



AGTIV[®]

CANOLA & CEREALS | GUIDE 2023

The word "AGTIV" is written in large, bold, blue capital letters. A small registered trademark symbol (®) is located to the right of the letter "V". The text is superimposed on a background of rolling green hills under a clear blue sky. A dark blue horizontal bar is positioned below the text, containing the slogan "DESIGNED BY NATURE. PERFECTED BY SCIENCE." in white capital letters.

AGTIV[®]

DESIGNED BY NATURE. PERFECTED BY SCIENCE.

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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.

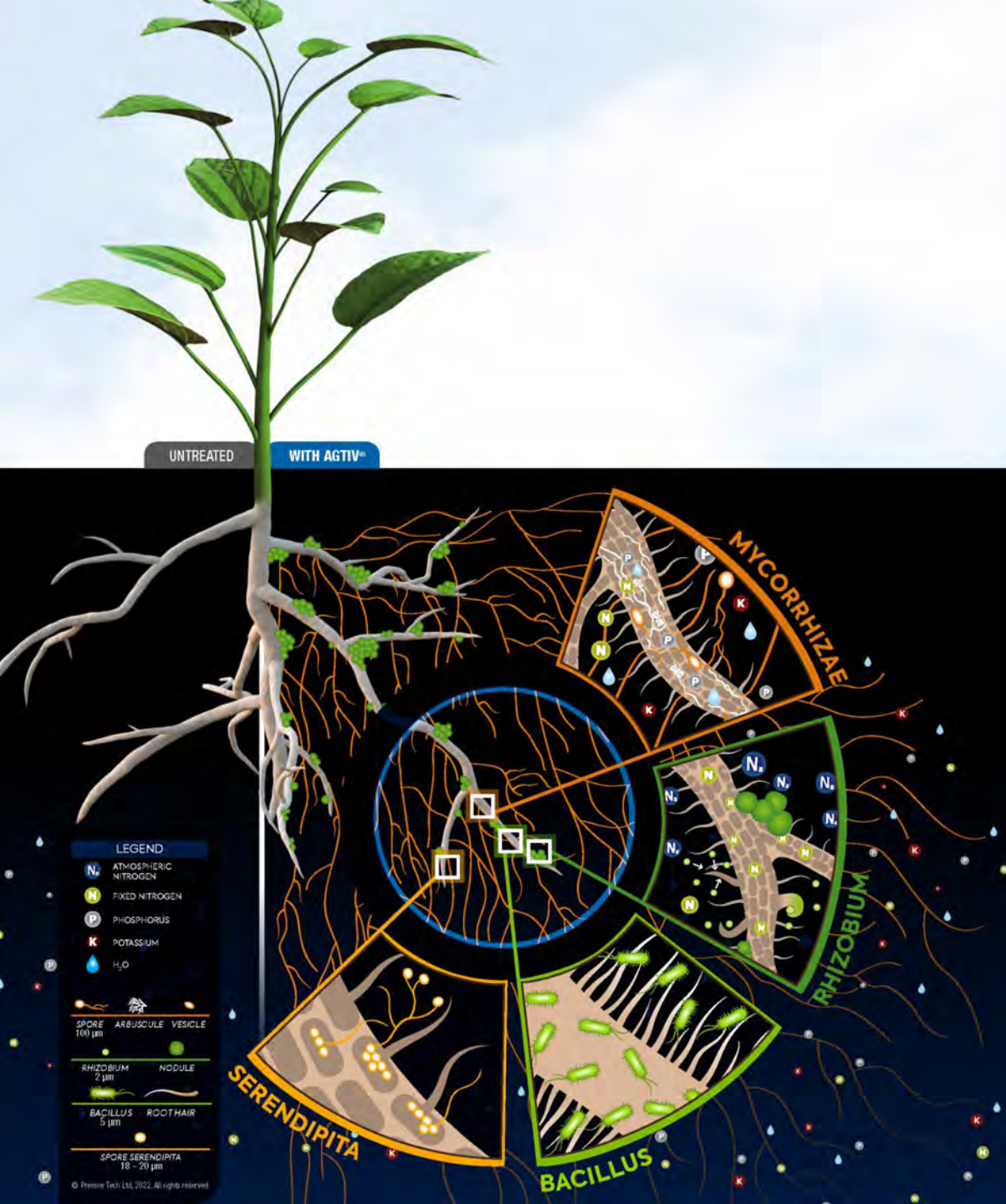
AGTIV®

**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](https://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

- ATMOSPHERIC NITROGEN
- FIXED NITROGEN
- PHOSPHORUS
- 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 part³
- Consistently accelerates host bolting and flowering with several days in advance⁴.

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 biosynthesis⁵.
- 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 cell⁶. 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 condition¹⁰.
- Improves N, K, P, S, B and Zn levels in the seeds¹¹

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 x10⁶ 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.

EFFICACY SUMMARY



[CLICK HERE FOR DETAILS](#)

CANOLA YIELD & OIL INCREASE

Table 1. Average increase of canola yield with AGTIV® IGNITE™ L for different years (2018-2022).

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
2022	7	33.6	36.2	2.6
Total	27 sites	37.2 ^a	39.7 ^b	2.5 bu/ac *

*Summary of means for AGTIV® IGNITE™ are significantly different following a combined site ANOVA and a Tukey test ($p < 0.05$) $p < 0.001$

Table 2. Average increase of canola oil content with AGTIV® IGNITE™ L for different years (2019-2022).

Year	Number of sites	Untreated check (oil%)	AGTIV® IGNITE • L (oil%)	Oil increase (%)
2019	3	41.2	42.1	0.9
2020	4	39.2	40.6	1.4
2021	5	38.1	38.5	0.4
2022	7	35.3	36.1	0.8
Total	19 sites	37.8 ^a	38.7 ^b	0.9%*

*Summary of means for AGTIV® IGNITE™ are significantly different following a combined site ANOVA and a Tukey test ($p < 0.1$) $p = 0.05$

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DURUM WHEAT YIELD INCREASE

Year	Site	Untreated check yield (bu/ac)	AGTIV® IGNITE™ L yield (bu/ac)	Yield increase (bu/ac)
2021	Lethbridge	66.7	73.3	6.6
2021	Vulcan	25.8	28.8	3
2021	Taber	39.0	40.6	1.6
2021	Swift Current	11.8	14.4	2.6
2022	Lethbridge	50.2	59.0	8.8
2022	Swift Current	54	55.8	1.8
2022	Vulcan	29.2	31.0	1.8
2022	Taber	27.3	31.8	4.5
Total	8 sites	38.0a	41.8b	3.8 bu/ac *

*Summary of means for AGTIV® IGNITE™ are significantly different following a combined site ANOVA and a Tukey test (p<0.1) p=0.05

[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](#)

