/bag
6 in	5.5	6.6	182
7 in	4.7	7.7	213
8 in	4.1	8.9	244
9 in	3.6	10.1	278
10 in	3.3	11	303
12 in	2.7	13.4	370
15 in	2.2	16.5	455
TagTeam BioniQ Granule Bulk Density (35 lb/ft ³)			

Nitragin Gold

Formulation	Clay Powder	
Crop	Alfalfa	Clover
Size 19 kg	500	1667

Taegro 2

Formulation	Wettable Powder
Crop	Multi
375g	188-375 g/ha

Cell Tech

Formulation	Granule	Peat			Liquid		
Crop	Pea/Lentil	Crop	Pea	Lentil	Crop	Pea	Lentil
Size 18 kg	8.7*	Size 2.2 kg	17	25	Size 3L	13	33
Size 454 kg	217.6*	Size 2.32 kg	-	-	Size 9.8L	43	108

Cell Tech (Original Granule) Pea/Lentil

Package Size	18kg (39.6lb) Bag		Super Sack (454 kg)
Row Spacing	lb/ac	ac/bag	ac/bag
7 in	6.6	6.1	151.7
8 in	5.8	6.9	172.6
9 in	5.1	7.8	196.3
10 in	4.6	8.7	217.6
12 in	3.8	10.5	263.4
15 in	3.1	13.3	333.7
Cell Tech Granule Bulk Density (37 lb/ft ³)			

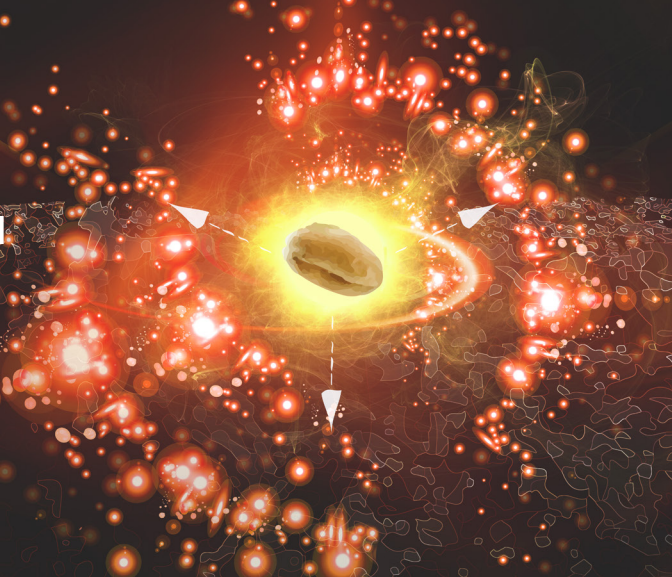
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JumpStart

Formulation	Multi-Wettable powder							
Crop	Alfalfa	Canola	Chickpea	Corn	Dry bean	Lentil	Pea	Wheat
Size 400g	110	200	200	175	327	250	167	120
Size 18 kg	12*	12	12	12	12	12	12	12

Assumptions	Pea	Lentil	Wheat	Canola	Chickpea	Barley	Oat	Alfalfa	Clover	Dry Bean
Seeding Rates	3 bu/ac	1.2 bu/ac	2.5 bu/ac	5 lb/ac	2 bu/ac	2 bu/ac	3 bu/ac	10 lb/ac	3 lb/ac	55 lb/ac
Granule*	10 inch row spacing									

ADD PRECEDE® TO YOUR SEED PROTECTION



Seed Nutrition Matters - 5 Reasons Why

1. 90% of seeds are nutritionally imbalanced.

To achieve the genetic potential of the crop, proper seed nutrition is critical to drive seedling vigor and a healthy root system to maximize the photosynthetic efficiency of the plant.

2. There are 5 key nutrients critical for germination and early seedling growth:

- 1. Phosphorus:** stimulates vigorous early season growth, driving strong roots, and energy production within the plant.
- 2. Zinc:** necessary for protein synthesis and membrane function; helps in seed formation and healthy root growth leading to enhanced grain yield.
- 3. Manganese:** regulates the splitting of water molecules during photosynthesis and accelerates germination and early seedling development.
- 4. Boron:** regulates metabolism of carbohydrates and maintains cell wall integrity of roots
- 5. Nickel:** cofactor of urease - involved in the breakdown of urea to ammonia.

4. PreCede is a seed nutrient dressing designed specifically for the crop that makes seed treating easy. The seed requires a complex mixture of nutrients in specific ratios and this combination varies by crop. PreCede is a combination of:

- **Plant nutrition** – Macro and micronutrients to address deficiencies to ensure enhanced germination, early season vigor, and rooting.
- **Biostimulants** – Transit-S and Cellburst increase rooting and reduce abiotic and biotic stress.

5. PreCede should be combined with seed protection to further benefit plant health and yield. You can check which seed treatments are compatible with PreCede at atpag.com.

Get a FREE Seed Nutrient Test!

Over the past year ATP and UFA has worked with many growers to conduct analytical seed nutrient tests through an independent third party lab. The results from the tests have been instrumental in determining whether or not a seed nutrient dressing would be beneficial.



Cold Start Your Crop

Seeds are nutrient imbalanced. Achieving the maximum genetic potential means providing the essential nutrients, combined with biostimulants, right from the start. By applying PreCede, a novel seed nutrient dressing, in tandem with your seed protection you will maximize rooting and seedling vigor of your crop.

PreCede is powered by two biostimulants, Convey and Cellburst Technology, to maximize the efficiency of the formulation.

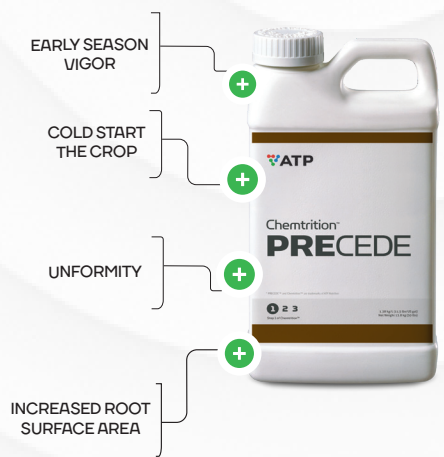
PreCede is Stage 1 in the System of Chemtrition®

Designed Specifically for Each Crop to Release its Genetic Potential



Learn more at atpag.com

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