



ON SEED PACKAGE

SOYBEANS



ON SEED PACKAGE SOYBEANS

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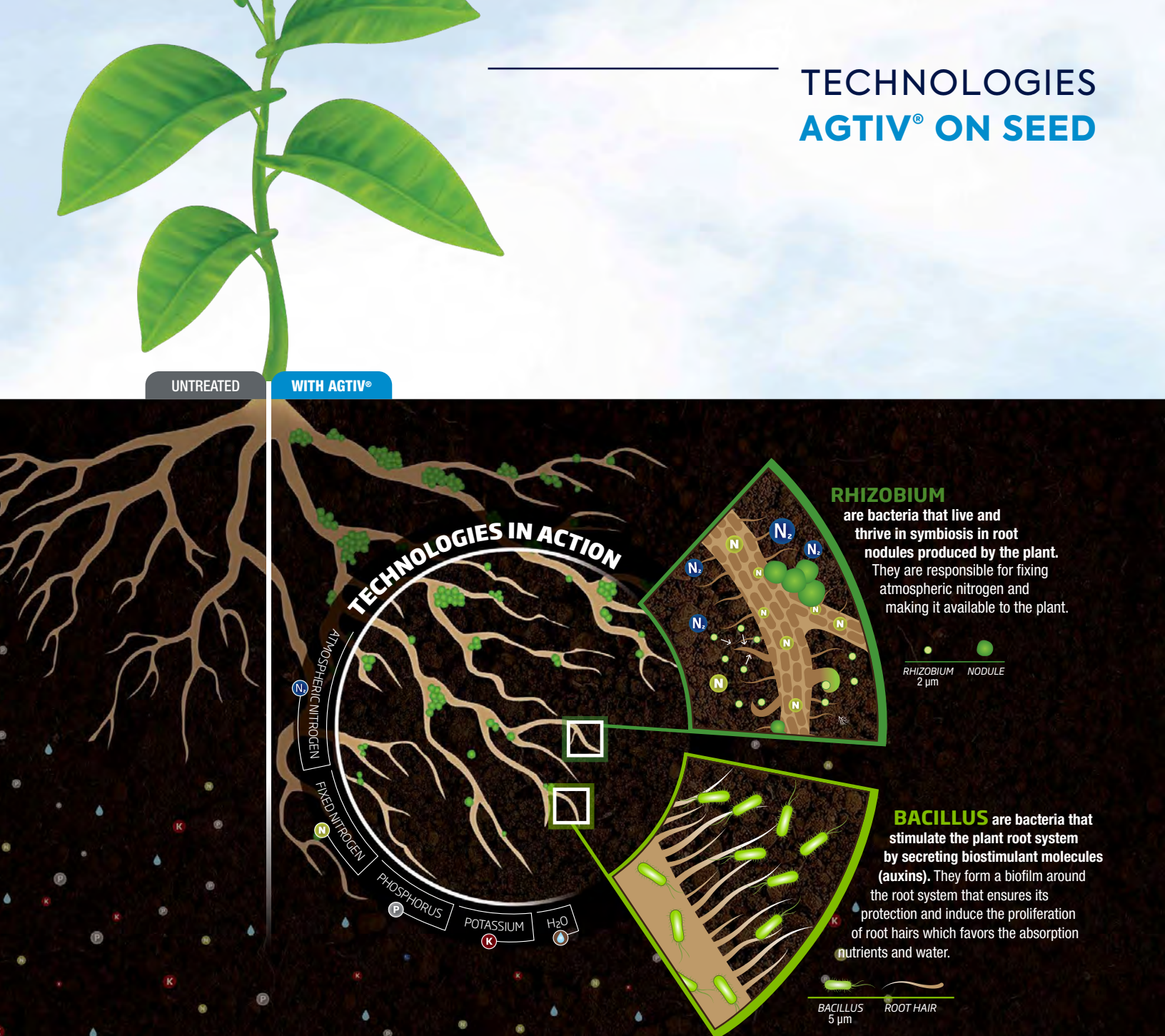
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TECHNOLOGIES AGTIV® ON SEED



B RHIZOBIUM

RHIZOBIAL INOCULUM — PTB162 technology, *Bradyrhizobium japonicum*

Production: Premier Tech's rhizobia technologies include a specific production process in a sterilized environment as well as a highly-effective quality control process for a superior inoculum.

- ✓ **FIX NITROGEN & MAKE IT AVAILABLE TO THE PLANT**

B BACILLUS

BACILLUS INOCULUM — PTB180 Technology, *Bacillus pumilus*

Production: Premier Tech uses a specific fermentation process for *Bacillus* production in a sterilized environment, including a highly-effective quality control process for a pure, superior and high-quality inoculum.

- ✓ **ACCELERATE SEED GERMINATION & PLANT ESTABLISHMENT**
- ✓ **INCREASE PLANT VIGOR & PERFORMANCE**



PRODUCT INFORMATION

AGTIV® ON SEED

LIQUID FOR IN-FURROW
OR ON SEED



ELIGIBLE FOR
ORGANIC USE

AGTIV® BRADY • Liquid for SOYBEAN

ACTIVE INGREDIENT:

R RHIZOBIAL INOCULUM – PTB162 Technology
Bradyrhizobium japonicum: 8×10^9 viable cells/g

PARTICLE SIZE: < 0.1 mm (150 mesh)
Contains non-soluble particles



SIZE	COVERS	CODE
8 L (8 kg) – bag-in-box	In-furrow: 16 ha (40 acres) On seed: 5 680 kg of seeds (250 units)	710604

DIRECTIONS FOR USE

LIQUID IN-FURROW — Apply directly in the seed row at a rate of 500 ml/ha (200 ml/acre). This product should be applied using the AGTIV® Liquid Injection Kit. To apply, prepare the product mixture and adjust the Dosatron® injection rate following the application chart and video at PTAGTIV.COM/en/liquid-injection-kit.

LIQUID ON SEED — Shake well before use and apply directly to the seed. Apply 64 ml per 45.5 kg of seeds, ensure full coverage. Optimum on-seed viability for 30 days when treated seeds are stored below 12°C (54°F).

LIQUID FOR IN-FURROW
OR ON SEED



ELIGIBLE FOR
ORGANIC USE

AGTIV® BB COMBO • Liquid for SOYBEAN

ACTIVE INGREDIENTS:

R RHIZOBIAL INOCULUM – PTB162 Technology
Bradyrhizobium japonicum: 8×10^9 viable cells/g

B BACILLUS INOCULUM – PTB180 Technology
Bacillus pumilus: 3×10^9 viable spores/ml

PARTICLE SIZE: < 0.1 mm (150 mesh)
Contains non-soluble particles



SIZE	COVERS	CODE
8 L (8 kg) – bag-in-box 300 ml – bottle	In-furrow: 16 ha (40 acres) On seed: 5 680 kg of seeds (250 units)	710814

DIRECTIONS FOR USE

ON-SEED:

Mix the bladder of *Bradyrhizobium* and the bottle of *Bacillus* in the application tank.

Bradyrhizobium: A bladder of 8 liters can treat up to 5680 kg of soybean seeds. Apply at a rate of 64 ml/45.5 kg of seeds.

Bacillus: Apply at a rate of 2.4 ml/45.5 kg of seed. Agitate constantly during application to keep bacteria in suspension. Total volume applied for the combo is 66.4 ml/45.5 kg seed.

Optimum on-seed viability for 30 days when treated seeds are stored below 12°C (54°F).

IN-FURROW: A bladder of 8 liters covers 16 ha (40 acres). Apply inoculant in the furrow, directly on the seed, at a rate of 500 ml/ha (200 ml/acre). Dilute the inoculant in the required volume of clean, non-chlorinated water. Refer to the chart on label.

OPTIMUM ON SEED VIABILITY



ELIGIBLE FOR
ORGANIC USE

AGTIV® EXTENDER • Liquid

ON-SEED:

Optimum on-seed viability for 90 days with Extender treated seeds when stored below 18°C (64°F).

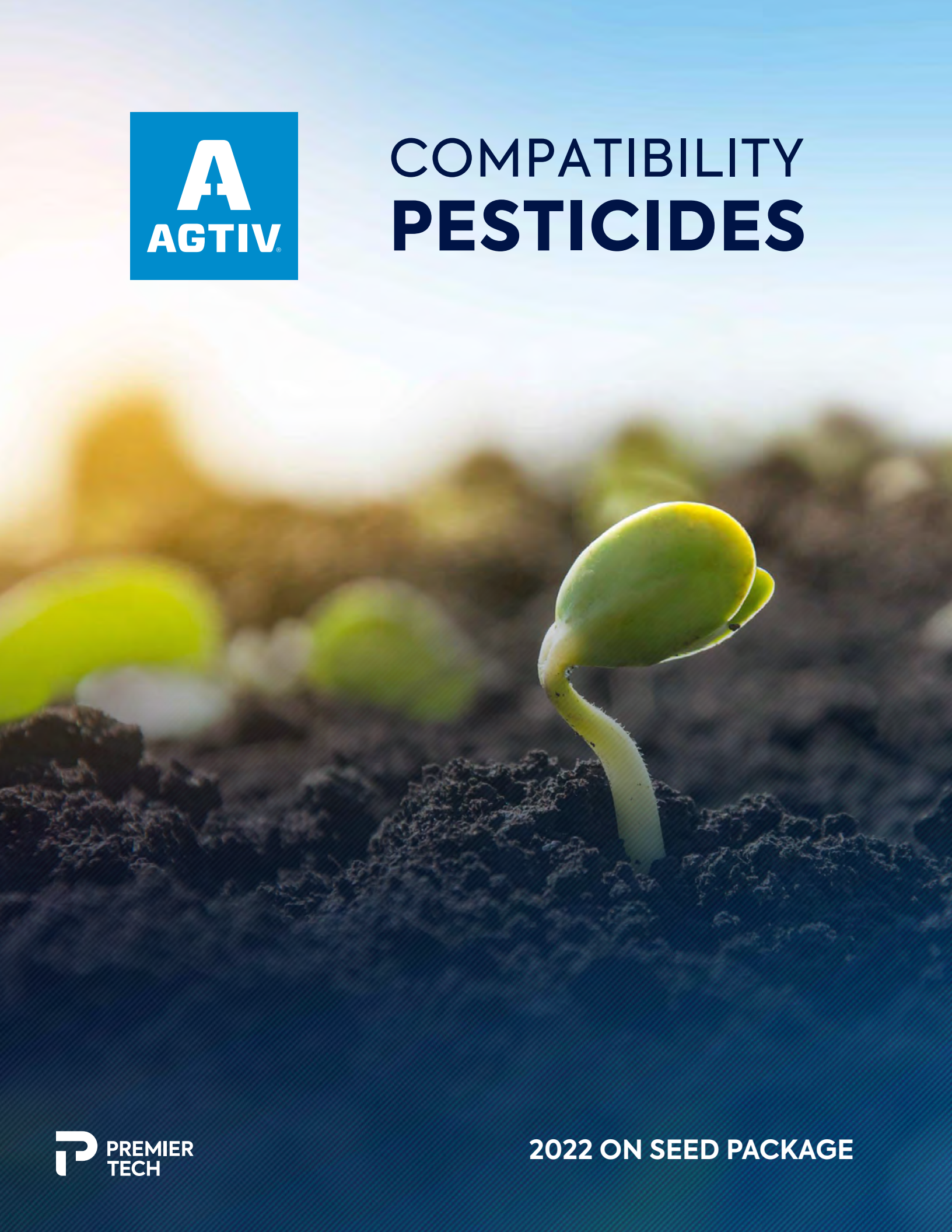


SIZE	COVERS	CODE
1.6 L (1.6 kg) bag-in-box	5 680 kg of seeds (250 units of soybean) 6 530 kg of seeds (240 bu of pulses)	710401





COMPATIBILITY **PESTICIDES**



COMPATIBILITY REPORT

2019 – BRADYRHIZOBIUM ON SEED



► LAB TEST

Test description: Nodulation tests on plants inoculated with PTB162 Technology - *Bradyrhizobium japonicum* (soybean) and fungicides applied on seeds for different periods of time prior to seeding. Treated seeds were stored in a cold room (temperature between 4°C to 8°C).

Research site: Premier Tech Campus (QC), Canada

Treatments: a) PTB162 applied at seeding;
b) PTB162 & fungicide (Cruiser Maxx Vibrance Beans) applied at seeding;
c) Seeds treated with PTB162, Cruiser Maxx Vibrance Beans & water;
d) Seeds treated with PTB162, Cruiser Maxx Beans & water;
e) Seeds treated with PTB162, Vibrance 500 FS & water;
f) Seeds treated with PTB162, Intego Solo & water.

Experimental design: 4 plants per treatment in randomized block design. Nodule count was done after 25 days.

Table 1. Summary of weighted nodule numbers

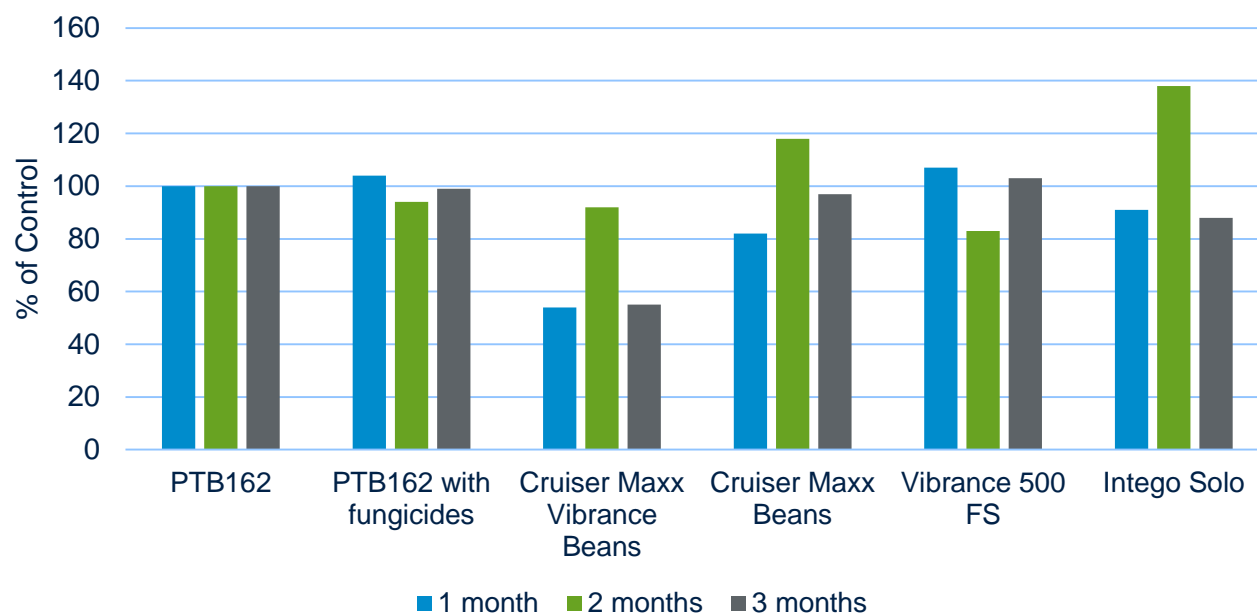


Figure 1. Plants during the test

COMPATIBILITY REPORT

2021 – BRADYRHIZOBIUM WITH PESTICIDES

► LAB TEST

Test description: Nodulation tests on soybean plants treated with ON SEED PTB162 Technology - *Bradyrhizobium japonicum* in combination with various pesticides.

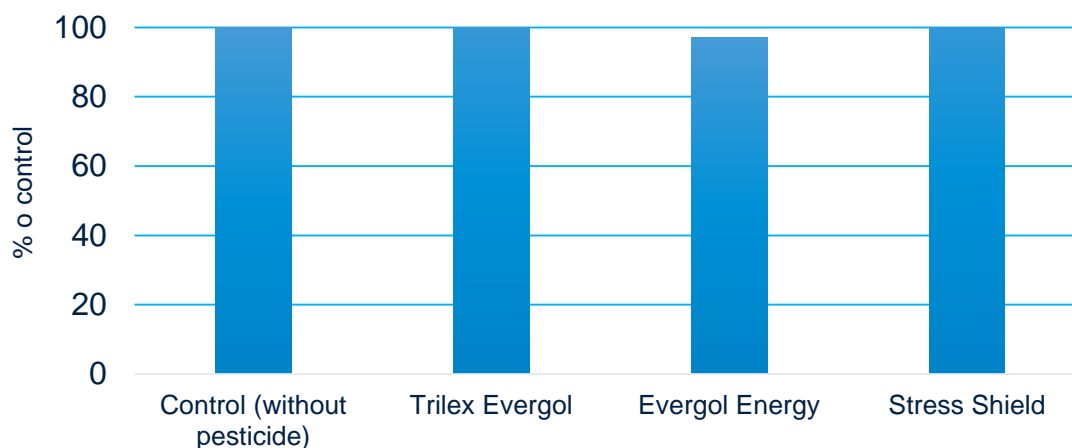
Research site: Premier Tech Campus (QC), Canada

Soybean variety: Ajico

Treatments: a) Control (PTB162 without any pesticide application);
b) PTB162 with Trilex Evergol®;
c) PTB162 with Evergol® Energy Seed Treatment Fungicide;
d) PTB162 with Stress Shield®;

Experimental design: 12 plants per treatment. All plants were inoculated with AGTIV® ON SEED BRADY • LIQUID for SOYBEAN

Table 1. Summary for the weighted nodule numbers for PTB162



COMPATIBILITY REPORT

PESTICIDES

► PESTICIDES PRODUCTS COMPATIBILITY

Bradyrhizobium japonicum PTB162 Technology

Recommended application methods: in the furrow in separate tanks or on seed application

Last update: October 2021

COMMERCIAL NAME NOM COMMERCIAL	COMPANY COMPAGNIE	ACTIVE INGREDIENT INGRÉDIENT ACTIF	CATEGORY CATÉGORIE	COMPATIBILITY COMPATIBILITÉ BRADYRHIZOBIUM (PTB162)
CRUISER MAXX® Beans	Syngenta	Thiamethoxam 22.60% Metalaxyl 1.70% Fludioxonil 1.12%	Fungicide/Insecticide Fongicide-Insecticide	YES / OUI
CRUISER MAXX® VIBRANCE™ Beans	Syngenta	Thiamethoxam 22.60% Metalaxyl 1.70% Fludioxonil 1.12% Sedaxane 500 g/L	Fungicide-Insecticide Fongicide-Insecticide	YES / OUI
CRUISER® VIBRANCE® QUATTRO	Syngenta	Thiamethoxam 61.5 g/L Difenoconazole 36.9 g/L Sedaxane 15.4 g/L Metalaxyl-M 9.2 g/L Fludioxonil 7.7 g/L	Fungicide-Insecticide Fongicide-Insecticide	YES / OUI
INTEGO™	Syngenta	Ethaboxam 383 g/L	Fungicide / Fongicide	YES / OUI
VIBRANCE® 500FS	Syngenta	Sedaxane 500 g/L	Fungicide / Fongicide	YES / OUI
EverGol-Energy	Bayer	Penflufen 38.4 g/L	Fungicide / Fongicide	YES / OUI
		Prothioconazole 76.8 g/L		
		Metalaxyl 61.4 g/L		
STRESS SHIELD® 600	Bayer	Imidacloprid 600 g/L	Insecticide / Insecticide	YES / OUI
TRILEX EverGol®	Bayer	Penflufen 154 g/L	Fungicide / Fongicide	YES / OUI
		Trifloxystrobin 154 g/L		
		Metalaxyl 317 g/L		

For most up-to-date information, visit ptAGTIV.com/toolbox

COMPATIBILITY REPORT

2021 – BRADYRHIZOBIUM WITH PESTICIDES

► LAB TEST – TANK MIXING

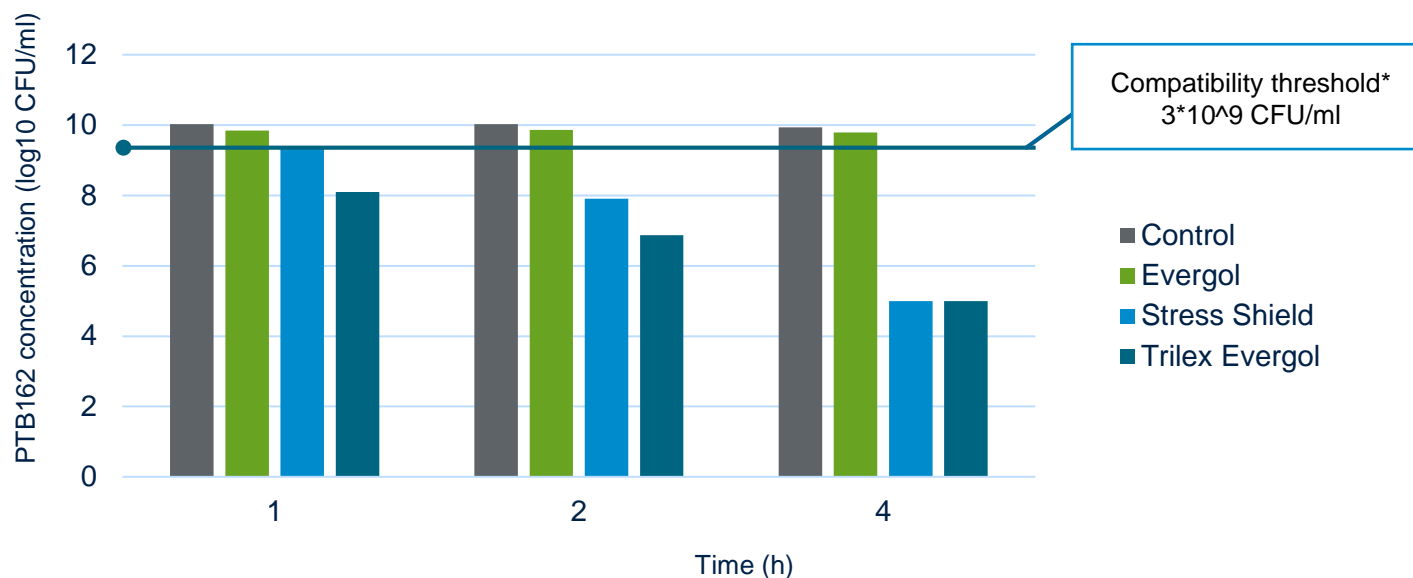
Test description: Over time survival test of PTB162 Technology *BradyRhizobium japonicum* under pesticides tank mix condition

Research site: Premier Tech Campus (QC), Canada

Treatments: a) Control (PTB162 without any pesticide);
b) PTB162 with Evergol® Energy;
c) PTB162 with Stress Shield®;
d) Trilex Evergol®

Experimental design: 3 sampling times per treatment and 3 replicates per each bacterial enumeration

Table 1. Survival over time of PTB162 on combination with pesticides



* To achieve the best performance, concentration must remain above to the compatibility threshold



SEED STORAGE



EFFICACY REPORT

2021 – ON SEED AGTIV® BRADY • Liquid for SOYBEAN



► LAB TEST

Test description: Nodulation tests on soybean plants inoculated with AGTIV® BRADY • Liquid for SOYBEAN (*Bradyrhizobium japonicum* PTB162 Technology) with the Extender after different storage lengths and temperatures

Research site: Premier Tech Campus (QC), Canada

Soybean variety: Ajico

Experimental design: 12 plants per treatment.

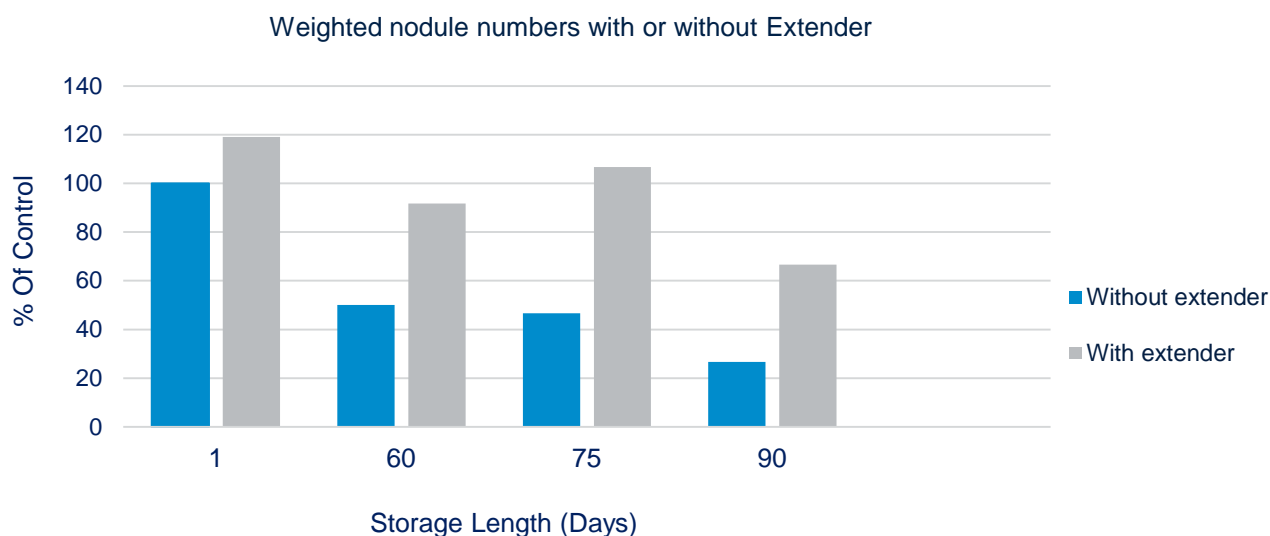
Treatments:

AGTIV® BRADY • Liquid for SOYBEAN
without Extender:

- a) stored for 1 days at 9-10°C;
- b) stored for 60 days at 9-21°C;
- c) stored for 75 days at 14-21°C;
- d) stored for 90 days at 18-22°C;

AGTIV® BRADY • Liquid for SOYBEAN
with Extender:

- e) stored for 1 days at 9-10°C;
- f) stored for 60 days at 9-21°C;
- g) stored for 75 days at 14-21°C;
- h) stored for 90 days at 18-22°C;



EFFICACY REPORT

2021 – ON SEED AGTIV® BB COMBO • Liquid for SOYBEAN



► LAB TEST

Test description: Nodulation tests on soybean plants inoculated with AGTIV® COMBO • Liquid for SOYBEAN B+B (*Bradyrhizobium japonicum* PTB162 and *Bacillus pumilus* PTB180 Technologies) with the Extender after different storage lengths and temperatures

Research site: Premier Tech Campus (QC), Canada

Soybean variety: Ajico

Experimental design: 12 plants per treatment.

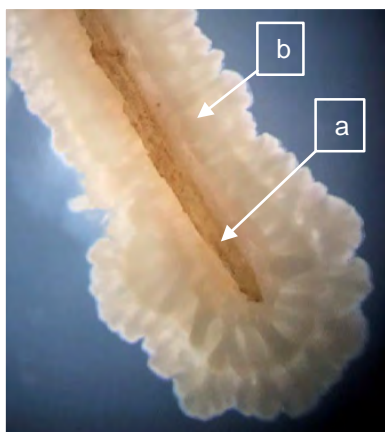
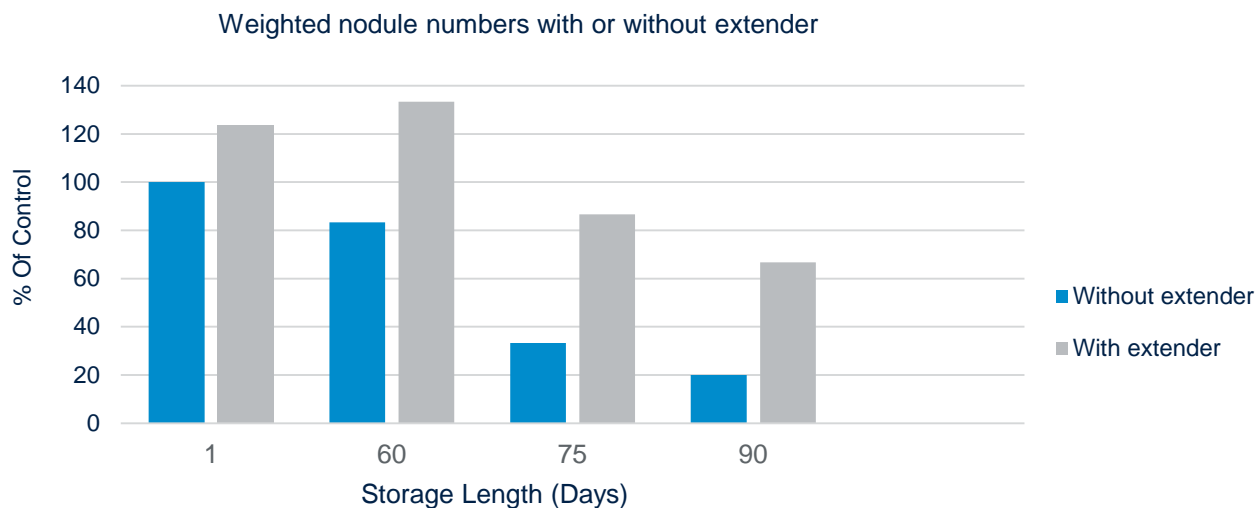
Treatments:

AGTIV® COMBO • Liquid for SOYBEAN B+B
without Extender:

- a) stored for 1 days at 9-10°C;
- b) stored for 60 days at 9-21°C;
- c) stored for 75 days at 14-21°C;
- d) stored for 90 days at 18-22°C;

AGTIV® COMBO • Liquid for SOYBEAN B+B
with Extender:

- e) stored for 1 days at 9-10°C;
- f) stored for 60 days at 9-21°C;
- g) stored for 75 days at 14-21°C;
- h) stored for 90 days at 18-22°C;



Section of soybean root sampled from growing plant (90 days seed storage) and transplanted on laboratory sterile in-vitro growing medium. a) soybean root, b) biofilm formed by the *Bacillus pumilus* PTB180 around the root confirming his establishment.

STORAGE

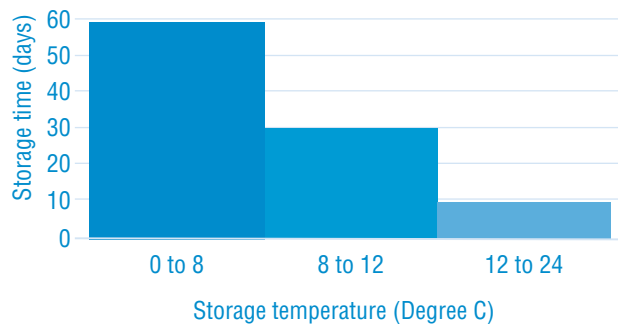
TEMPERATURE



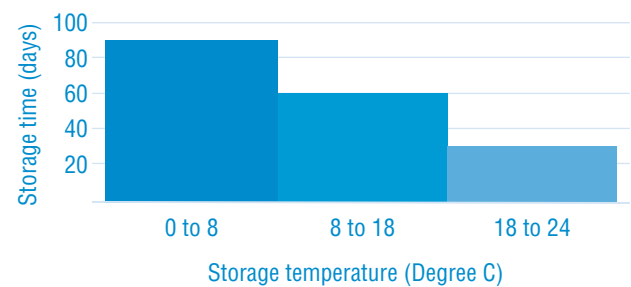
► STORAGE TIME vs TEMPERATURE FOR OPTIMUM NODULATION

In testing conditions, we established optimum nodulation when treated seeds are stored at a specified temperature according to storage length.

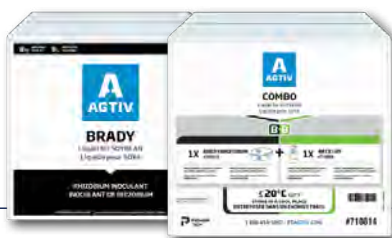
STORAGE TIME vs TEMPERATURE
without Extender



STORAGE TIME vs TEMPERATURE
with Extender



Follow the manufacturer's recommendations for handling, application and storage before seeding.





COMPATIBILITY LIQUID FERTILIZERS



COMPATIBILITY REPORT

2020 – RHIZOBIUM & BRADYRHIZOBIUM WITH ALPINE G22®



► LAB TEST

Test description: Nodulation tests on plants inoculated with PTB160 Technology - *Rhizobium leguminosarum* biovar *vicea* (peas) or PTB162 Technology - *Bradyrhizobium japonicum* (soybean) at different contact times with Alpine G22® Liquid Fertilizer prior to seeding.

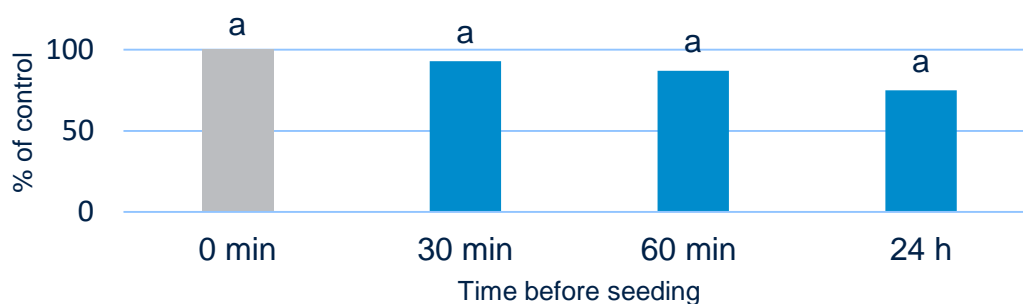
Research site: Premier Tech Campus (QC), Canada

Treatments for PTB160 and PTB162:

- a) PTB160 / PTB162 in contact with Alpine G22® directly at seeding;
- b) PTB160 / PTB162 in contact with Alpine G22® 30 minutes before seeding;
- c) PTB160 / PTB162 in contact with Alpine G22® 60 minutes before seeding;
- d) PTB160 / PTB162 in contact with Alpine G22® 24 hours before seeding.

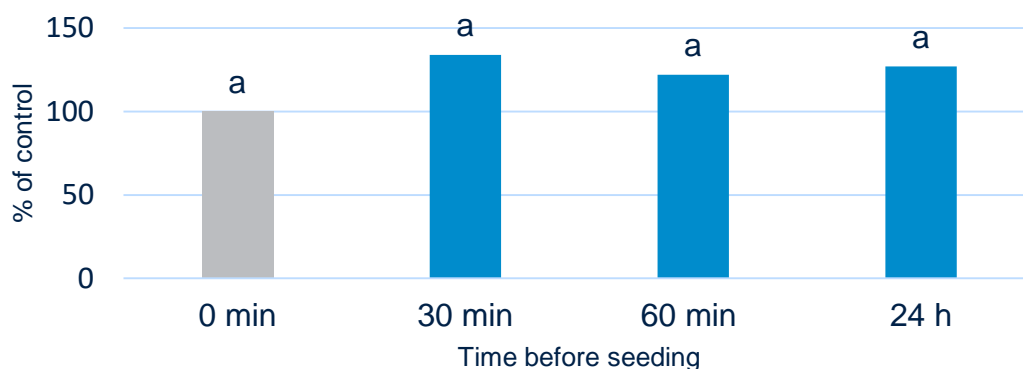
Experimental design: 6 plants per treatment. Nodulation was observed after 25 days. Fertilizer was applied at 37 l/ha (4 gal/ac).

Table 1. Summary for the weighted nodule numbers for PTB160.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

Table 2. Summary for the weighted nodule numbers for PTB162.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

COMPATIBILITY REPORT

2020 – RHIZOBIUM & BRADYRHIZOBIUM WITH AMMONIUM THIOSULFATE



► LAB TEST

Test description: Nodulation tests on plants inoculated with PTB160 Technology - *Rhizobium leguminosarum* biovar *vicea* (peas) or PTB162 Technology - *Bradyrhizobium japonicum* (soybean) at different contact times with Ammonium Thiosulfate Liquid Fertilizer prior to seeding.

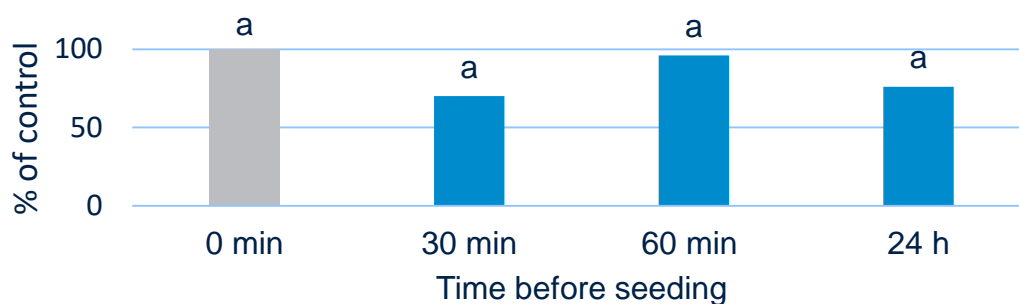
Research site: Premier Tech Campus (QC), Canada

Treatments for PTB160 and PTB162:

- a) PTB160 / PTB162 in contact with Ammonium Thiosulfate directly at seeding;
- b) PTB160 / PTB162 in contact with Ammonium Thiosulfate 30 minutes before seeding;
- c) PTB160 / PTB162 in contact with Ammonium Thiosulfate 60 minutes before seeding;
- d) PTB160 / PTB162 in contact with Ammonium Thiosulfate 24 hours before seeding.

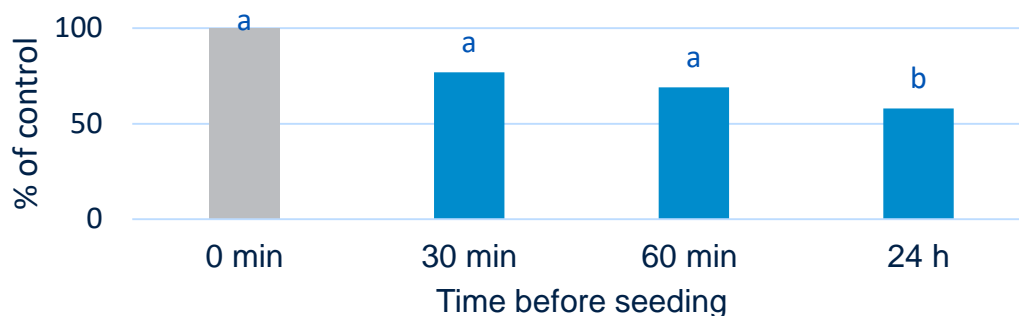
Experimental design: 8 plants per treatment. Nodulation was observed after 25 days. Fertilizer was applied at 37 l/ha (4 gal/ac).

Table 1. Summary for the weighted nodule numbers for PTB160.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

Table 2. Summary for the weighted nodule numbers for PTB162.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

COMPATIBILITY REPORT

2020 – RHIZOBIUM & BRADYRHIZOBIUM WITH AMMONIUM POLYPHOSPHATE



► LAB TEST

Test description: Nodulation tests on plants inoculated with PTB160 Technology - *Rhizobium leguminosarum* biovar *vicea* (peas) or PTB162 Technology - *Bradyrhizobium japonicum* (soybean) at different contact times with Ammonium Polyphosphate Liquid Fertilizer prior to seeding.

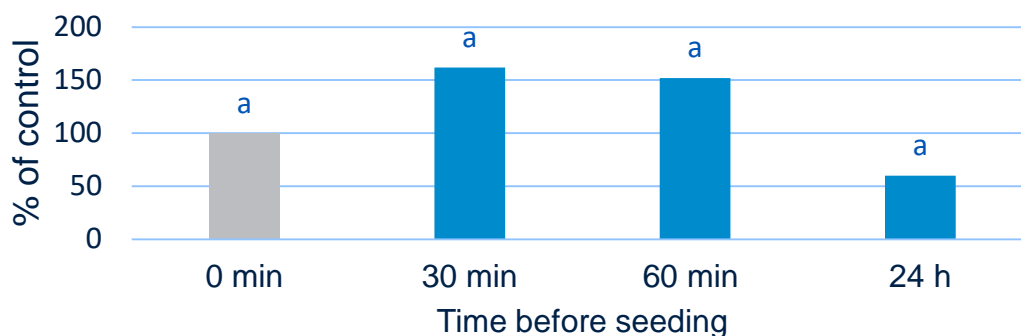
Research site: Premier Tech Campus (QC), Canada

Treatments for PTB160 and PTB162:

- a) PTB160 / PTB162 in contact with Ammonium Polyphosphate directly at seeding;
- b) PTB160 / PTB162 in contact with Ammonium Polyphosphate 30 minutes before seeding;
- c) PTB160 / PTB162 in contact with Ammonium Polyphosphate 60 minutes before seeding;
- d) PTB160 / PTB162 in contact with Ammonium Polyphosphate 24 hours before seeding.

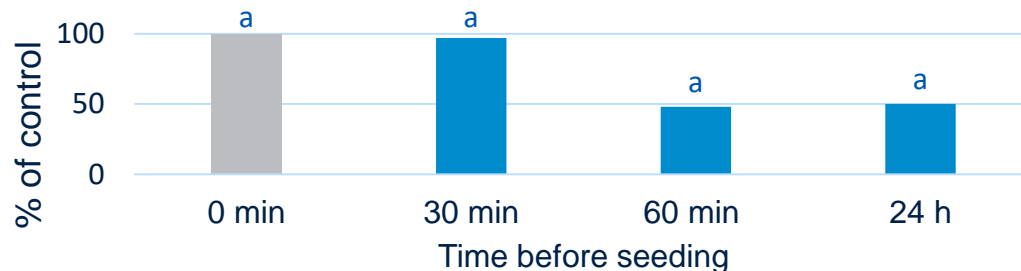
Experimental design: 8 plants per treatment. Nodulation was observed after 25 days. Fertilizer was applied at 37 l/ha (4 gal/ac).

Table 1. Summary for the weighted nodule numbers for PTB160.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

Table 2. Summary for the weighted nodule numbers for PTB162.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

COMPATIBILITY REPORT

2020 – RHIZOBIUM & BRADYRHIZOBIUM WITH UREA AMMONIUM NITRATE



► LAB TEST

Test description: Nodulation tests on plants inoculated with PTB160 Technology - *Rhizobium leguminosarum* biovar *vicea* (peas) or PTB162 Technology - *Bradyrhizobium japonicum* (soybean) at different contact times with Urea Ammonium Nitrate Liquid Fertilizer prior to seeding.

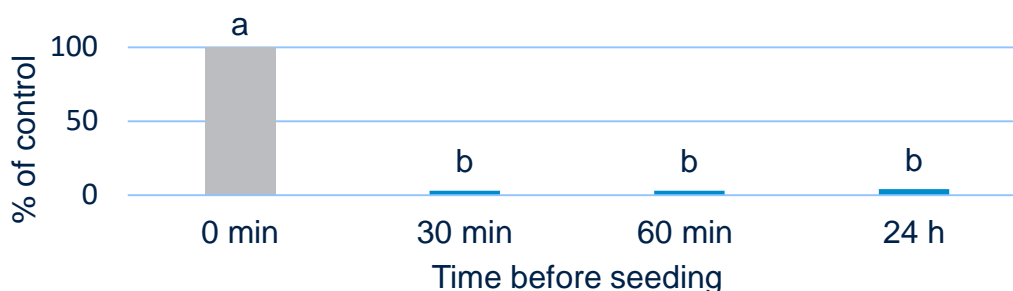
Research site: Premier Tech Campus (QC), Canada

Treatments for PTB160 and PTB162:

- a) PTB160 / PTB162 in contact with Urea Ammonium Nitrate directly at seeding;
- b) PTB160 / PTB162 in contact with Urea Ammonium Nitrate 30 minutes before seeding;
- c) PTB160 / PTB162 in contact with Urea Ammonium Nitrate 60 minutes before seeding;
- d) PTB160 / PTB162 in contact with Urea Ammonium Nitrate 24 hours before seeding.

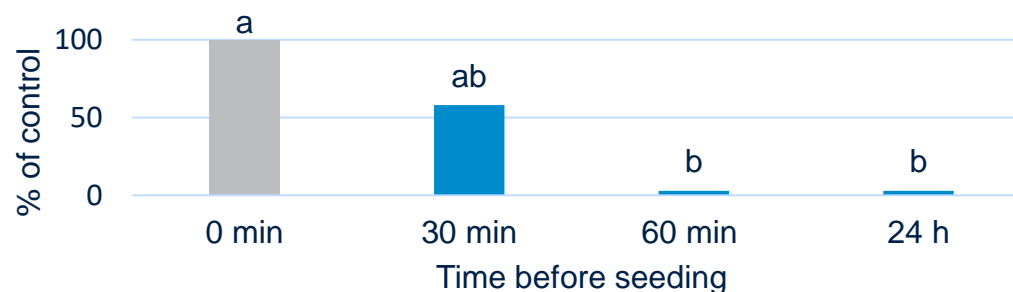
Experimental design: 8 plants per treatment. Nodulation was observed after 25 days. Fertilizer was applied at 37 l/ha (4 gal/ac).

Table 1. Summary for the weighted nodule numbers for PTB160.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

Table 2. Summary for the weighted nodule numbers for PTB162.



Lowercase letters indicate Duncan ranking of averages at 5% confidence interval.

COMPATIBILITY REPORT

2021 – COMPATIBILITY LIQUID FERTILIZERS

► REPORT

Recommended application methods: in the furrow in separate tanks or seed treatment

Last modification: October 2021

COMMERCIAL NAME	COMPANY	ACTIVE INGREDIENT	COMPATIBILITY / COMPATIBILITÉ BRADYRHIZOBIUM (PTB162)	
NOM COMMERCIAL	COMPAGNIE	INGRÉDIENT ACTIF	SEPARATE TANKS / RÉSEROIRS SÉPARÉS	TANK MIX / RÉSEROIR UNIQUE
ALPINE G22®	Alpine® Liquid Fertilizer	6-22-2	YES / OUI	YES / OUI (12 h)
Ammonium Polyphosphate	Nutrien Ltd	10-34-0	YES / OUI	YES / OUI (30 min)
Urea Ammonium Nitrate	Nutrien Ltd	28-0-0	YES / OUI	NO / NON
Ammonium Thiosulfate	Koch Nitrogen Company, LLC	15-0-0-20	YES / OUI	YES / OUI (12 h)

For most up-to-date information, visit ptAGTIV.com/toolbox



ON SEED **TOOLS**

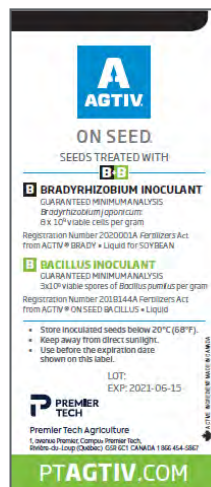


ON SEED BAG TAGS

Find printable versions on our website or ask us to send you printed tags directly to you.

PTAGTIV.COM/toolbox/#_onseed

Any questions contact us
1 866 454-5867



▲
BAG TAG for
AGTIV® ON SEED
BACILLUS + RHIZOBIUM - Liquid

▲
BAG TAG for
AGTIV® ON SEED
RHIZOBIUM - Liquid



PROMO SHEET

Find PDF versions on our website or ask us to send you printed promo sheets directly to you

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2022 ON SEED PACKAGE



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