
AGTIV®
CANOLA & CEREALS GUIDE 2026

AGTIV®

DESIGNED BY NATURE. PERFECTED BY SCIENCE.

CONTENTS

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 chlorophyll[1]
- 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 chloroplasts[2] under stress.

BRANCHES AND FLOWERING

- Significantly increases the number of tillers and second branches of the aerial part[10]
- Consistently accelerates host bolting and flowering with several days in advance[11].

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 biosynthesis[3].
- Enhances drought tolerance via modulating stomatal closure[4].
- 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 cell[5]. 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 conditions[6] .

NUTRITIONAL ASPECTS

Phosphorus:

- Enhances absorption of P by increasing expression of plant phosphate transporter[6]
- 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 genes[7].

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 nitrogen[8].

Sulphur

- Increases sulfur absorption by producing high affinity sulphur transporters[9].

SEED QUALITY

- Consistently improves quality of oilseed, with a higher oil content and lower erucic acid and glucosinolates under filed condition[12].
- Improves **N, K, P, S, B** and **Zn** levels in the seeds[13]

AGTIV IGNITE® L

AGTIV®

CANOLA
CORN & CEREAL

AGTIV IGNITE® L

F: Liquid
S: 11 L (11 kg) bag-in-box
C: Canola: **454 kg (1000 lb) of seeds or 81 ha (200 acres)**
Cereal: **9165 kg (20 205 lb) of seeds or 81 ha (200 acres)**
Corn: **3000 kg (6 614 lb) of seeds or 121 ha (300 acres)**

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

PREMIER TECH

F: Formulation
S: Size
C: Coverage

✓ For organic use
* Non eligible for organic use. Contact us for more details.

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AGTIV IGNITE® L

AGTIV®

LIQUID ON SEED

AGTIV IGNITE® L

COVERS 200/300 acres

ACTIVE INGREDIENT:

S **SERENDIPITA** – PTB299 Technology
Serendipita indica (formerly known as *Piriformospora indica*)
2 x10^6 viable spores/g

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

SIZE	COVERS	CODE
11 L (11 kg) bag-in-box	**Canola & brassicaceas:** 454 kg (1000 lb) of seeds or 81 ha (200 acres) **Wheat & cereals:** 9165 kg (20 205 lb) of seeds or 81 ha (200 acres) **Corn:** 3000 kg (6 614 lb) of seeds or 121 ha (300 acres)	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 thoroughly the 11 liters bladder and add it completely to the applicator's tank.**

For wheat and other cereals, 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.

PREMIER TECH

F: Formulation
S: Size
C: Coverage

For organic use
* Non eligible for organic use. Contact us for more details.

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EFFICACY SUMMARY

CANOLA

2.4 bu/ac
6.5%

AGTIV® IGNITE™
33 sites over 7 years, Canada

BARLEY

5.4 bu/ac
8.8%

AGTIV® IGNITE™
3 sites over 1 year, Canada

SPRING WHEAT

4.8 bu/ac
10.2%

AGTIV® IGNITE™
3 sites over 2 year, Canada

DURUM WHEAT

3.6 bu/ac
9.3%

AGTIV® IGNITE™
10 sites over 3 years, Canada

CLICK HERE FOR DETAILS

PREMIER TECH

PTAGTIV.COM

EFFICACY REPORT

SUMMARY – SERENDIPITA INOCULANT

CANOLA AGTIV IGNITE

▶ PLOT & STRIP TRIALS

Research partners:

- Ag-Quest Inc.;
- Integrated Crop Management Services;
- New Era Ag Research and Technologies;
- Prairie Ag Research;
- Small Plot Inc.;
- South East Research Farm;
- Wellington Agricultural Research;
- Wheatland Conservation Area.

Research sites:

- Ontario;
- Manitoba;
- Saskatchewan;
- Alberta.

Treatments:

a) Untreated check;
b) AGTIV IGNITE® L*.

*Products applied according to manufacturers recommended rate.

Experimental design:

- 152 replicated plots per treatment in complete randomized block design:
  - 12 of 6,
  - 10 of 8;
- 5 split fields.

Table 1. **Average increase of yield for different years.**

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
2023	5	36.0	37.7	1.7
Total	**32 sites**	**37.0[a]**	**39.4[b]**	**2.4 bu/ac ***

*Summary of means 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 for different years.**

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 are significantly different following a combined site ANOVA and a Tukey test ($p<0.1$) $p=0.05$

EFFICACY REPORT

SUMMARY OF YIELD – SERENDIPITA INOCULANT

CANOLA AGTIV IGNITE

Table 1. **Summary of canola yield trials for different sites – Ontario**

Site	Year	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
Alma	2022	20	21.4	1.4

Table 2. **Summary of canola yield trials for different sites – Manitoba**

Site	Year	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
Elm Creek	2021	36.2	37.2	1
	2022	46.1	48	1.9
Portage la Prairie	2019	78	78	0
	2021	36.3	38.9	2.6
	2022	29.3	32.8	3.5
Sandy Ridge Farms	2021	41.8	44.1	2.3
Swan River	2018	63.5	68	4.5
	2019	53.7	55.4	1.7
	2020	61.2	64	2.8
	2021	46.9	48.2	1.3
	2022	60	62.2	2.2
	2023	71	72.8	1.8

Table 3. **Summary of canola yield trials for different sites – Saskatchewan**

Site	Year	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
Farm Beechy	2020	24.2	27.8	3.6
Moon Lake	2020	16.3	18.2	1.9
	2023	23.8	24.9	1.1
Redvers	2022	32.2	34.1	1.9
	2023	32.2	33.8	1.6
Saskatoon	2019	38.8	41.8	3
	2021	10.3	12.5	2.2
	2022	19.6	21	1.4
Swift Current	2019	25	27.1	2.1

Table 4. **Summary of canola yield trials for different sites – Alberta**

Site	Year	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
Josephburg	2019	46.8	53.2	6.4
	2020	47.2	49.5	2.3
	2021	23.9	25	1.1
	2023	45.6	47.7	2.1
Lillico Farms	2021	26.4	31.5	5.1
Taber	2019	25.4	27	1.6
	2020	37.3	38.5	1.2
	2022	28.2	32.7	4.5
Westline Farms	2021	29.7	32.5	2.8
Vulcan	2023	7.3	9.3	2

EFFICACY REPORT

SUMMARY OF OIL CONTENT – SERENDIPITA INOCULANT

CANOLA AGTIV IGNITE

Table 1. **Summary of canola seed oil content trials for different sites – Ontario**

site	Year	Untreated check oil	AGTIV IGNITE® L oil (%)	oil increase (%)
Alma	2022	36.3	36.9	0.6

Table 2. **Summary of canola seed oil content trials for different sites – Manitoba**

site	Year	Untreated check oil	AGTIV IGNITE® L oil (%)	oil increase (%)
Elm Creek	2021	35.1	37.1	2
	2022	37.7	37.3	-0.4
Portage la Prairie	2019	45.5	45.7	0.2
	2021	36.6	36	-0.6
	2022	30.6	35.2	4.6
Swan River	2019	49.9	52.1	2.2
	2020	38.7	40.5	1.8
	2021	37.8	37.8	0
	2022	37.3	37.7	0.4

Table 3. **Summary of canola seed oil content trials for different sites – Saskatchewan**

site	Year	Untreated check oil	AGTIV IGNITE® L oil (%)	oil increase (%)
Moon Lake	2020	41.6	43.1	1.5
Redvers	2022	36.6	36.5	-0.1
Saskatoon	2021	41.8	42.1	0.3
	2022	36.6	36.3	-0.3

Table 4. **Summary of canola seed oil content trials for different sites – Alberta**

site	Year	Untreated check oil	AGTIV IGNITE® L oil (%)	oil increase (%)
Josephburg	2019	28.1	28.6	0.5
	2020	34.7	36.6	1.9
	2021	39.1	39.7	0.6
Taber	2020	41.7	42.1	0.4
	2022	32.1	32.9	0.8

EFFICACY REPORT

SUMMARY – SERENDIPITA ON SEED INOCULANT

DURUM WHEAT

AGTIV IGNITE

▶ PLOT TRIALS

Research partners:
- Ag-Quest Inc.;
- Murphy & al.;
- Prairie Ag Research;
- Small Plot;
- Wheatland Conservation Area.

Research sites:
- Alberta;
- Saskatchewan.

Treatments:
a) Untreated check;
b) AGTIV IGNITE® L*.

*Products applied according to manufacturers recommended rate.

Experimental design:
- 72 replicated plots per treatment in complete randomized block design:
  - 4 of 6,
  - 6 of 8.

Table 1. **Summary of durum wheat yield trials for different sites**

Year	Sites	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
2023	Raymond	53.0	56.1	3.1
2023	Lethbridge	32.6	34.6	2.0
Total	**10 sites**	**38.9[a]**	**42.5[b]**	**3.6 bu/ac ***

* Yields with same letter are not statistically different according to a Tukey HSD test ($p \leq 0.05$).

EFFICACY REPORT

SUMMARY – SERENDIPITA INOCULANT

SPRING WHEAT

AGTIV IGNITE

▶ PLOT TRIALS

Research partners:
- Ag-Quest Inc.;
- New Era Technologies Inc.

Research sites:
- Manitoba;
- Saskatchewan.

Treatments:
a) Untreated check;
b) AGTIV IGNITE® L*.

*Products applied according to manufacturers recommended rate.

Experimental design:
- 12 replicated plots per treatment in complete randomized block design:
  - 2 of 6.

Table 1. **Summary of yield trials for different sites**

Year	Sites	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
2023	Swan River	68.1	74.7	6.6
2023	Saskatoon	13.9	17.6	3.7
Total	**sites**	**41**	**46.2**	**5.2 bu/ac ***

EFFICACY REPORT

SUMMARY – SERENDIPITA INOCULANT

BARLEY

AGTIV IGNITE

▶ PLOT & STRIP TRIALS

Research partners:
- Ag-Quest Inc.;
- Wheatland Conservation Area.

Research sites:
- Manitoba;
- Saskatchewan.

Treatments:
a) Untreated check;
b) AGTIV IGNITE® L*.

*Products applied according to manufacturers recommended rate.

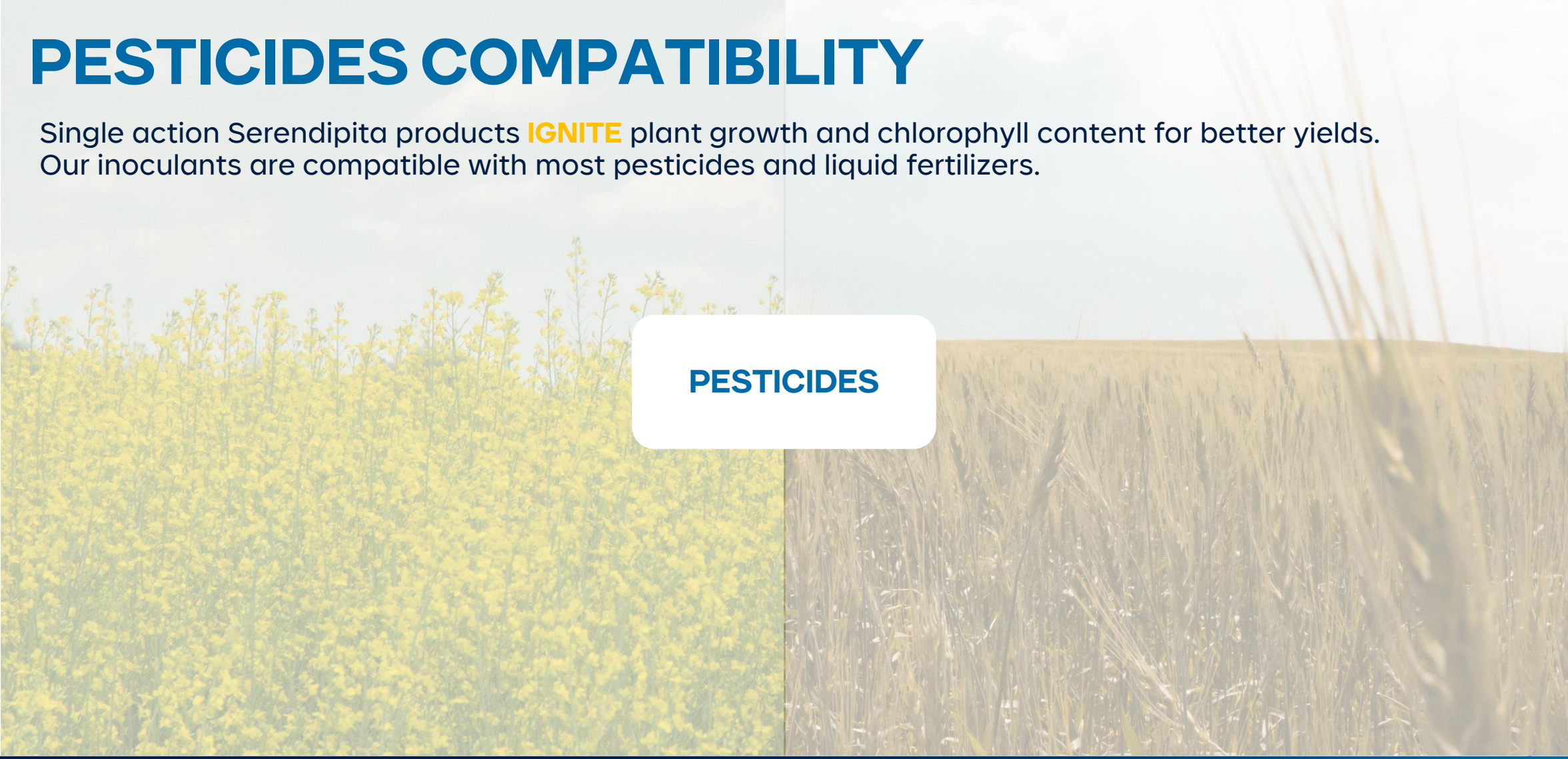
Experimental design:
- 12 replicated plots per treatment in complete randomized block design:
  - 2 of 6;
- 1 split field.

Table 1. **Summary of yield trials for different sites**

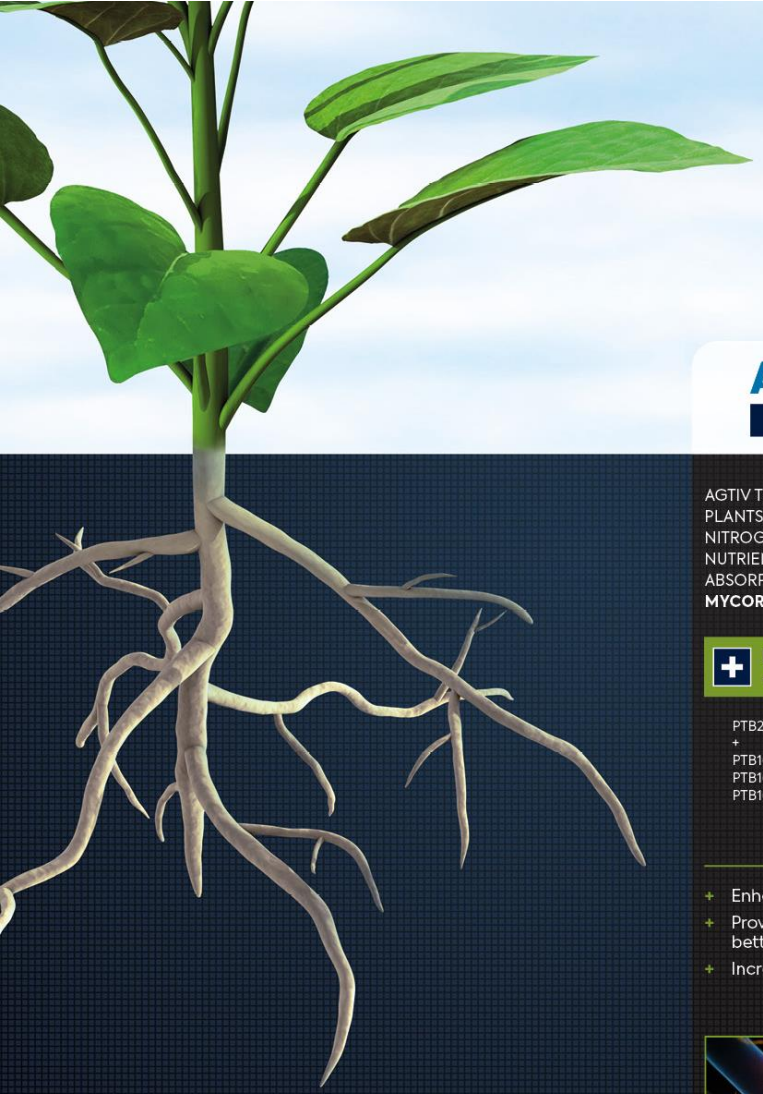
Year	Sites	Untreated check yield (bu/ac)	AGTIV IGNITE® L yield (bu/ac)	Yield increase (bu/ac)
2023	Elm Creek	101.9	104.0	2.1
2023	Swift Current	22.8	25.6	2.8
2023	Petruic Family farm	59.5	70.7	11.2
Total	**3 sites**	**61.4**	**66.8**	**5.4 bu/ac**

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.



PESTICIDES



AGTIV® TECHNOLOGIES

MORE THAN 40 years OF EXPERTISE IN ACTIVE INGREDIENTS

AGTIV. THRIVE.

AGTIV THRIVE® POWERS PLANTS BY BOOSTING NITROGEN FIXATION, NUTRIENT AND WATER ABSORPTION THANKS TO **MYCORRHIZAE** & **RHIZOBIUM**

+ MYCORRHIZAE + RHIZOBIUM

PTB297 Technology
+
PTB160 (pea & lentil)
PTB162 (soybean)
PTB161 (chickpea)

- Enhances P uptake
- Provides more energy for better nitrogen fixation
- Increases photosynthesis

AGTIV. ENRICH.

AGTIV ENRICH® STRENGTHENS LEGUME NITROGEN FIXATION AND PROVIDES A VIGOROUS ROOT SYSTEM THANKS TO **RHIZOBIUM** & **BACILLUS**

+ RHIZOBIUM + BACILLUS

PTB162 Technology
+
PTB180 Technology

- Increases nodulation and nitrogen fixation
- Improves rooting environment
- Enhances plant vigor and productivity

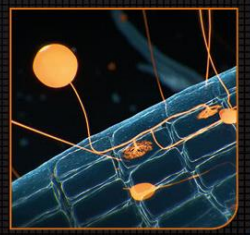
AGTIV. REACH.

AGTIV REACH® HELPS PLANTS REACH AND ABSORB MORE NUTRIENTS AND WATER THANKS TO **MYCORRHIZAE**

M MYCORRHIZAE

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

- Expands root system
- Enhances nutrient and water uptake
- Promotes plant robustness and vigor



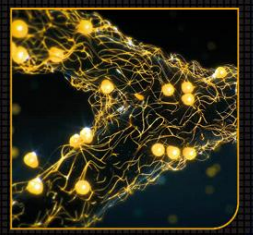
AGTIV. IGNITE.

AGTIV IGNITE® IMPROVES PHOTOSYNTHESIS AND MITIGATES IMPACT OF ENVIRONMENTAL STRESSES THANKS TO **SERENDIPITA**

S SERENDIPITA

PTB299 Technology, *Serendipita indica*

- Mitigates abiotic stresses
- Increases photosynthesis rate
- Enhances plant establishment, growth and yield



AGTIV. FUEL.

AGTIV FUEL® FEEDS LEGUMES BY FIXING ATMOSPHERIC NITROGEN THANKS TO **RHIZOBIUM**

R RHIZOBIUM

PTB160 Technology (pea & lentil) *Rhizobium leguminosarum* biovar *viciae*

PTB162 Technology (soybean) *Bradyrhizobium japonicum*

PTB161 Technology (chickpea) *Mesorhizobium onobrychidis*

- Increases nodulation
- Fixes nitrogen
- Provides nutrients to pulses

AGTIV. STIMULATE.

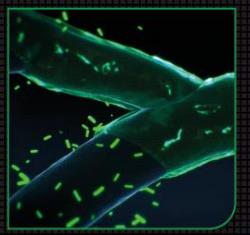
AGTIV STIMULATE® REINFORCES PLANTS WITH A HEALTHY ROOT ZONE THANKS TO **BACILLUS**

B BACILLUS

PTB180 Technology, *Bacillus pumilus*

PTB185 Technology, *Bacillus inaquosorum*

- Stimulates rooting environment
- Improves plant establishment
- Increases plant vigor and productivity



Learn more at

PTAGTIV.COM/en/technologies

CLICK ON A PICTURE TO SEE THE TECHNOLOGY IN ACTION

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®

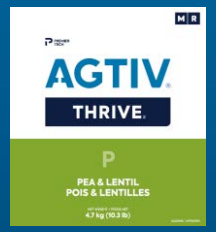
DESIGNED BY NATURE. PERFECTED BY SCIENCE.

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

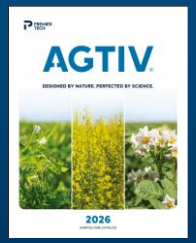
ONLINE TOOLS



LABELS

EFFICACY REPORT

APPLICATION VIDEOS



BROCHURES

SOCIAL MEDIA

AND MUCH MORE

Safety data sheets, organic certificates

PREMIER TECH

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