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# AGTIV

# **EFFICACY REPORT 2024**

# PEA & LENTIL





# EFFICACY REPORT TRIALS PICTURES

LENTIL

Lentil split field with AGTIV<sup>®</sup> THRIVE<sup>™</sup> PULSES vs competitor inoculant. Plant growth and health is enhanced on the right, and row closure occurs sooner in AGTIV<sup>®</sup> lentil fields.



Enhanced root development leads to thicker stems, which help lentils stand better and increases ease of harvest.



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#### ▶ PLOT & STRIP TRIALS

Research partners:

- Ag-Quest Inc.;
- GMAC's Ag Team;
- Prairie Ag Research Inc.;
- Small Plot Inc.;

Saskatchewan;

- Wheatland Conservation Area.
- Research sites:
- Alberta.
- **Treatments:**
- a) AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL\*;
  b) Competitor inoculant A\*;
  c) Competitor inoculant B\*;
  d) Competitor inoculant C\*;
  - e) Competitor inoculant D\*.

\*Products applied according to manufacturers recommended rate.

Experimental design:

63 replicated plots per treatment in randomized complete block design:

- 5 trials with 6,
- •1 trial with 7,
- 3 trials with 8;
- 1 strip trial with 2 replicated.

Before 2022:	
AGTIV <sup>®</sup> THRIVE ™ PEA & LENTIL was formerly known as AGTIV <sup>®</sup> PULSES	
AGTIV <sup>®</sup> FUEL <sup>™</sup> PEA & LENTIL was formerly known as AGTIV <sup>®</sup> RHIZO	

Table 1. Summary	y of	yields	(bu/ac)	per	trial
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Loosting Voo			AGTIV <sup>®</sup> THRIVE™	Cor	mpetitor inoculant		
Location	Year	Seed variety	PEA & LENTIL	Α	В	С	D
Brock	2015	N.A.	18.4	13.4	11.4		
Swift Current	2016	Small Red Lentils, Imax CL	50.1	43.3	41.1	37.7	
Coalhurst	2017	N.A.	19.5	19.1	19.2	18.5	
Vulcan	2019	Pedigree CDC Proclaim	32.6	28.8			28.4
Lethbridge	2021	Proclaim	46.8		46.4		
Vulcan	2021	Impulse	10.0		8.4		
Lethbridge	2022	Impulse	32.0		31.9		
Vulcan	2022	Impulse	38.7		38.3		
Swift Current	2022	Impulse	35.0		32.6		
Taber	2023	Impulse	30.1		25.7		27.7

#### Table 2. Summary of yields (kg/ha) per trial

			AGTIV <sup>®</sup> THRIVF™	Competitor inoculant			
Location	Year	Seed variety	PEA & LENTIL	Α	В	С	D
Brock	2015	N.A.	1237	901	766		
Swift Current	2016	Small Red Lentils, Imax CL	3367	2910	2762	2533	
Coalhurst	2017	N.A.	1310	1284	1290	1243	
Vulcan	2019	Pedigree CDC Proclaim	2192	1937			1910
Lethbridge	2021	Proclaim	3145		3118		
Vulcan	2021	Impulse	672		564		
Lethbridge	2022	Impulse	2150		2144		
Vulcan	2022	Impulse	2601		2574		
Swift Current	2022	Impulse	2352		2191		
Taber	2023	Impulse	2024		1728		1863

#### ► PLOT TRIAL

Research

partner:

Ag-Quest Inc

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Research site:Taber, ABTreatments:a) Untreated check;<br/>b) AGTIV® THRIVE™ PEA & LENTIL;<br/>c) Competitor inoculant B;

d) Competitor inoculant D.

\*Products applied according to manufacturers recommended rate.

Experimental<br/>design:Randomized Complete Block (RCB), 6 repetitions, 22.5m² plotsVariety:CDC Impulse

Previous crop: Winter rye

Seeding<br/>details:Seeded on May 26 with a cone seeder at a rate of 50 kg/ha in a<br/>clay loam soil (pH:7.5, OM:3%).<br/>Emergence on June 9.

#### OPERATIONAL NOTES AND RAIN FALL

#### Fertilisation: None

- Pesticides: Rival EC (1.73 l/ha): May 25
  - Solo ADV (0.80 l/ha): June 17
  - Regione Ion (2.47 l/ha): September 12 and 18
  - Agral 90 (0.5% v/v): September 12 and 18

Harvesting: September 21, 2023

Month	Precipitation (mm)	Irrigation (mm)
May	18.2	
June	54.8	127.0
July	8.7	279.4
August	18.8	152.4
TOTAL	100.5	558.8

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	26.3	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	30.1	3.8
Competitor inoculant B	25.7	-
Competitor inoculant D	27.7	1.4





#### ► PLOT TRIAL

Prairie Ag Research Inc. Research partner: Research site: Lethbridge, AB Treatments: a) Untreated check; b) AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL\*; c) Competitor inoculant B\*. \*Products applied according to manufacturers recommended rate. Complete Randomized Block Design, 8 repetitions, 12 m<sup>2</sup> plots. Experimental design: Variety: Impulse Previous crop: Fallow Seeding Seeded on May 23, with a cone seeder at a rate of 50 kg/ha in a details: clay loam soil (pH: 7.4, OM: 4%).

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation: None

Pesticides:

Glyphosate: May 20
Odyssey and Merge: June 30

Emergence on May 30.

Harvesting:

September 7, 2022

Month	Precipitation (mm)	
May	35.8	
June	114.5 *	
July	57.4	
August	31.7 *	
TOTAL	239.4	
* Plots were irrigated during		
those months		

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	30.1	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	32.0	1.9
Competitor inoculant B	31.9	1.8





#### ► PLOT TRIAL

Research partner:	Small Plot Inc.
Research site:	Vulcan, AB
Treatments:	a) Untreated check; b) AGTIV <sup>®</sup> THRIVE <sup>™</sup> PEA & LENTIL*; c) Competitor inoculant B*. <sup>•</sup> Products applied according to manufacturers recommended rate.
Experimental design:	Complete Randomized Block Design, 6 repetitions, 16 m <sup>2</sup> plots.
Variety:	Impulse
Previous crop:	Fallow
Seeding details:	Seeded on May 12, 2022, with a plot drill machine at a rate of 89 kg/ha in a loam soil (pH: 7, OM: 3.5%). Emergence on May 30.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	11-51-0-0 sidebanded at seeding
Pesticides:	<ul><li>Odyssey NXT: July 3</li><li>ZIVATA: twice</li></ul>
Harvesting:	August 30, 2022

Month	Precipitation (mm)
May	9.8
June	136.8
July	86.0
August	18.1
TOTAL	250.7

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	37.1	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	38.7	1.6
Competitor inoculant B	38.3	1.2



#### ► PLOT TRIAL

Wheatland Conservation Area Research partner: Research site: Swift Current, SK **Treatments:** a) Untreated check; b) AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL\*; c) Competitor inoculant B\*. \*Products applied according to manufacturers recommended rate Experimental Complete Randomized Block Design, 8 repetitions, 17 m<sup>2</sup> plots. design: Variety: Impulse Previous crop: Wheat Seeded on May 6, with a cone seeder at a rate of 67 kg/ha in a Seeding details: sandy loam soil (pH: 6.1, OM: 2.7%). Emergence on May 27.

#### OPERATIONAL NOTES AND RAIN FALL

	Fertilisation:	11-52-0 (100 kg/ha): May 6
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**Pesticides:** 

- RT540: May 2
- Centurion: June 7
- AMIGO: June 7
- Solo ADV: June 16
- Proline GOLD: July 27
- Reglone: August 8

Harvesting:

August 8, 2022

Month	Precipitation (mm)	
May	51.2	
June	37.7	
July	90.4	
August	7.5	
TOTAL	186.8	

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	32.9	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	35.0	2.1
Competitor inoculant B	32.6	-





# ▶ PLOT TRIAL

Research	arch Prairie Ag Research Inc. Table 1.		. Summary of yields and protein content per treatment			
partner: Research site:	Lethbridge, AB	Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Protein content (%)	
_		Untreated check	42.7	-	27.5	
Treatments:	a) Untreated check;	AGTIV <sup>®</sup> PULSES • Granular	46.8	4.1	27.8	
	b) AGTIV® POLSES • Granular"; c) Competitor inoculant B*	Competitor inoculant B	46.4	3.7	27.2	
Experimental design:	<sup>•</sup> Products applied according to manufacturers recommended rate. Complete Randomized Block Design, 6 repetitions, 12 m <sup>2</sup> plots.					
Variety:	Proclaim					
Previous crop:	Barley					
Seeding details:	Seeded on May 19, with a cone seeder at a rate of 50 kg/ha.					

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation:	None
Pesticides:	<ul> <li>Glyphosate: May 19</li> <li>Odyssey: June 28</li> <li>Merge: June 28</li> </ul>
Harvesting:	September 14, 2021

Month	Precipitation (mm)	
May	33.1	
June	16.5	
July	10.3	
August	35.6	
TOTAL	95.5	

# LENTIL AGTIV THRIVE.

# ► PLOT TRIAL

Research partner:	Small Plot Inc.
Research site:	Vulcan, AB
Treatments:	<ul> <li>a) Untreated check;</li> <li>b) AGTIV<sup>®</sup> PULSES • Granular*;</li> <li>c) Competitor inoculant B*.</li> <li><sup>*</sup>Products applied according to manufacturers recommended rate.</li> </ul>
Experimental design:	Complete Randomized Block Design, 6 repetitions, 16 m <sup>2</sup> plots.
Variety:	Impulse
Previous crop:	Wheat
Seeding details:	Seeded on May 15, with a plot drilling machine at a rate of 72 kg/ha.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	11-51-0-0 sidebanded at seeding
Pesticides:	Odyssey NTX: June 13
Harvesting:	August 25, 2021

Month	Precipitation (mm)	
May	3.8	
June	42.4	
July	27.6	
August	38.6	
September	41.1	
TOTAL	153.5	

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	9.1	-
AGTIV® PULSES • Granular	10.0	0.9
Competitor inoculant B	8.4	-



#### ► PLOT TRIAL

Research partner:	Small Plot Inc.
Research site:	Vulcan, AB
Treatments:	<ul> <li>a) ALPINE G22<sup>™</sup> Liquid*;</li> <li>b) ALPINE G22<sup>™</sup> and AGTIV<sup>®</sup> COMBO • Liquid for PULSES*;</li> <li>c) ALPINE G22<sup>™</sup> and Competitor inoculant A*;</li> <li>d) ALPINE G22<sup>™</sup> and Competitor inoculant D*.</li> </ul>
Experimental design:	6 replicated plots per treatment in randomized complete block design.
Variety:	Pedigree CDC Proclaim
Previous crop:	Canola
Seeding details:	Seeded May 14, at 65 lb/ac with a 22.8 cm row spacing. Products were applied in-furrow.

#### Table 1. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
ALPINE G22™ Liquid	25.0 ª	1681 <sup>a</sup>
ALPINE G22 <sup>™</sup> and AGTIV <sup>®</sup> COMBO • Liquid for PULSES	32.6 <sup>b</sup>	2192 <sup>b</sup>
ALPINE G22 <sup>™</sup> and Competitor inoculant A	28.8 <sup>ab</sup>	1937 <sup>ab</sup>
ALPINE G22 <sup>™</sup> and Competitor inoculant D	28.4 <sup>ab</sup>	1910 <sup>ab</sup>

<sup>1</sup> Yields followed by different letters are significantly different (LSD Test at p<0.05). Data from bloc 1 were not analyzed due to a high presence of *Kochia scoparia*.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	ALPINE G22™	Mor
	<b>•</b> • • • • • •	May
Pesticides:	One herbicide: June 6	June
		July
Harvosting	Dessigned September 22:	Augus
naivesting.	Combined October 17	ΤΟΤΑ

Month	Precipitation (mm)
May	16
June	50
July	16
August	25
TOTAL	107



#### PLOT TRIAL

Research<br/>partner:Wheatland Conservation AreaResearch site:Swift Current, SKTreatments:a) AGTIV® PULSES • Granular applied at 5 lb/ac\*;<br/>b) AGTIV® RHIZO • Granular for PULSES applied at 5 lb/ac\*;<br/>c) Competitor inoculant A applied at 3.6 lb/ac\*;<br/>d) Competitor inoculant B applied at 3.6 lb/ac\*;<br/>e) Competitor inoculant C applied at 5.1 lb/ac\*.

\*Products applied according to manufacturers recommended rate.

- Experimental<br/>design:8 replicated plots per treatment in randomized complete<br/>block design.
- Variety: Small Red Lentils, Imax CL
- Previous crop: Canola
- **Seeding details:** Seeded at 68 lb/ac to obtain 12 plants/ft<sup>2</sup> using Fabro plot dill, Atomjet knife openers.

Fertility: 98 lb/ac of 11-52-0 side banded

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation: None

Pesticides:

- Edge (15 lb/ac): pre-seed
- Odyssey (17.3 g/ac)
- Poast Ultra (190 ml/ac)
- Merge spray solution (0.5 l/100 l)

RT 540 (0.67 l/ac): preseed burnoff

- Priaxor (180 ml/ac): at 10% flower
- **Harvesting:** Dessicated: Reglone + Ag Surf adjuvant (700 ml/ac + 0.1 l/100 l). Combined with Wintersteiger.

Month	Precipitation (mm)	
April	7	
May	129.3	
June	85.1	
July	115	
August	58	
September	39	
October	58	

491.4

TOTAL

#### Table 1. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant)	50.1 <sup>b</sup>	3369 <sup>b</sup>
AGTIV <sup>®</sup> RHIZO • Granular for PULSES (single inoculant)	46.6 <sup>b</sup>	3134 <sup>b</sup>
Competitor inoculant A	43.3 <sup>a,b</sup>	2912 <sup>a,b</sup>
Competitor inoculant B	41.1 <sup>a</sup>	2764 <sup>a</sup>
Competitor inoculant C	37.7 <sup>a2</sup>	2535 <sup>a2</sup>

 $^1$  Average yields followed by different letters are significantly different using Duncan's multiple range test at p≤0.1.

<sup>2</sup> The difference in yield is significant at p=0.012, compared with AGTIV<sup>®</sup> PULSES • Granular (dual inoculant).

#### Data analysis:

As noted by Wheatland Conservation Area, the lower part of the field had damaging effect on all plots of replicate 7 and the first plot of replicate 8, which was the competitor inoculant B treatment. All data from those affected plots were removed from the analysis.



#### ► STRIP TRIAL

Research partner:

GMAC's Ag Team

- Research site: Brock, SK
- **Objective:** Evaluate the performance of competitor inoculant brands with an emphasis on comparing granular formulations against the competitor inoculant D liquid formulation on lentil.
- Treatments: a) AGTIV<sup>®</sup> PULSES • Granular applied at 5 lb/ac\*; b) Competitor inoculant A granular applied at 3.6 lb/ac\*; c) Competitor inoculant B granular applied at 3.6 lb/ac\*; d) Competitor inoculant C granular applied at 3.6 lb/ac\*; e) Competitor inoculant D liquid applied at 76 ml/bu\*;
  - f) Competitor inoculant D liquid applied at 76 ml/bu +
  - Competitor inoculant B granular applied at 1.8 lb/ac\*.

\* Products applied according to manufacturer's recommended rate.

- Experimental Complete randomized design (CRD) with a minimum of two design: treatment replicates. See field layout.
- **Seeding details:** Seeded on May 9, using the growers' existing machinery.

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation:	None	Month
Pesticides:	In-season herbicide, fungicide, and insecticide, applications were all registered practices and made in accordance with product labels.	May June July <b>TOTAL</b>

Harvesting: August 31, 2015, using the growers' existing machinery. Harvest data was scaled with weigh wagons then recorded.

#### Table 1. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant)	18.4	1237
Competitor inoculant A	13.4	901
Competitor inoculant B	11.4	767
Competitor inoculant C	11.8	794
Competitor inoculant D	11.3	760
Competitor inoculant D + B	11.1	747

#### **Field layout**

Precipitation

(mm) 0.8 1.43 2.31 4.54







# EFFICACY REPORT TRIALS PICTURES



Pea split field with AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL vs competitor inoculant. Enhanced plant growth and health, and sooner row closure in AGTIV<sup>®</sup> pea fields, on the right.



AGTIV<sup>®</sup> pea plants have a better developed root system with more branching, which leads to increased plant health and growth.





#### ▶ PLOT & STRIP TRIALS

Research
partners:

Ag-Quest Inc;
ICMS;

Alberta:

- New Era Ag Technologies;
- Wheatland Conservation Area.

# Research sites:

Saskatchewan;Manitoba.

#### Treatments:

- a) AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL<sup>\*</sup>;
  b) Competitor inoculant A<sup>\*</sup>;
- c) Competitor inoculant B\*;
- d) Competitor inoculant D\*.

\*Products applied according to manufacturers recommended rate.

# **Experimental** 5 design: c

57 replicated plots per treatment in randomized complete block design:

- 6 trials with 6,
- 2 trials with 8,
- 1 trial with 5.

Before 2022: AGTIV<sup>®</sup> THRIVE<sup>™</sup> was formerly known as AGTIV<sup>®</sup> PULSES AGTIV<sup>®</sup> FUEL<sup>™</sup> was formerly known as AGTIV<sup>®</sup> RHIZO

#### Table 1. Summary of yields (bu/ac) per trial

	X		AGTIV® THRIVE™	Competitor inoculant		
Location	Year	Seed variety	PEA & LENTIL	А	В	D
Fort Saskatchewan	2015	Meadow	88.6	86.2	79.5	
Swift Current	2017	Amarillo	14.0	12.7	12.4	
Saskatoon	2019	AAC Ardill	65.0	52		63.2
Portage la Prairie	2021	Carver	45.2		41.3	
Josephburg	2022	Striker	45.4		46.6	
Saskatoon	2022	ACC Ardill	36.4		35.8	
Saskatoon	2022	CDC Spectrum	30.7		28.8	
Swan River	2022	Inca	91.5		87.1	
Swan River	2023	Inca	57.2		58.4	

#### Table 2. Summary of yields (kg/ha) per trial

			AGTIV® THRIVE™	Competitor inoculant		
Location	Year	Seed variety	PEA & LENTIL	А	В	D
Fort Saskatchewan	2015	Meadow	5958	5793	5342	
Swift Current	2017	Amarillo	941	853	833	
Saskatoon	2019	AAC Ardill	4371	3497		4250
Portage la Prairie	2021	Carver	3037		2775	
Josephburg	2022	Striker	3051		3132	
Saskatoon	2022	ACC Ardill	2446		2406	
Saskatoon	2022	CDC Spectrum	2063		1935	
Swan River	2022	Inca	6149		5853	
Swan River	2023	Inca	3847		3927	

# ► PLOT TRIAL

New Era Ag Technologies	T
Swan River, MB	
a) Untreated check; b) AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL; c) Competitor inoculant B.	
'Products applied according to manufacturers recommended rate.	
Randomized Complete Block (RCB), 6 repetitions, 16.95 m <sup>2</sup> plots	
Inca treated with Insure Pulse	
Wheat	
Seeded on May 13 with a direct drill seeder at a rate of 240 lb/ac in loam soil (pH: 6.9, OM:4.8%). Emergence on May 24.	a
	New Era Ag Technologies Swan River, MB a) Untreated check; b) AGTIV <sup>®</sup> THRIVE <sup>™</sup> PEA & LENTIL; c) Competitor inoculant B. <sup>*</sup> Products applied according to manufacturers recommended rate. Randomized Complete Block (RCB), 6 repetitions, 16.95 m <sup>2</sup> plots Inca treated with Insure Pulse Wheat Seeded on May 13 with a direct drill seeder at a rate of 240 lb/ac in loam soil (pH: 6.9, OM:4.8%). Emergence on May 24.

# OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	11-52-0 (38 lb/ac): May 13
Pesticides:	<ul> <li>Arrow-All-In-One (100 ml/ac): June 2</li> <li>Coragen (101 ml/ac): June 2</li> <li>Viper ADV (400 ml/ac): June 8</li> <li>Delaro (356 ml/ac): June 30</li> </ul>
Harvesting:	August 15, 2023

Month	Precipitation (mm)
May	19.7
June	45.3
July	33.0
August	118.2
TOTAL	216.2

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	53.6	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	57.2	3.6
Competitor inoculant B	58.4	4.8





# ► PLOT TRIAL

Research partner:	Integrated Crop Management Services	Table 1
Research site:	Josephburg, AB	
Treatments:	a) Untreated check; b) AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL; c) Competitor inoculant B*.	Untrea AGTIV Compe
	Products applied according to manufacturers recommended rate.	
Experimental design:	Complete Randomized Block Design, 8 repetitions, 15 m <sup>2</sup> plots.	
Variety:	Stricker	
Previous crop:	Fallow	
Seeding details:	Seeded on June 20, with a cone seeder at a rate of 160 kg/ha in a loam soil (pH: 5.7, OM: 8%). Emergence on July 3.	l

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	NPKS 80-30-20-20 kg/ha: pre seeding	Month	Precipitation (mm)
		June	109.3
Pesticides:	Merge: June 1	July	35
	Odyssey: June 1	August	34.4
	Roundup WeatherMax: June 1	September	10.6
Hamman Cara	0	TOTAL	189.3
Harvesting:	September 2022		



Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Protein content (%)
Untreated check	44.1	-	21.3
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	45.4	1.3	22.2
Competitor inoculant B	46.6	2.5	20.9

## ► PLOT TRIAL

Research partners:	Integrated Crop Management Services		
Research sites:	Saskatoon, SK		
Treatments:	a) Untreated check; b) AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL; c) Competitor inoculant B*.		L L L
	*Products applied according to manufacturers recommend	ed rate.	
Experimental design:	Complete Randomized Block Design, 8 r	epetitions, 15	m <sup>2</sup> plots.
Variety:	ACC Ardill		
Previous crop:	Wheat		
Seeding details:	Seeded on May 26, with a cone seeder a clay soil (pH: 8, OM: 8.8%). Emergence on June 15.	t a rate of 22	5 kg/ha in a
OPERATIONAL	NOTES AND RAIN FALL		
Fertilisation:	80-20-10-20 kg/ha NPKS pre seeding + 2	28% Urea	
		Month	Precipitation (mm)
Pesticides:	Viper ADV: July 4	May	25.8
	Regione ion: August 31	June	38.0
		July	46.5
Harvesting:	September 6, 2022	August	25.6

TOTAL

135.9



Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Protein content (%)
Untreated check	34.8	-	17.5
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	36.4	1.6	18.0
Competitor inoculant B	35.8	1.0	17.1

#### ▶ PLOT & STRIP TRIALS

Ag-Quest inc. Research partner: Research site: Saskatoon, SK a) Untreated check; Treatments: b) AGTIV<sup>®</sup> THRIVE<sup>™</sup> PEA & LENTIL ; c) Competitor inoculant B\*. \*Products applied according to manufacturers recommended rate. Experimental Complete Randomized Block Design, 6 repetitions, 8.2 m<sup>2</sup> plots. design: Variety: **CDC** Spectrum Previous crop: Oats Seeding Seeded on May 27, 2022, with a cone seeder and a techno details: till drill opener at a rate of 160 kg/ha in a loam soil (pH: 5.8, OM: 3.5%). Emergence on June 3.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	11-52-0 side banded (72 kg/ha)
Pesticides:	<ul> <li>Aim EC: May 11</li> <li>Roundup WeatherMax: May 11</li> <li>Centurion: June 8</li> <li>Basagran Forté: June 21, July 4 &amp; 12</li> <li>Assure II: June 21, July 4 &amp; 12</li> <li>Matador herbicide: August 6</li> <li>Reglone Ion: August 16</li> </ul>
Harvesting:	August 24, 2022

Month	Precipitation (mm)
May	27.3
June	37.1
July	41.3
August	15.8
TOTAL	121.5

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated check	27.2	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	30.7	3.5
Competitor inoculant B	28.8	1.6



#### ▶ PLOT TRIAL

Research partner:	New Era Ag Research
Research site:	Swan River, MB
Treatments:	a) Untreated check; b) AGTIV <sup>®</sup> THRIVE <sup>™</sup> PEA & LENTIL*; c) Competitor inoculant B*.
	*Products applied according to manufacturers recommended rate.
Experimental design:	Complete Randomized Block Design, 6 repetitions, 15 m <sup>2</sup> plots.
Variety:	Inca
Previous crop:	Canola
Seeding details:	Seeded on May 24, with a cone seeder at a rate of 286 kg/ha in a clay loam soil (pH: 6.5, OM: 5.3%). Emergence on June 3.

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation:	MAP 11-52-0 on May 25 (47 kg/ha)
Pesticides:	<ul> <li>Coragen: June 9</li> <li>Pounce: June 9</li> <li>Viper ADV: June 22</li> <li>Priaxor: July 18</li> <li>Guardsman : August 25</li> </ul>

#### Harvesting:

August 31, 2022

Month	Precipitation (mm)
May	14.5
June	80.0
July	32.3
August	48.8
September	58.9
TOTAL	234.5

#### Table 1. Summary of yields per treatment

Treatment	Yield <sup>1</sup> (bu/ac)	Yield increase (bu/ac)
Untreated check	85.3 <sup>b</sup>	-
AGTIV <sup>®</sup> THRIVE™ PEA & LENTIL	91.5 <sup>a</sup>	6.2
Competitor inoculant B	87.1 <sup>b</sup>	1.8

<sup>1</sup> Yields with same letter are not statistically different according to a Tukey HSD test (p≤0.1).



#### ► PLOT TRIAL

Research partner:	Integrated Crop Management Services
Research site:	Portage la Prairie, MB
Treatments:	<ul> <li>a) Untreated check;</li> <li>b) AGTIV<sup>®</sup> PULSES • Granular*;</li> <li>c) Competitor inoculant B*.</li> <li><sup>*</sup>Products applied according to manufacturers recommended rate.</li> </ul>
Experimental design:	Complete Randomized Block Design, 6 repetitions, 24.4 m <sup>2</sup> plots.
Variety:	Carver
Previous crop:	Wheat
Seeding details:	Seeded on June 3, with a cone seeder at a rate of 200 kg/ha.

#### OPERATIONAL NOTES AND RAIN FALL

	Ferti	lisation:	
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ion: None

- Pesticides:
- Viper ADV: June 25
- Basagran Forte: July 14
- Assure II: July 14
- Cygon: July 27

Harvesting:

September 1, 2021

Month	Precipitation (mm)
June	90.0
July	78.4
August	68.3
TOTAL	236.7

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Protein content (%)
Untreated check	41.6	-	17.8
AGTIV <sup>®</sup> PULSES • Granular	45.2	3.6	18.4
Competitor inoculant B	41.3	-	17.8



#### ► PLOT TRIAL

Research partner:	Integrated Crop Management Services
Research site:	Saskatoon, SK
Treatments:	<ul> <li>a) ALPINE G22<sup>™</sup> Liquid*;</li> <li>b) ALPINE G22<sup>™</sup> and AGTIV<sup>®</sup> COMBO • Liquid for PULSES*;</li> <li>c) ALPINE G22<sup>™</sup> and Competitor inoculant A*;</li> <li>d) ALPINE G22<sup>™</sup> and Competitor inoculant D*.</li> </ul>
Experimental design:	6 replicated plots per treatment in randomized complete block design.
Variety:	AAC Ardill
Previous crop:	Wheat

SeedingSeeded with a cone seeder June 1 at 201 lb/ac with a 15.2 cm rowdetails:spacing. Products were applied in-furrow.

Precipitation

(mm) 84.8

67.6

20.3

39.5

212.2

Month

September

June

July

August

TOTAL

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	
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Urea 28% (0.8 lb/ac): July 12

- **Pesticides:**
- Viper: July 12
- Centurion: July 29
- Matador: July 8 and 13

Harvesting:	Combined with a Small Plot Combine on October 11, 2	2019.
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Treatment	Yield (bu/ac)	Yield (kg/ha)
ALPINE G22™ Liquid	56.0	3766
ALPINE G22 <sup>™</sup> and AGTIV <sup>®</sup> COMBO • Liquid for PULSES	65.0	4371
ALPINE G22 <sup>™</sup> and Competitor inoculant A	52.3	3517
ALPINE G22 <sup>™</sup> and Competitor inoculant D	63.2	4250

#### STRIP TRIAL

Research partner:	Down to Earth + PAMI
Research site:	Saskatoon, SK
Treatments:	<ul> <li>a) AGTIV<sup>®</sup> PULSES • Granular applied at 5.0 lb/ac + Taurus Advanced Acre<sup>™*</sup> (TAA) + fungicide application;</li> <li>b) AGTIV<sup>®</sup> RHIZO • Granular for PULSES in granular form applied at 4.0 lb/ac + Designed Fertility Program**.</li> </ul>
Experimental design:	2 replicated strips for a total of 610 ft <sup>2</sup> per treatment.
Variety:	Meadow
Previous crop:	Canola / oats split
Seeding details:	Seeded May 20, at 3 bu/ac at 10 in row spacing using Seed Master plot Drill by Down to Earth.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	Seed placed 2-15-0 -0 lb/ac Side band 17-20-15-15 lb/ac	ТО
Pesticides:	<ul> <li>Viper (400 ml/ac): 5 node Stage</li> <li>UAN (81 ml/ac): 5 node Stage</li> </ul>	
Harvesting:	Combined on August 25, with a Winterst and weighed & moisture averaged by PA	eiger MI.

Month	Precipitation (mm)
TOTAL	100.4



#### Table 1. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant) + TAA* + Fungicide	48.1	3235
AGTIV <sup>®</sup> RHIZO • Granular for PULSES (single inoculant) + Designed Fertility Program**	35.8	2408

\* The Taurus Advanced Acre™: Using the Designed Fertility Program with the addition of key Taurus solutions. \*\* Designed Fertility Program: a calculated fertility program based on soil tests and targeted yield. Target yield for Peas was 60 bu/ac

#### ▶ PLOT TRIAL

Wheatland Conservation Area Research partner:

Research site: Swift Current, SK

Treatments: a) AGTIV<sup>®</sup> PULSES • Granular applied at 5 lb/ac\*; b) AGTIV® RHIZO • Granular for PULSES applied at 4 lb/ac\*; c) Competitor inoculant A applied at 3.6 lb/ac\*;

- d) Competitor inoculant B applied at 3.6 lb/ac\*;
- e) Competitor inoculant C applied at 4.0 lb/ac\*;
- f) Competitor inoculant E applied at 5.0 lb/ac\*.

\*Products applied according to manufacturers recommended rate.

Experimental design:	6 replicated plots per treatment in randomized complete block design.
Variety:	Amarillo, seeded at 200 lb/ac.
Previous crop:	Canola
Seeding details:	Seeded May 24, at 9 in row spacing using Fabro plot drill. Preseed burnoff with Clean Start at 1 l/ac and Aim at 30 ml/ac.

#### **OPERATIONAL NOTES AND RAIN FALL**

Fertilisation:	98 lb/ac of 11-52-0 sidebanded
Pesticides:	<ul> <li>Viper ADV (400 ml/ac)</li> <li>Poast Ultra (190 ml/ac)</li> <li>UAN (810 ml/ac)</li> </ul>
Harvesting:	Combined on August 17, with

Wintersteiger plot combine.

Month	Precipitation (mm)
May	32.1
June	35
July	4
August	28
September	3
TOTAL	102.1

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant)	14.0	942
AGTIV <sup>®</sup> RHIZO • Granular for PULSES (single inoculant)	13.1	881
Competitor inoculant A	12.7	854
Competitor inoculant B	12.4	834
Competitor inoculant C	13.2	888
Competitor inoculant E	12.3	827



#### PLOT TRIAL

Research partner:	Integrated Crop Management Services
Research site:	Fort Saskatchewan, AB
Treatments:	<ul> <li>a) AGTIV<sup>®</sup> PULSES • Granular applied at 5 lb/ac*;</li> <li>b) Competitor inoculant A applied at 3.3 lb/ac*;</li> <li>c) Competitor inoculant B applied at 3.3 lb/ac*.</li> </ul>
Experimental design:	5 replicated plots per treatment in randomized complete block design.
Variety:	Meadows
Previous crop:	Canola
Seeding details:	Seeded on May 21, at 15.2 cm row spacing.



#### Table 1. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant)	88.6	5958
Competitor inoculant A	86.2	5797
Competitor inoculant B	79.5	5347

#### Table 2. Summary of yields per treatment

Treatment	Yield (bu/ac)	Yield (kg/ha)
AGTIV <sup>®</sup> PULSES • Granular (dual inoculant)	88.6	5958
Competitor inoculant A	86.2	5797
Competitor inoculant B <sup>1</sup>	85.8	5770

<sup>1</sup> One replication from the competitor inoculant B treatment yielded very low and has a negative impact on the treatment average. The data below represents the average of the competitor inoculant B treatment without the very low yielding rep for a total of four reps for the competitor inoculant B average yield.

#### OPERATIONAL NOTES AND RAIN FALL

Fertilisation:	None	Month	Precipitation
Pesticides:	In season maintenance: • Odyssey (17 g/ac – 35%)	May	37.3
<ul> <li>Equinox (67 ml/ac)</li> <li>Edge (0.5%)</li> <li>Harvesting: Combined with Wintersteiger Elite plot combine on Sept 25, 2015.</li> </ul>	June	59.7	
	July	108.6	
	Combined with Wintersteiger Elite plot combine on Sept 25, 2015.	August	10.3
		September	71.1
		TOTAL	287

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