

AGTIV®

EFFICACY REPORT

POTATO





31.6 cwt/ac 3.6 t/ha

POTATO

AVERAGE INCREASE OF
MARKETABLE YIELD

1184 sites over 11 years
North America and Europe

10%

Potato split field with AGTIV® POTATO vs untreated.
Faster plant development and larger plants on the right,
and row closure occurs sooner with AGTIV®.



Increased tuber count per plant and marketable yield on AGTIV® side.



EFFICACY REPORT

SUMMARY – MYCORRHIZAL INOCULANT

► GROWER SPLIT FIELDS AND TRIALS



POTATO

Table 1. Average increase of marketable yield* with AGTIV® REACH™ L POTATO for different territories (2011 to 2022).

Territory	Number of sites	Yield increase (t/ha)	Yield increase (cwt/ac)	Yield increase (%)
Canada	585	3.1	27.6	9.9
United States	67	3.3	29.8	10.8
Mexico	4	2.3	20.0	8.6
France & Switzerland	496	4.1	36.3	9.9
Germany	32	4.2	37.4	10.0
Total	1184 sites	3.6 t/ha*	31.6 cwt/ac**	10.0%

Table 2. Average increase of marketable yield* with AGTIV® REACH™ L POTATO for different years (2011-2022).

Year	Number of sites	Yield increase (t/ha)	Yield increase (cwt/ac)	Yield increase (%)
2011	32	2.6	23.3	6.6
2012	33	3.2	28.5	9.0
2013	70	3.6	31.9	11.2
2014	116	4.5	40.3	12.8
2015	145	4.0	35.3	10.7
2016	243	3.9	34.8	10.5
2017	213	2.7	24.0	7.7
2018	113	3.4	30.2	11.2
2019	117	3.5	31.1	8.6
2020	49	2.9	25.6	9.8
2021	41	4.1	36.4	10.2
2022	12	3.4	29.2	7.8
Total	1184 sites	3.6 t/ha*	31.6 cwt/ac**	10.0%

* Statistically significant at $p < 0.001$ following a T test.

**cwt/ac = 100 lb/ac

EFFICACY REPORT

2021 – MYCORRHIZAL AND BACILLUS INOCULANT

► PLOT TRIAL

Research partner: Progest inc.

Research site: Sainte-Croix de Lotbinière, QC

Treatments: a) Untreated Check
b) AGTIV® REACH™ L POTATO*
c) AGTIV® REACH™ L POTATO + PTB185 (*Bacillus subtilis*)*

* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Latin Square, 6 repetitions, 22 m² plots

Variety: Norland

Previous crop: Oat

Seeding details: Seeded on June 3, 2021, at a rate of 36 400 seeds/ha



POTATO

Table 1. **Summary of marketable yields per treatment.**

Treatment	Yield (cwt/ac)	Yield increase (%)
Untreated Check	313.1	-
AGTIV® REACH™ L POTATO	320.3	2.2
AGTIV® REACH™ L POTATO + PTB185 (<i>Bacillus subtilis</i>)	326.6	4.3

Plot operational notes and rain fall.

- Fertilizers:
 - Fertilization at seeding of 1333 kg/ha of 12-12-15
- Pesticides:
 - June 4, 25 and July 5, Quadris
 - June 4, Titann
 - June 9 Lorox
 - June 24, Select and Amigo
 - June 25, July 5 and August 13, Manzate
 - July 15 and 29, Coragen
 - July 23, Delegate
 - July 29 and August 13, Agrovia Top
 - August 23 and September 10, Reglone (dessicant)
- Harvested on September 23, 2021

Month	Precipitation (mm)
June	103.0
July	85.8
August	28.4
September	80.8
TOTAL	298.0

EFFICACY REPORT

2021 – MYCORRHIZAL AND BACILLUS INOCULANT

► PLOT TRIAL

Research partner: New Marc Research

Research site: Saint-Marc-sur-Richelieu, QC

Treatments: a) Untreated Check
b) AGTIV® REACH™ L POTATO *
c) AGTIV® REACH™ L POTATO + PTB185 (*Bacillus subtilis*)*

* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Latin Square, 6 repetitions, 22 m² plots

Variety: Chieftain

Previous crop: Soybean

Seeding details: Seeded on June 4, 2021, at a rate of 2200 kg/ha



POTATO

Table 1. **Summary of marketable yields per treatment.**

Treatment	Yield (cwt/ac)	Yield increase (%)
Untreated Check	103.1	-
AGTIV® REACH™ L POTATO	107.8	4.5
AGTIV® REACH™ L POTATO + PTB185 (<i>Bacillus subtilis</i>)	116.3	12.8

Plot operational notes and rain fall.

- Fertilization:
 - June 1, Broadcast of 16.9-22.2-12.7 and hilling
 - June 5, Broadcast of Urea (46-0-0)
- Pesticides:
 - June 10 and July 22, Coragen (Colorado potato beetle control)
 - August 27, Delegate (Colorado Potato Beetle control)
- Harvested on September 30, 2021

Month	Precipitation (mm)
May	15.9
June	56.3
July	47.4
August	49.2
September	55.0
TOTAL	223.8

EFFICACY REPORT

2021 – MYCORRHIZAL AND BACILLUS INOCULANT

► PLOT TRIAL

Research partner: Atlantic Agri Tech

Research site: New Glasgow, IPE

Treatments: a) Untreated Check
b) AGTIV® REACH™ L POTATO *
c) AGTIV® REACH™ L POTATO + PTB185 (*Bacillus subtilis*)*

* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Latin Square, 6 repetitions, 16 m² plots

Variety: Russet Burbank

Previous crop: Oat

Seeding details: Seeded on May 21, 2021, at a rate of 1900 kg/ha

Table 1. **Summary of marketable yields per treatment.**

Treatment	Yield (cwt/ac)	Yield increase (%)
Untreated Check	236.9	-
AGTIV® REACH™ L POTATO	242.4	2.3
AGTIV® REACH™ L POTATO + PTB185 (<i>Bacillus subtilis</i>)	247.4	4.4

Plot operational notes and rain fall.

- Fertilization of 15-15-15-4 (S)-2 (Mg) on May 1, in band
- Pesticides:
 - June 2, Lorox and Sencor (weed control)
 - June 28; July 12 and 28; August 9, Pencozeb 75DF (Blight control)
 - July 5, Zampro (Blight control) and Coragen (CPB Control)
 - July 19, Revus (Blight control) and Delegate (CPB control)
 - August 25, Echo (Blight control)
 - September 8, Reglone (top killing)
- Harvested on October 4, 2021

Month	Precipitation (mm)
May	96.8
June	45.8
July	142.4
August	39.2
September	217.2
TOTAL	541.4



POTATO

EFFICACY REPORT

2021 – MYCORRHIZAL AND BACILLUS INOCULANT

► PLOT TRIAL

Research partner: Tall Pines Agricultural Research Ltd.

Research site: Rockwood, ON

Treatments: a) Untreated Check
b) AGTIV® REACH™ L POTATO *
c) AGTIV® REACH™ L POTATO + PTB185 (*Bacillus subtilis*)*

* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Latin Square, 6 repetitions, 18 m² plots

Variety: Chieftain Red

Previous crop: Fallow

Seeding details: Seeded on May 21, 2021, at a rate of 26 000 seed pieces/ha

Table 1. **Summary of marketable yields per treatment.**

Treatment	Yield (cwt/ac)	Yield increase (%)
Untreated Check	266.7	-
AGTIV® REACH™ L POTATO	286.4	7.3
AGTIV® REACH™ L POTATO + PTB185 (<i>Bacillus subtilis</i>)	322.3	20.8

Plot operational notes and rain fall.

- Fertilization 120-60-90 on April 20, in band, at a rate of 590 kg/ha
- Pesticides:
 - May 28, Boundary LQD (weed control)
 - July 15, Bravo Zn (diseases control)
 - July 28, Coragen (CPB control)
- Harvested on November 9, 2021

Month	Precipitation (mm)
May	28
June	95.5
July	128.4
August	28.2
September	142.6
TOTAL	422.7



POTATO

EFFICACY REPORT

2021 – MYCORRHIZAL AND BACILLUS INOCULANT

► PLOT TRIAL

Research partner: Wellington Agricultural Research Ltd.

Research site: Elmira, ON

Treatments: a) Untreated Check
b) AGTIV® REACH™ L POTATO *
c) AGTIV® REACH™ L POTATO + PTB185 (*Bacillus subtilis*)*

* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Latin Square, 6 repetitions, 22 m² plots

Variety: Chieftain Red

Previous crop: Canola

Seeding details: Seeded on June 17, 2021, at a rate of 27 778 seed pieces/ha



POTATO

Table 1. Summary of marketable yields per treatment.

Treatment	Yield (cwt/ac)	Yield increase (%)
Untreated Check	298.2	-
AGTIV® REACH™ L POTATO	320.7	7.3
AGTIV® REACH™ L POTATO + PTB185 (<i>Bacillus subtilis</i>)	343.9	15.3

Plot operational notes and rain fall.

- Pesticides:
 - July 1, Sencor DF (weed control)
 - July 26, August 5, 7, 13, 19, 23 and september 9, Bravo and Revus (diseases control)
- Harvested on October 9, 2021

Month	Precipitation (mm)
June	136.4
July	79.9
August	49.9
September	177.8
TOTAL	444

EFFICACY REPORT

2019 – MYCORRHIZAL INOCULANT



POTATO

► STRIP TRIAL

Research partner: Willard Waugh & Sons LTD.

Research site: Bedeque (PEI), Canada

Treatments: a) Untreated;
b) AGTIV® REACH™ L POTATO*.

Experimental design: 20 acres strip

Potato variety: Prospect

Previous crop: Alfalfa

Seeding details: Seeded May June 7, 2019, at 6 tubers/m with 33 cm row spacing

*Liquid products applied according to manufacturers' recommended rate.

Table 1. **Summary of potato marketable yields per treatment.**

Treatment	Yield (cwt/ac)	Yield (t/ha)
Untreated	359.1	40.2
AGTIV® REACH™ L POTATO	405.2	45.4

Plot operational notes and rain fall.

- Conventional tillage
- Pesticides: Titan & Emesto
- Fertilization: 17-16-10 at 392.4 kg/ac
- Harvested on October 10, 2019.

Month	Precipitation (mm)
June	113.0
July	26.6
August	115.1
September	204.9
October	100.0
TOTAL	559.6



EFFICACY REPORT

2016 – MYCORRHIZAL INOCULANT

► GROWER SPLIT FIELDS

Research partner: EUROCELP

Research site: 75 farms (fields) in France, Europe

Treatments: a) Untreated;
b) AGTIV® mycorrhizal inoculant.

Experimental design: Every data point per field consists in an average of 3 samples each (untreated and AGTIV®).



POTATO

Table 1. Marketable potato yields per treatment (all markets)

Treatment	Yield (cwt/ac)	Yield (t/ha)	Difference (%) AGTIV® vs untreated
Untreated	412.7	45.7	
AGTIV® mycorrhizal inoculant	455.1	50.4	+9.3%*

*Statistically significant at $p \leq 0,05$ using T Test analysis for paired samples.

Figure 1. Marketable potato yields (t/ha) per treatment (all markets)

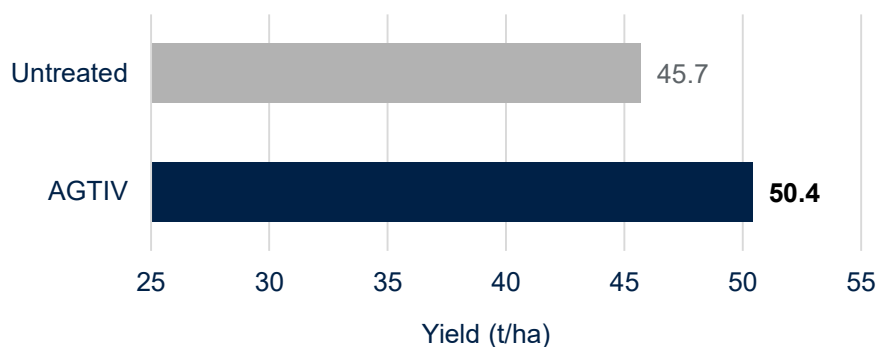
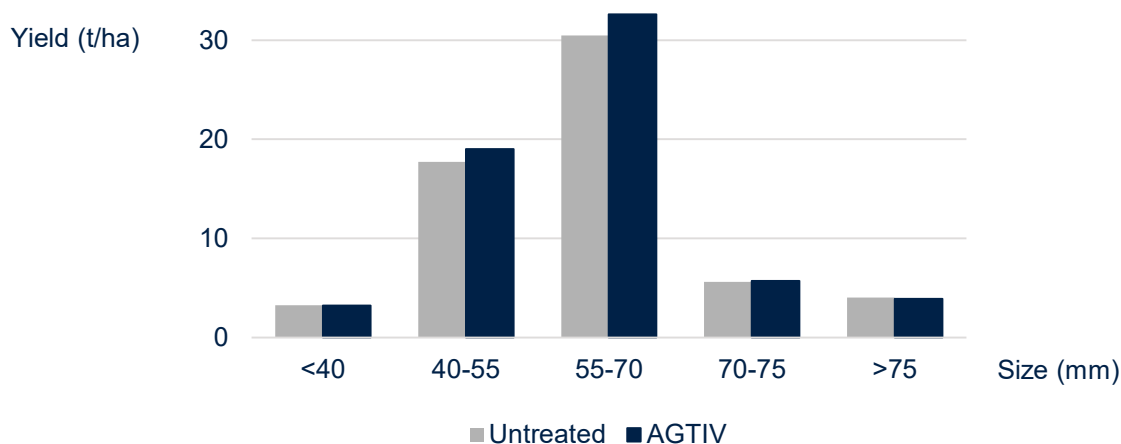


Figure 2. Potato yield (t/ha) for the tablestock market (32 plots) by marketable size (40/75 mm)



EFFICACY REPORT

2011 – MYCORRHIZAL INOCULANT

► PLOT TRIAL

Research partner: Agréco

Research site: Rawdon (Lanaudière, QC), Canada

Treatments: a) Untreated;
b) AGTIV® REACH™ L POTATO.

Experimental design: 8 replicated plots per treatment in randomized complete block design

Potato variety: Goldrush

Previous crop: Potato in 2010, Wheat in 2009

Seeding details: Each plot comprised four rows of 20 seed pieces (35.6 cm apart).
Inoculant in liquid suspension applied in furrow. Planted May 21, 2011.



POTATO

Table 1. Summary of potato yields per treatment.

Treatment	Marketable Yield (lb/plot)	Marketable Yield (kg/plot)	Average marketable potato weight (g/potato tuber)
Untreated	23.8 ^a	10.8 ^a	123 ^a
AGTIV® REACH™ L POTATO	27.3 ^b	12.4 ^b	136.5 ^b

Results followed by different letters are statistically different according to Duncan
(Marketable yield at $p \leq 0.1$; Marketable potato weight at $p \leq 0.05$)

Plot operational notes.

- Fertilization:
 - 206 kg/ha N;
 - 170 kg/ha P_2O_5 and 270 kg/ha K_2O .
- Pesticides:
 - Titan, Quadris and Actara at planting time;
 - Sencor (June 13), Polyram (June 15), Bravo (once a week from end of June until August 12), Reason (August 12).
- Planted manually in sandy soil.
- Harvested September 18, 2011.

EFFICACY REPORT

2010 – MYCORRHIZAL INOCULANT

► PLOT TRIAL

Research partner: Agréco

Research site: Lyster (Centre-du-Québec, QC), Canada

Treatments: a) Untreated;
b) AGTIV® REACH™ L POTATO.

Experimental design: 6 replicated plots per treatment in randomized complete block design.

Potato variety: Goldrush

Seeding details: Each plot of 6 m (20 feet) long with 15 seed pieces per treatment. Inoculant in liquid suspension applied in furrow. Planted May 26.



POTATO

Table 1. Summary of potato yields per treatment.

Treatment	Yield (lb/plot)	Yield (kg/plot)	Marketable tuber number per plot
Untreated	15.4 ^a	7.0 ^a	34 ^a
AGTIV® REACH™ L POTATO	20.5 ^b	9.3 ^b	48 ^b

Results followed by different letters are statistically different according to Duncan ($p \leq 0.1$)

Plot operational notes and rain fall.

- Fertilized according to recommendations by the host growers.
- Pesticides:
 - Quadris and Actara at planting time.

Month	Precipitation (mm)
May	39.8
June	104.4
July	48.8
August	112.0
September	184.8
TOTAL	489.8

Meteorological data from Québec

EFFICACY REPORT

1999 – MYCORRHIZAL INOCULANT

► PLOT TRIAL

Research partner: Laval University (Qc), Canada

Research site: Lavaltrie (QC), Canada

Treatments: a) Untreated;
b) AGTIV® REACH™ L POTATO.

Experimental design: 4 replicated plots per treatment in randomized complete block design

Potato variety: Goldrush

Seeding details: The trial plot consisted of 32 60-meter rows spaced at 0.9 meter.



POTATO

Table 1. Summary of potato yields per treatment.

Treatment	Total Yield		Marketable yield	
	(cwt/ac)	(t/ha)	(cwt/ac)	(t/ha)
Untreated	446.1 ^a	49.4 ^a	417.2 ^a	46.2 ^a
AGTIV® REACH™ L POTATO	466.9 ^b	51.7 ^b	442.5 ^b	49.0 ^b

Results followed by different letters are statistically different according to Duncan ($p \leq 0.05$)

Plot operational notes and rain fall.

- Fertilization:
 - 1800 kg/ha of 10-12-12 (3% Mg, 0.22% B) at planting time;
 - 336 kg/ha of 10-0-15 during the summer.
- Pesticides:
 - Fumigation: Vapam (Previous fall)
 - Insecticides: Cymbush, Admire, Furadan (during growth season)
 - Herbicides: Gramoxone, Lexone, Laroxe (during growth season)
- Irrigated twice: June & July.

Month	Precipitation (mm)
May	33.1
June	103.6
July	58.9
August	73.1
Septembre	123.6
TOTAL	392.3

Meteorological data from Trois-Rivières

EFFICACY REPORT 2023

CONTACT OUR DEDICATED TEAM TODAY.
WE CARE ABOUT YOUR SUCCESS!



PEOPLE AND TECHNOLOGIES MAKING A DIFFERENCE

Making a difference, this is what we are all about at Premier Tech. One team driven by a shared passion to deliver solutions that will better the lives of people, businesses and communities. At Premier Tech, People and Technologies connect in lasting, transformative ways, giving life to products and services that help feed, protect and improve our world. We are committed to creating sustainable solutions that help bring beautiful gardens to life, increase crop yields, improve the efficiency of manufacturing facilities, treat and recycle water, and much more as we keep innovating.



PT Growers and Consumers
1, avenue Premier
Campus Premier Tech
Rivière-du-Loup (Québec)
G5R 6C1 CANADA



PTAGTIV.COM
1 866 454-5867
info@ptagtiv.com

The information in this document was up-to-date at the time of printing. Because of its continuous improvement policy, Premier Tech reserves the right to halt manufacturing, change products, or revise technical data and prices without further warning or liability. Printed in Canada. © Premier Tech Ltd., 2022. Premier Tech Ltd. used under license and manufactured by Premier Horticulture Ltd. AGTIV® is a registered trademark, AGTIV® THRIVE™, AGTIV® FUEL™, AGTIV® REACH™, AGTIV® IGNITE™, AGTIV® ENRICH™ and AGTIV® STIMULATE™ are trademarks of Premier Tech Ltd. used under license by Premier Horticulture Ltd.

20221117