



AGTIV[®]

CANOLA & CEREALS | GUIDE 2023

AGTIV[®]

DESIGNED BY NATURE. PERFECTED BY SCIENCE.

CONTENTS

AGTIV[®]

- [COMPLETE OFFER](#)

AGTIV[®] TECHNOLOGIES

- [MODE OF ACTION](#)

PRODUCT OFFER

- [BENEFITS FOR CANOLA & CEREALS](#)
- [PRODUCT INFORMATION](#)

REPORTS SUMMARY

- [YIELD RESULTS](#)
- [COMPATIBILITY WITH PESTICIDES](#)

TOOLS

- [ONLINE TOOLS](#)

Since entering the agriculture market 15 years ago, we are constantly widening our AGTIV® inoculant offering to suit and benefit more crops.

While staying true to the AGTIV® brand's three pillars: **NATURE**, **SCIENCE** and **PERFORMANCE**, we are introducing new product names reflecting the actions of our inoculants for plants.



AGTIV®
FUEL

Single action **rhizobium** products FUEL legumes by fixing nitrogen for better growth.

AGTIV®
THRIVE

Dual action **mycorrhizae** and **rhizobium** products make plants THRIVE by increasing nutrient uptake.

AGTIV®
ENRICH

Dual action **rhizobium** and **Bacillus** collaborate to ENRICH the plant's nitrogen fixation with a healthy root system.

AGTIV®
STIMULATE

Single action **Bacillus** products STIMULATE the plant to grow more efficiently with a healthy root zone.

AGTIV®
IGNITE

Single action **Serendipita** products IGNITE plant growth and chlorophyll content for better yields.

AGTIV®
REACH

Single action **mycorrhizae** products REACH into the soil and help uptake more nutrients and water.

AGTIV®

**DESIGNED BY NATURE.
PERFECTED BY SCIENCE.**

Born from **nature** and perfected by **science**, AGTIV® is an innovative technology brand made of high-quality and proven natural active ingredients that deliver superior **performance** for agricultural producers.

Discover more at

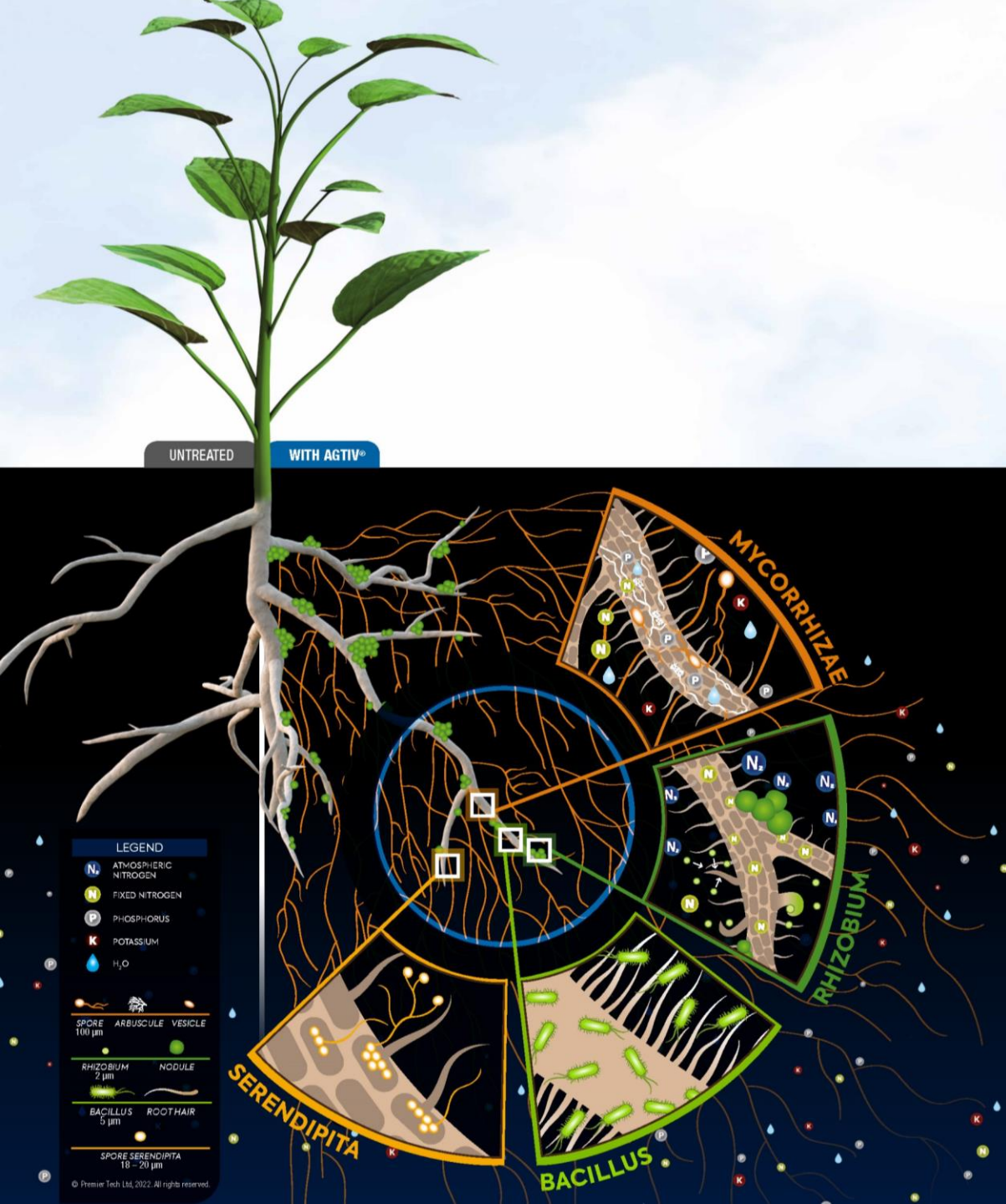
PTAGTIV.COM/brand

AGTIV® BIOLOGICAL ACTIVE INGREDIENTS

For nearly 100 years, Premier Tech has been growing along with producers. Being a world leader in the industrial production of mycorrhizal inoculants has inspired us to go further in our search for natural technologies. Since then, we have introduced the benefits of *Bacillus*, rhizobium, and *Serendipita* to the agricultural market. Furthermore, we have combined these powerful technologies to improve the quality and the yield of crops for the benefit of our clients.

Learn more at

PTAGTIV.COM/en/technologies



M

MYCORRHIZAE

PTB297 Technology, *Rhizophagus irregularis* (formerly known as *Glomus intraradices*)

Mycorrhizae are beneficial associations between a mycorrhizal fungus and roots. The mycorrhizal spores germinate in the soil and produce filaments (hyphae) which enter into root cells. This association allows the formation of an intra and extra-radical network of filaments that explore the soil and access more nutrients and water, and transfer them to the plant.

- ✔ EXPAND ROOT SYSTEM GROWTH
- ✔ ENHANCE NUTRIENT & WATER UPTAKE
- ✔ INCREASE TOLERANCE TO STRESSES
- ✔ IMPROVE SOIL STRUCTURE



R

RHIZOBIUM

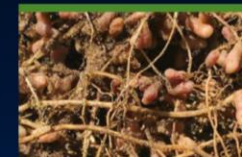
PTB160 Technology (pulses), *Rhizobium leguminosarum* biovar *viciae*

PTB162 Technology (soybean), *Bradyrhizobium japonicum*

Mesorhizobium ciceri (chickpea)

Rhizobium bacteria live and thrive in symbiosis in root nodules produced by the plant. They are responsible for fixing the atmospheric nitrogen and making it available for the plant.

- ✔ FIX NITROGEN & MAKE IT AVAILABLE TO THE PLANT



B

BACILLUS

PTB180 Technology, *Bacillus pumilus*

Bacillus is a bacteria that provides a healthy root zone which leads to better yields. As a root colonizer, it stimulates the plant to grow more efficiently. Selected for its beneficial action of growth stimulation.

- ✔ IMPROVES ROOTING ENVIRONMENT & PLANT ESTABLISHMENT
- ✔ INCREASES PLANT VIGOR & PERFORMANCE



S

SERENDIPITA

PTB299 Technology, *Serendipita indica* (formerly known as *Piriformospora indica*)

The beneficial fungus Serendipita indica, a natural microorganism, forms an association with roots of many plants such as canola and cereals. It induces some of the plant gene expression and promotes phytohormone production.

- ✔ MITIGATES ABIOTIC STRESSES
- ✔ INCREASES CHLOROPHYLL CONTENT
- ✔ BETTER PLANT ESTABLISHMENT, GROWTH AND YIELD



LEGEND

- N ATMOSPHERIC NITROGEN
- H FIXED NITROGEN
- P PHOSPHORUS
- K POTASSIUM
- H₂O
- SPORE 100 µm
- ARBUSCULE VESICLE
- RHIZOBIUM 2 µm
- NODULE
- BACILLUS 5 µm
- ROOT HAIR
- SPORE SERENDIPITA 18 - 20 µm

SERENDIPITA

PTB299 Technology, *Serendipita Indica* (formerly known as *Piriformospora Indica*)

The beneficial fungus *Serendipita Indica*, a natural microorganism, forms an association with roots of plants from the Brassicacea family, such as canola. It induces some of the plant gene expression and promotes phytohormone production.

IMPROVE CHLOROPHYLL CONTENT AND PHOTOSYNTHESIS

- Increases the biosynthesis of chlorophyll¹
- Upregulates antioxidant system and aids in the maintenance of grana in chloroplasts and thus protects the photosynthetic machinery
- Improves Calvin cycle enzymes and prevents the disintegration of photosynthetic pigments and the structural components of chloroplasts² under stress.

BRANCHES AND FLOWERING

- Significantly increases the number of tillers and second branches of the aerial part¹⁰
- Consistently accelerates host bolting and flowering with several days in advance¹¹.

ABIOTIC STRESS TOLERANCE

- Mitigates detrimental effects of water stress by improving stomatal conductance, photosynthesis, antioxidative potential, redox-homeostasis, osmotic adjustment, water conservation, sugar and N metabolism, wax and suberin biosynthesis³.
- Enhances drought tolerance via modulating stomatal closure⁴.
- Improves biochemical pathways of plant partner which includes biosynthesis of prolines, organic acids and sugars, that serve as osmolytes facilitating osmotic adjustment or osmoregulation in the cell⁵. This aids plants to maintain water potential gradient for the flow of water from soil into root and further to aerial parts under water deficit conditions⁶.

NUTRITIONAL ASPECTS

Phosphorus:

- Enhances absorption of P by increasing expression of plant phosphate transporter⁶
- Promotes P uptake into the roots by solubilizing inorganic soil P via the production of organic acids as well as the stimulation of plants transport genes⁷.

Nitrogen

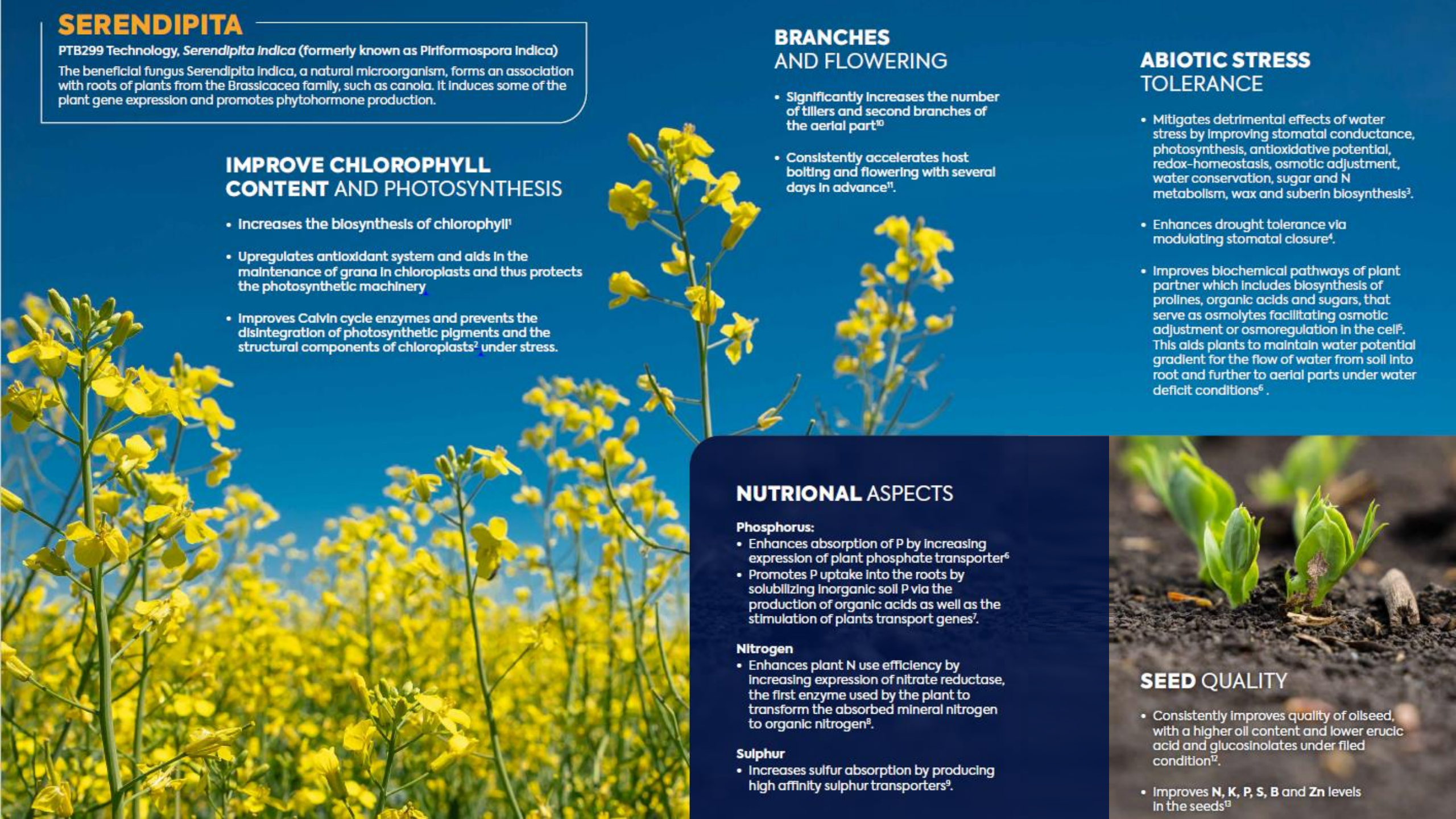
- Enhances plant N use efficiency by increasing expression of nitrate reductase, the first enzyme used by the plant to transform the absorbed mineral nitrogen to organic nitrogen⁸.

Sulphur

- Increases sulfur absorption by producing high affinity sulphur transporters⁹.

SEED QUALITY

- Consistently improves quality of oilseed, with a higher oil content and lower erucic acid and glucosinolates under field condition¹².
- Improves N, K, P, S, B and Zn levels in the seeds¹³



AGTIV® IGNITE™ L

AGTIV®



AGTIV® IGNITE™ L (previously named AGTIV® IGNITE • L for Brassicaceae)

F: Liquid
 S: 11 L (11 kg) bag-in-box
 C: Canola: 454 kg (1000 lb) or 81 ha (200 acres) of seeds
 Cereals: 9165 kg (20 205 lb) or 81 ha (200 acres) of seeds

ACTIVE INGREDIENT(S)	ORGANIC	APPLICATION MODE					FORMULATION
		GRANULAR IN-FURROW	MIXING WITH SEEDS	LIQUID IN-FURROW	LIQUID ON SEED		
S	*				●	●	

AGTIV® IGNITE™ L

AGTIV®



LIQUID ON SEED

AGTIV® IGNITE™ L



ACTIVE INGREDIENT:

S SERENDIPITA – PTB299 Technology
Serendipita indica (formerly known as *Piriformospora indica*)
2 x 10⁶ viable spores/g in liquid suspension

INERT INGREDIENT: Water

PARTICLE SIZE: < 1 mm (18 mesh)
Contains non-soluble particles

SIZE	COVERS	CODE
11 L (11 kg) – bag-in-box	Canola: 454 kg of seeds (1000 lb) Cereals: 9165 kg of seeds (20 205 lb)	714114

DIRECTIONS FOR USE

Ensure the seed treating equipment has been properly cleaned and calibrated and that applicator's tank is clean. Remove any filters on the treating system that are smaller than 1 mm (18 mesh) to prevent clogging. Shake the 11 liters (bag-in-box) well and add it completely to the applicator's tank.

For canola and other Brassicaceae, one bladder of 11 liters can treat up to 454 kg (1000 lb) or 81 ha (200 acres) of seeds.

For wheat and other cereals, one bladder of 11 liters can treat up to 9165 kg (20 205 lb) or 81 ha (200 acres) of seeds. It is recommended to dilute in non-chlorinated water to reach a total volume of liquid to add between 12 to 20 ml/kg of seeds.

- Spray on seeds and ensure full coverage.
- Product must be stored below 12°C (54°F). Do not freeze product.

YIELD INCREASE

CANOLA

YEAR	NUMBER OF SITES	UNTREATED CHECK (BU/AC)	AGTIV® IGNITE™ L YIELD (BU/AC)	YIELD INCREASE (BU/AC)
2018	1	63.5	68.0	4.5
2019	6	44.6	47.1	2.5
2020	5	37.2	39.6	2.4
2021	8	32.5	35.0	2.5
Total	20 sites	38.4 ^a	40.9 ^b	2.5 bu/ac

CEREALS

YEAR	SITE	UNTREATED CHECK (BU/AC)	AGTIV® IGNITE™ L YIELD (BU/AC)	YIELD INCREASE (BU/AC)
2021	Lethbridge	66.7	73.3	6.6
2021	Taber	39	40.5	1.5
2021	Vulcan	25.8	28.8	3
2021	Swift Current	11.8	14.4	2.6
Total	4 sites	35.8	39.2	3.4 bu/ac

[CLICK HERE FOR DETAILS](#)

PESTICIDES COMPATIBILITY

Single action Serendipita products **IGNITE** plant growth and chlorophyll content for better yields. Our inoculants are compatible with most pesticides and liquid fertilizers.

PESTICIDE	ACTIVE INGREDIENTS	CATEGORY	COMPATIBILITY
Helix® Vibrance®	Thiamethoxam Difenoconazole Metalaxyl Sedaxane Fludioxonil	Fungicide/Insecticide	Yes
Prosper® Evergol™	Clothianidin Penflufen Trifloxystrobin Metalaxyl	Fungicide/Insecticide	Yes
Lumiderm™	Cyantraniliprole	Insecticide	Yes

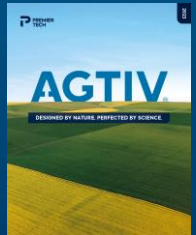
ONLINE TOOLS



LABELS



EFFICACY REPORT



BROCHURES



SOCIAL MEDIA

AND MUCH MORE:

Safety data sheets, organic certificates

