



# **CANOLA**

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## GUIDE 2022





# IGNITE™

## WHEN IDEAS IGNITE SCIENCE

Making a difference, is Premier Tech. Our scientists, engineers, sales and marketing specialists are always testing and working on new biologicals. In 2019, one of them, *Serendipita indica*, “showed great potential to bring added value for growers to important crops such as Canola, and our teams worked to ensure its viability and performance up to the day that seed goes into the ground” says Dr. Trepanier, scientific expert director at Premier Tech Growers and Consumers. This inoculant collaborates with Canola to IGNITE transcription of plant genes related to nutrient absorption and stress tolerance.

# 2.5 bu/ac\*

(total of 20 replicated trial sites)  
\* Statistically different vs untreated.



Mitigate  
water stress

Accelerate  
host bolting  
and flowering

Improve  
seed quality

Increase  
P, N, S  
uptake

Improve  
chlorophyll  
content and  
photosynthesis



## CANOLA GUIDE

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PRODUCT INFORMATION  
AGTIV® ON SEED



LIQUID ON SEED

AGTIV® IGNITE • L for Brassicaceae

ACTIVE INGREDIENT:

**S** ENDOPHYTE INOCULUM – PTB299 Technology  
*Serendipita indica*  
(formerly known as *Piriformospora indica*)  
2 x10<sup>8</sup> viable spores/g in liquid suspension

INERT INGREDIENT: Water

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



SIZE (case)	COVERS (1 case)	CODE (case)
11 L (11 kg) – bag-in-box	454 kg seed (1000 lb)	714114

DIRECTIONS FOR USE

A bladder of 11 liters can treat up to 454 kg (1000 lb) of canola or other Brassicaceae seeds.

- Ensure the seed treating equipment has been properly calibrated and that applicator's tank is clean.
- Shake the 11 liters (bag-in-box), and add it completely to the applicator's tank.
- Spray on seeds at a rate of 11 liters for 454 kg of seeds.
- DO NOT leave the mixing auger in operation for more than 20 minutes.
- Product must be refrigerated (2-8°C, 36-46°F). Do not freeze product.



[PTAGTIV.COM/en/ignite](https://ptagtiv.com/en/ignite)

CANOLA YIELD INCREASE

**0.9%** \* increase in oil content  
(total of 12 replicated trial sites).

\* Statistically different vs untreated.

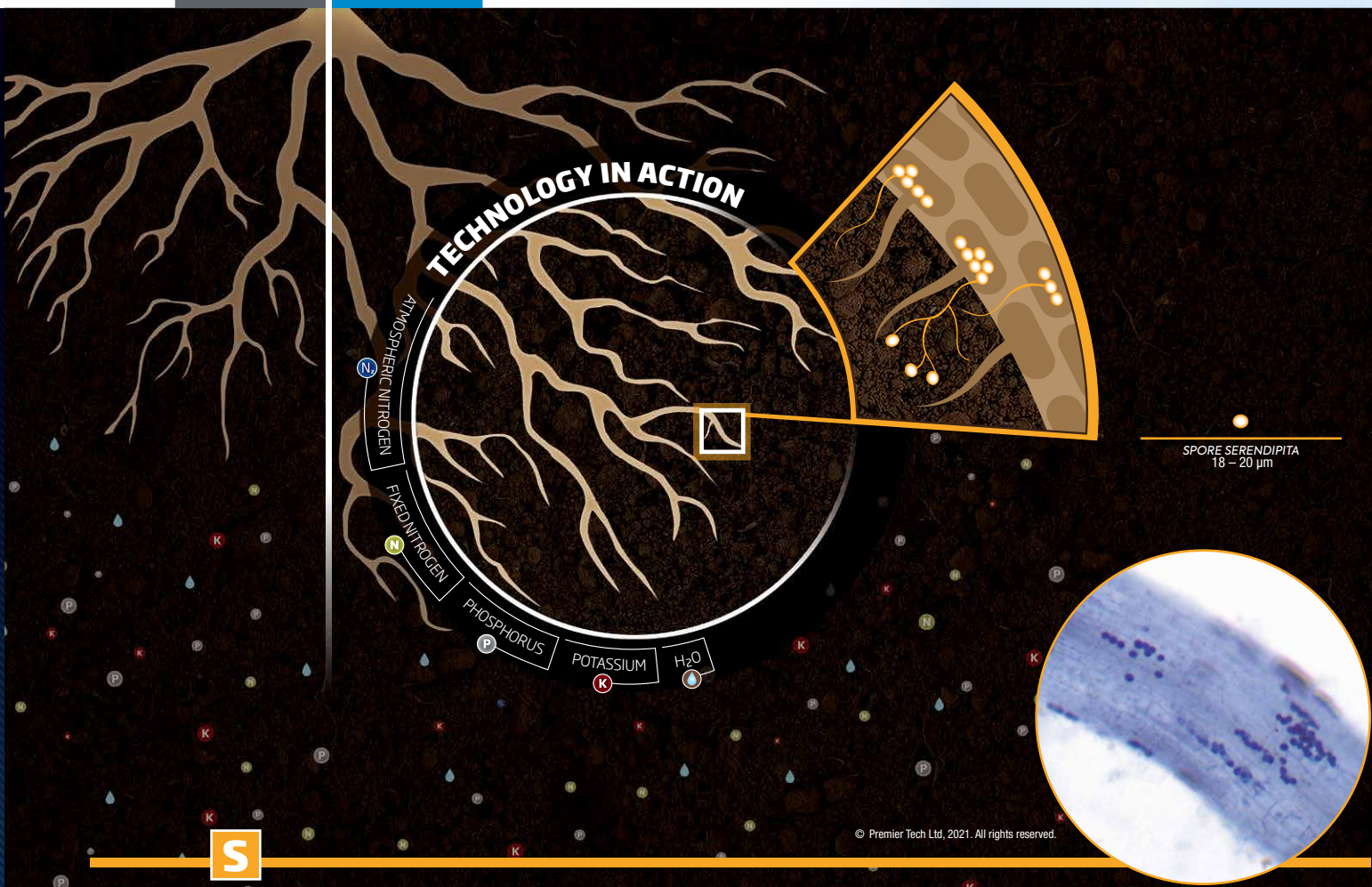


UNTREATED

WITH AGTIV®

TECHNOLOGY  
AGTIV® ON SEED

- 1 Spores germinate
- 2 Colonize root rhizosphere and epidermal root cells
- 3 Produce spores inside roots and in surrounding soil
- 4 Induce transcription of plant genes related with nutrient absorption and resistance to different stresses



**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 plants from the Brassicacea family, such as canola. It induces some of the plant gene expression and promotes phytohormone production.

- ✓ PROMOTES EARLY SEED GERMINATION
- ✓ INCREASES CHLOROPHYLL CONTENT
- ✓ BETTER PLANT ESTABLISHMENT, GROWTH AND YIELD



## IMPROVE CHLOROPHYLL CONTENT AND PHOTOSYNTHESIS

- Increases the biosynthesis of chlorophyll and chlorophyll content<sup>[1,2]</sup>
- Upregulates antioxidant system and aids in the maintenance of grana in chloroplasts and thus protects the photosynthetic machinery<sup>[3-5]</sup>
- Improves Calvin cycle enzymes and prevents the disintegration of photosynthetic pigments and the structural components of chloroplasts under stress<sup>[4,5]</sup>.

## BRANCHES AND FLOWERING

- Significantly increases the number of tillers and second branches of the aerial part<sup>[6]</sup>
- Consistently accelerates host bolting and flowering with several days in advance<sup>[6]</sup>.

## 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<sup>[4,7]</sup>.
- Enhances drought tolerance via modulating stomatal closure<sup>[4,8]</sup>.
- 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<sup>[2,4,9,10]</sup>. 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<sup>[11]</sup>.

### 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 *Brassicaceae* family, such as canola. It induces some of the plant gene expression and promotes phytohormone production.

## NUTRITIONAL ASPECTS

### Phosphorus

- Enhances absorption of P by increasing expression of plant phosphate transporter<sup>[12, 13]</sup>
- 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<sup>[13]</sup>.

### 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<sup>[14]</sup>.

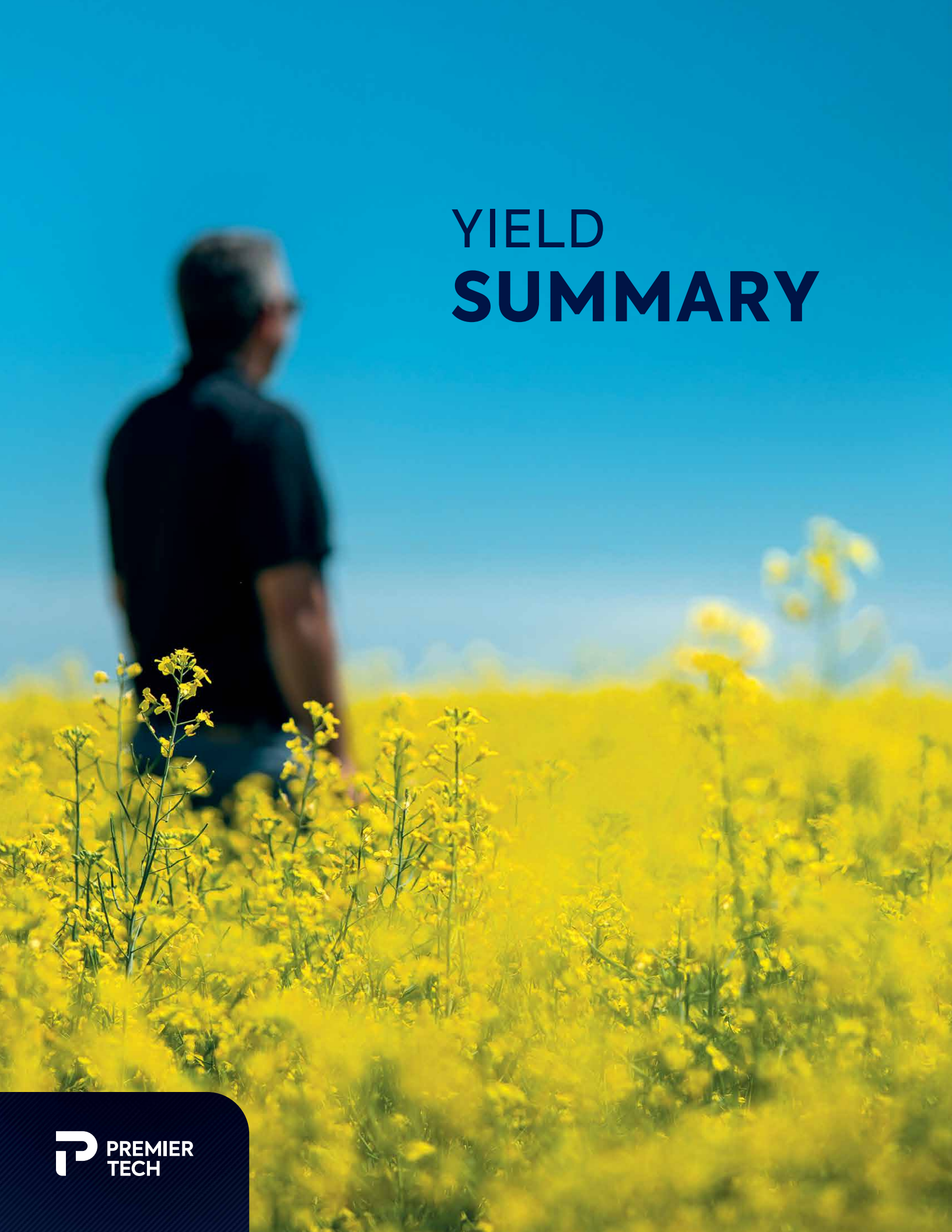
### Sulphur

- Increases sulfur absorption by producing high affinity sulphur transporters<sup>[15]</sup>.

## SEED QUALITY

- Consistently improves quality of oilseed, with a higher oil content and lower erucic acid and glucosinolates under field condition<sup>[6]</sup>.
- Improves **N, K, P, S, B** and **Zn** levels in the seeds<sup>[6]</sup>.





# YIELD SUMMARY

## EFFICACY REPORT SUMMARY – SERENDIPITA ON SEED INOCULANT



### ► GROWER SPLIT FIELDS AND PLOT TRIALS

Table 1. Average increase of canola yield with AGTIV® IGNITE • L for different years (2018-2021).

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 <sup>a</sup>	40.9 <sup>b</sup>	2.5 bu/ac *

Table 2. Summary of canola yield trials for different sites (2018-2021).

Year	site	Untreated check yield (bu/ac)	AGTIV® IGNITE • L yield (bu/ac)	Yield increase (bu/ac)
2018	Swan River	63.5	68	4.5
2019	Josephburg	46.8	53.2	6.4
2019	Portage la Prairie	78	78	0
2019	Saskatoon	38.8	41.8	3
2019	Swan River	53.7	55.4	1.7
2019	Taber	25.4	27	1.6
2019	Swift Current	25	27.1	2.1
2020	Josephburg	47.2	49.5	2.3
2020	Moon Lake	16.3	18.2	1.9
2020	Farm Beechy	24.2	27.8	3.6
2020	Swan River	61.2	64	2.8
2020	Taber	37.3	38.5	1.2
2021	Josephburg	23.9	25.0	1.1
2021	Saskatoon	10.3	12.5	2.2
2021	Elm Creek	36.2	37.2	1
2021	Swan River	46.9	48.2	1.3
2021	Portage-La-Prairie	36.3	38.9	2.6
2021	Westline Farms	29.7	32.5	2.8
2021	Lillico Farms	26.4	31.5	5.1
2021	Sandy Ridge Farms	41.8	44.1	2.3
Total	20 sites	38.4 <sup>a</sup>	40.9 <sup>b</sup>	2.5 bu/ac *

\*Summary of means for IGNITE are significantly different following a combined site ANOVA and a Tukey test (p<0.05) p=0.012



► LAB TEST

**Test description:** Compatibility of seeds treated with PTB299 – *Serendipita indica* and pesticides

**Research site:** Premier Tech Campus (QC), Canada

**Treatments for PTB299:**

- a) PTB299 in contact with Helix® Vibrance®;
- b) PTB299 in contact with Prosper® Evergol™;
- c) PTB299 in contact with Lumiderm™;

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™	Cyantranilprole	Insecticide	Yes

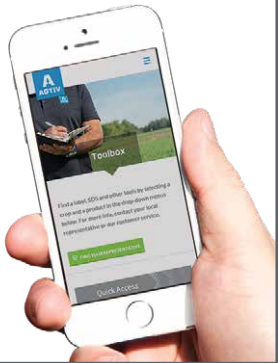
Viability on seed for up to 6 months.



# ON SEED TOOLS

## PROMO SHEET

Find PDF versions on our website or ask us to send you printed promo sheets directly to you.  
[PTAGTIV.COM/toolbox/#\\_onseed](https://PTAGTIV.COM/toolbox/#_onseed)



## ON SEED BAG TAG

Find printable versions on our website or ask us to send you printed tags directly to you.  
[PTAGTIV.COM/toolbox/#\\_onseed](https://PTAGTIV.COM/toolbox/#_onseed)

Any questions  
contact us  
1 866 454-5867

BAG TAG for  
AGTIV® ON SEED  
CANOLA



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