

# AGTIV

# EFFICACY REPORT CANOLA & CEREALS



# 2.5 bu/ac 140 kg/ha

#### CANOLA

AVERAGE YIELD INCREASE Total of 27 sites over 5 years Canada 6.5%

# 3.8 bu/ac 255 kg/ha

#### **DURUM WHEAT**

#### **AVERAGE YIELD INCREASE**

Total of 8 sites over 2 years Canada 10 %

#### ► GROWER SPLIT FIELDS AND PLOT TRIALS

Table 1. Average increase of canola yield with AGTIV<sup>®</sup> IGNITE<sup>™</sup> L for different years (2018-2022).

Year	Number of sites	Untreated check (bu/ac)	AGTIV <sup>®</sup> 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
Total	27 sites	<b>37.2</b> ª	<b>39.7</b> <sup>b</sup>	2.5 bu/ac *

CANOLA

\*Summary of means for **AGTIV**<sup>®</sup> **IGNITE**<sup>m</sup> are significantly different following a combined site ANOVA and a Tukey test (p<0.05) p = 0.001

# Table 2. Average increase of canola seed oil content with AGTIV<sup>®</sup> IGNITE<sup>™</sup> L for different years (2019-2022).

Year	Number of sites	Untreated check (oil %)	AGTIV <sup>©</sup> 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	<b>37.8</b> ª	38.7 <sup>b</sup>	0.9 %*

\*Summary of means for **AGTIV**<sup>®</sup> **IGNITE**<sup>TM</sup> are significantly different following a combined site ANOVA and a Tukey test (p<0.1) p = 0.05



#### ► GROWER SPLIT FIELDS AND PLOT TRIALS

#### Table 1. Summary of canola yield trials for different sites (2018-2022).

Year	site	Untreated check yield	AGTIV <sup>®</sup> IGNITE™ L yield (bu/ac)	Yield increase (bu/ac)
0040	Curren Diven	(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
2022	Saskatoon	19.6	21.0	1.4
2022	Portage la Prairie	29.3	32.8	3.5
2022	Taber	28.2	32.7	4.5
2022	Elm Creek	46.1	48	1.9
2022	Alma	20.0	21.4	1.4
2022	Redvers	32.2	34.1	1.9
2022	Swan River	60.0	62.2	2.2
Total	27 sites	37.2ª	39.7 <sup>b</sup>	2.5 bu/ac *

\*Summary of means for AGTIV<sup>®</sup> IGNITE<sup>™</sup> are significantly different following a combined site ANOVA and a Tukey test (p<0.05) p=0.001



#### ► PLOT TRIALS

Table 1. Sun	nmary of canola see	ed oil content trials fo	r different sites	(2019-2022).
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Year	Site	Untreated check oil (%)	AGTIV <sup>®</sup> IGNITE™ L oil (%)	oil increase (%)
2019	Josephburg	28.1	28.6	0.5
2019	Portage la Prairie	45.5	45.7	0.2
2019	Swan River	49.9	52.1	2.2
2020	Moon Lake	41.6	43.1	1.5
2020	Taber	41.7	42.1	0.4
2020	Josephburg	34.7	36.6	1.9
2020	Swan River	38.7	40.5	1.8
2021	Josephburg	39.1	39.7	0.6
2021	Saskatoon	41.8	42.1	0.3
2021	Elm Creek	35.1	37.1	2
2021	Swan River	37.8	37.8	0
2021	Portage la Prairie	36.6	36	-0.6
2022	Saskatoon	36.6	36.3	-0.3
2022	Taber	32.1	32.9	0.8
2022	Redvers	36.6	36.5	-0.1
2022	Swan River	37.3	37.7	0.4
2022	Portage la Prairie	30.6	35.2	4.6
2022	Elm Creek	37.7	37.3	-0.4
2022	Alma	36.3	36.9	0.6
Total	19 sites	37.8 <sup>a</sup>	38.7 <sup>b</sup>	0.9 %*

\*Summary of means for **AGTIV**<sup>®</sup> **IGNITE**<sup>mmma</sup> are significantly different following a combined site ANOVA and a Tukey test (p<0.1) p=0.05



#### ► PLOT TRIAL

**Research partner:** Integrated Crop Management Services (ICMS)

Research site: Saskatoon, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: PIONEER P509-L Treated with Lumiderm, LumiGen and Helix vibrance

Previous crop: Wheat

Seeding details: Seeded on May 26, 2022, with a cone seeder at a rate of 7 kg/ha in a clay soil (pH: 8.0, OM: 8.8%). Emergence on June 21.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	19.6	-	36.6
AGTIV <sup>®</sup> IGNITE™ L	21.0	1.4	36.3

#### Plot operational notes and rain fall.

- Fertilizer blend of 80-30-10-20 of actual kg/ha incorporated in tillage prior to seeding
- Pesticides:
  - July 4, Liberty 150 herbicide (post emergence weeds)
  - August 18, Decis 5EC (flea beetle and grasshopper control)
  - September 6, Regione Ion (desiccant)

Month	Precipitation (mm)
Мау	25.8
June	38.0
July	46.5
August	25.6
September	6.8
TOTAL	142.7

Harvested on September 16, 2022



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#### ► PLOT TRIAL

**Research partner:** Integrated Crop Management Services (ICMS)

Research site: Portage la Prairie, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: DEKALB 75-65 RR Treated with Prosper Evergol

Previous crop: Carrots

Seeding details: Seeded on June 17, 2022, with a cone planter at a rate of 8.2 kg/ha in a clay soil (pH: 7.7, OM: 6.9%). Emergence on June 23.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	29.3	-	30.6
AGTIV <sup>®</sup> IGNITE™ L	32.8	3.5	35.2

#### Plot operational notes and rain fall.

- No fertilization
- · Pesticides:
  - June 24, Roundup WeatherMAX (volunteer canola control) & Sevin XLR (flea beetle control)con
  - July 14, Roundup WeatherMAX (post emergence weeds control)
  - Harvested on September 26, 2022

Month	Precipitation (mm)
May	140.7
June	70.3
July	96.3
August	89.0
September	50.3
TOTAL	446.6



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#### ► PLOT TRIAL

Research partner: Ag-Quest Inc.

Research site: Taber, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: DEKALB DKTF96 SC Treated with Buteo, Prosper EverGol and Fortenza

Previous crop: Rye

Seeding details: Seeded on May 24, 2022, with a cone seeder at a rate of 8 kg/ha in a loam soil (pH: 7.8, OM: 2.6%). Emergence on June 6.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	28.8	-	32.1
AGTIV <sup>®</sup> IGNITE™ L	32.7	3.9	32.9

#### Plot operational notes and rain fall.

- Fertilizer blend of 0-58-0-17 of actual kg/ha harrowed on May 16, prior to seeding
- Pesticides:
  - May 18, June 9, 17 & 29, Roundup Transorb (Pre and post seeding herbicide)
  - June 22, July 6 & 15, Sevin XLR Plus & Decis (flea beetle control)
- Harvested on August 31, 2022

Month	Precipitation (mm)
May	55.1
June	78.2
July	204.3*
August	89.3*
TOTAL	426.9

\* Plots were irrigated during those months



#### ► PLOT TRIAL

Research partner: Ag-Quest Inc.

Research site: Elm Creek, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 34 m<sup>2</sup> plots

Variety: In Vigor L233P Treated with Lumiderm

Previous crop: Rye

Seeding details: Seeded on June 5, 2022, with a cone seeder at a rate of 5.5 kg/ha in a sandy loam soil (pH: 8.3, OM: 2.2%). Emergence on June 10.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	46.1	-	37.7
AGTIV <sup>®</sup> IGNITE™ L	48.0	1.9	37.3

- Broadcast fertilizer blend of actual 137-36-22-28
  kg/ha prior to seeding
- Pesticides:
  - June 17, Liberty (emerged weeds control)
  - July 1, Centurion + AMIGO (grassy weeds control)
  - July 1, Coragen (grasshopper control)
  - September 8, Regione Ion (Desiccant)
- Harvested on September 13, 2022

Month	Precipitation (mm)
Мау	131.0
June	65.6
July	92.6
August	57.6
September	30.8
TOTAL	377.6



#### ► PLOT TRIAL

Research partner: Wellington Agricultural Research

Research site: Alma, ON

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 10 m<sup>2</sup> plots

Variety: In Vigor L233P treated with Prosper Evergol

Previous crop: Soybean

Seeding details: Seeded on May 30, 2022, with a cone seeder at a rate of 5.5 kg/ha in a loam soil (pH: 7.5, OM: 3.7%). Emergence on June 6.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	20.0	-	36.3
AGTIV <sup>®</sup> IGNITE™ L	21.4	1.4	36.9

- Fertilization blend 160-20-0 of actual kg/ha prior to seeding on May 10
- Pesticides:
  - June 21, Liberty (emerged weeds control)
    + Matador (flea beetle control)
- Harvested on September 17, 2022

Month	Precipitation (mm)
Мау	76.4
June	46.2
July	29.8
August	69.6
TOTAL	222.0





#### ► PLOT TRIAL

Research partner: South East Research Farm (SERF)

Research site: Redvers, SK

**Treatments:** a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 12 m<sup>2</sup> plots

Variety: InVigor L340 PC treated with Vercoras & Poncho

Previous crop: Peas

Seeding details: Seeded on June 1, 2022, with a cone seeder at a rate of 9 kg/ha in a loam soil (pH: 7.6, OM: 4.2%).

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	32.2	-	36.6
AGTIV <sup>®</sup> IGNITE™ L	34.1	1.9	36.5

- Fertilization of actual 100-25-0-6 of actual kg/ha at seeding
- Pesticides: .
  - June 6, Roundup (pre burn off herbicide)
  - June 23, Voliam (flea beetle control) •
  - June 23, Liberty (post emerged weeds control)
- Harvested on September 16, 2022

Month	Precipitation (mm)
May	121.0
June	75.0
July	259.0
August	25.2
September	15.0
TOTAL	495.2





#### ► PLOT TRIAL

Research partner: New Era Ag Research and Technologies

Research site: Swan River, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: InVigor LL 234 PC treated with Lumiderm & Helix Vibrance

Previous crop: Carrots

Seeding details: Seeded on June 5, 2022, with a cone seeder at a rate of 6 kg/ha in a clay loam soil (pH: 7.1, OM: 6.2%).

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	60.0	-	30.6
AGTIV <sup>®</sup> IGNITE™ L	62.2	2.2	35.2

#### Plot operational notes and rain fall.

- Fertilization of actual 147-115-66 of actual kg/ha in the fall of 2021
- Pesticides:
  - June 19 & 28, ARROW ALL IN (grassy weeds control post herbicide)
  - June 23 & 28, Pounce (flea beetle control)
  - July 22, Cotegra (sclerotinia stem rot control)
- Harvested on September 28, 2022

Month	Precipitation (mm)
May	114.0
June	59.4
July	40.6
August	41.8
September	34.7
TOTAL	290.5



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#### ▶ PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Josephburg, AB

Treatments: a) Untreated Check b AGTIV<sup>®</sup> IGNITE™ L

\* Liquid inoculant applied according to manufacturer's recommended rate

**Experimental design:** Complete Randomized Block Design, 8 repetitions, 24.4 m<sup>2</sup> plots

Variety: RR Canola 6086 CR

Previous crop: Wheat

Seeding details: Seeded on May 31, 2021, with a cone drill at a rate of 7 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	23.9	-	39.1
AGTIV <sup>®</sup> IGNITE™ L	25	1.1	40.2

- Fertilizer blend of 81-41-0 lbs/ac N-P-K
- Pesticides:
  - June 12, Round up Weathermax
  - September 20, Heat LQ (dessicant) •
- Combined on October 7, 2021

Month	Precipitation (mm)
June	85.3
July	112.1
August	52.5
September	53.7
TOTAL	303.6





#### ► PLOT TRIAL

Research partner: New Era Ag Technologies

Research site: Swan River, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 8 repetitions, 30 m<sup>2</sup> plots

Variety: InVigor LL234PC

Previous crop: Wheat

Seeding details: Seeded on May 18, 2021, with a cone planter at a rate of 4 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	46.9	-	37.8
AGTIV <sup>®</sup> IGNITE™ L	48.2	1.3	37.8

#### Plot operational notes and rain fall.

- Fertilization of Urea (46-0-0) and MAP (11-52-0) on May 28
- Pesticides:
  - May 7, Edge pre burn off
  - May 27, RT 540 (emerged weeds)
  - June 13, Pounce (flee beetle) and Arrow
  - June 18, Arrow all in one and Liberty
  - August 26, Guardsman (Dessicant)

Month	Precipitation (mm)
May	33.0
June	65.9
July	45.5
August	77.1
September	39.0
TOTAL	260.5

• Combined on September 11, 2021



#### ► PLOT TRIAL

**Research partner:** Integrated Crop Management Services (ICMS)

Research site: Portage la Prairie, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L

**Experimental design:** Complete Randomized Block Design, 8 repetitions, 24.4 m<sup>2</sup> plots

Variety: RR Canola CS2100

Previous crop: Wheat

Seeding details: Seeded on June 2, 2021, with a cone drill at a rate of 6 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content <sup>1</sup> (%)
Untreated Check	36.3	-	36.8 <sup>ab</sup>
AGTIV <sup>®</sup> IGNITE™ L	38.9	2.6	37.1 <sup>a</sup>

<sup>1</sup> Oil content with the same letter are not statistically different according to a Tukey HSD test (p≤0.05).

- No fertilization
- Pesticides:
  - June 14, Pounce (cutworm control)
  - June 19, Roundup Transorb
  - July 7, Pounce (Flea beetle control)
  - July 8, Proline 480 SC (sclerotinia control)
  - July 9, Roundup Transorb
  - August 9, Pounce (Flea beetle control)
- Combined on September 10, 2021

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





#### ► PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Saskatoon, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

**Experimental design:** Complete Randomized Block Design, 8 repetitions, 24.4 m<sup>2</sup> plots

Variety: LL canola P501L

Previous crop: Wheat

Seeding details: Seeded on May 20, 2021, with a cone drill at a rate of 7 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	10.3	-	41.8
AGTIV <sup>®</sup> IGNITE™ L	12.5	2.2	42.3

- Fertilization prior to seeding by mixing a blend of 80-40-10-20 with the tillage
- Pesticides:
  - June 21, Liberty and Centurion (control emerged weeds)
- Combined on August 26, 2021

Month	Precipitation (mm)
May	35.5
June	41.7
July	17.7
August	28.9
TOTAL	123.8



#### ► PLOT TRIAL

Research partner: Ag-Quest

Research site: Elm Creek, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 8 repetitions, 33 m<sup>2</sup> plots

Variety: DEKALB DKTF 96 SC

Previous crop: Soybean

Seeding details: Seeded on May 18, 2021, with a cone drill at a rate of 6 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	36.3	-	35.1
AGTIV <sup>®</sup> IGNITE™ L	37.4	1.1	37.1

- Fertilization:
  - Broadcast of granular blend of 94-79-90-11 (Urea, MAP, MOP and AMS) à seeding
  - June 22, Foliar copper
- Pesticides:
  - May 19, Roundup WeatherMax
  - June 4, Pounce (control of flea beetle)
  - June 10, Roundup WeatherMax
  - June 16, Coragen and Pounce
    (Grasshoppers and flea beetle control)
  - June 24, Roundup WeatherMax
  - August 13, Pounce (control of flea beetle)
  - August 31, Reglone (Dessicant)
- Combined on September 7, 2021

Month	Precipitation (mm)
May	61.9
June	101.5
July	25.4
August	103.3
TOTAL	292.1



#### ▶ PLOT TRIAL

Research partner: Ag-Quest

Research site: Taber, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

**Experimental design:** Complete Randomized Block Design, 8 repetitions, 25.2 m<sup>2</sup> plots

Variety: Pioneer 45CS40

Previous crop: Wheat

Seeding details: Seeded on June 11, 2020, with a cone planter at a rate of 6.41 kg/ha.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	37.3	-
AGTIV <sup>®</sup> IGNITE™ L	38.5	1.2

- Fertilization on June 11: •
  - 116.3 kg/ha of 11-52-0
  - 56.3 kg of 20-0-0-24
- Pesticides: •
  - May 24, Roundup WeatherMax (emerged weeds)
  - July 17, Decis (Flea beetle control)
  - August 20, Weed Whacker
- Combined on September 23, 2020

Month	Precipitation (mm)
June	80.8
July	23.1
August	18.8
September	47.3
TOTAL	170.0





#### ► PLOT TRIAL

Research partner: New Era Ag Technologies

Research site: Swan River, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L

Experimental design: Complete Randomized Block Design, 8 repetitions, 30 m<sup>2</sup> plots

Variety: Pioneer 45CS40

Previous crop: Soybean

Seeding details: Seeded on May 21, 2020, with a cone planter at a rate of 6 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content <sup>1</sup> (%)
Untreated Check	61.2	-	38.7 <sup>a</sup>
AGTIV <sup>®</sup> IGNITE™ L	64	2.8	40.5 <sup>b</sup>

<sup>1</sup> Oil content with the same letter are not statistically different according to a Tukey HSD test (p≤0.05).

#### Plot operational notes and rain fall.

- Fertilization of 163-30-35-60 as NH3, MAP, potash and AMS applied at fall 2019
- Pesticides:
  - June 5 and 16, Pounce (Flea beetle control)
  - June 23, Roundup
  - July 10, Clethodim

Combined on September 22, 2020

- July 17, Proline (Sclerotinia rot control)
- September 5, Guardsman (Dessicant)

Month	Precipitation (mm)
May	12.0
June	62.8
July	122.7
August	43.2
September	9.9
TOTAL	250.6



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#### ► PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Moon Lake, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 8 repetitions, 30 m<sup>2</sup> plots

Variety: Pioneer 45CS40

Previous crop: Field pea

Seeding details: Seeded on May 19, 2020, with a cone planter at a rate of 7 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content <sup>1</sup> (%)
Untreated Check	16.3	-	41.6 <sup>a</sup>
AGTIV <sup>®</sup> IGNITE™ L	18.2	1.9	43.6 <sup>b</sup>

<sup>1</sup> Oil content with the same letter are not statistically different according to a Tukey HSD test (p≤0.05).

- Fertilization prior to seeding by mixing a blend of 70-30-0-20 with the tillage
- No maintenance pesticides were applied during the trial
- Combined on August 31, 2020

Month	Precipitation (mm)
May	42.1
June	106.9
July	52.1
August	16.2
TOTAL	217.3



#### ► PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Josephburg, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 8 repetitions, 30 m<sup>2</sup> plots

Variety: Pioneer 45CS40

Previous crop: Barley

Seeding details: Seeded on May 25, 2020, with a cone planter at a rate of 7 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	47.2	-	34.7
AGTIV <sup>®</sup> IGNITE™ L	49.5	2.3	36.3

- Fertilization prior to seeding by mixing a blend of 51-22-26 with the tillage
- Pesticides:
  - June 12 Roundup Weathermax and Lontrel (emerged weeds)
- Combined on October 6, 2020

Month	Precipitation (mm)
May	93.5
June	121.4
July	121.9
August	68.4
September	4.9
TOTAL	410.1



#### ▶ PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Saskatoon, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: In Vigor L252

Previous crop: Wheat

Seeding details: Seeded on June 7, 2019, with a drill seeder at a rate of 7 kg/ha.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	38.8	-
AGTIV <sup>®</sup> IGNITE™ L	41.8	3

- Fertilization prior to seeding by mixing a blend • of 70-30-10-20 with the tillage
- Pesticides: .
  - July 12, Liberty 150 and Centurion (emerged weeds)
  - September 9, Matador (Grasshopper • control)
- Combined on October 21, 2019 •

Month	Precipitation (mm)
June	84.8
July	67.6
August	20.3
September	39.5
October	3.0
TOTAL	215.2





#### ► PLOT TRIAL

Research partner: Integrated Crop Management Services (ICMS)

Research site: Josephburg, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: Dekalb 75-42BL

Previous crop: Barley

Seeding details: Seeded on June 1, 2019, with a cone planter at a rate of 7 kg/ha.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	46.8	-
AGTIV <sup>®</sup> IGNITE™ L	53.2	6.4

- Fertilization prior to seeding by mixing a blend of 31-0-10-8 with the tillage
- Pesticides:
  - June 26, Roundup Weather max (emerged weeds)
- Combined on October 4, 2019

Month	Precipitation (mm)
May	0
June	0
July	153.7
August	31
September	43.7
TOTAL	228.4



#### ► PLOT TRIAL

Research partner: New Era Ag Technologies

Research site: Swan River, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L

Experimental design: Complete Randomized Block Design, 6 repetitions, 30 m<sup>2</sup> plots

Variety: InVigor L255PC

Previous crop: Canola stubble

Seeding details: Seeded on May 21, 2019, with a drill planter at a rate of 7 kg/ha.

#### Table 1. Summary of yields and oil content per treatment.

Treatment	Yield (bu/ac)	Yield increase (bu/ac)	Oil content (%)
Untreated Check	53.7	-	49.9
AGTIV <sup>®</sup> IGNITE™ L	55.4	1.7	52.1

#### Plot operational notes and rain fall.

- · Fertilization of 90-50-0-25 broadcast at seeding
- Pesticides:
  - May 3, Avadex (pre burn of weeds)
  - June 6, Liberty and Pounce (Flea beetle control)
  - June 11, Arrow
  - June 27, Liberty and Arrow (broadleaf and grassy weeds)
  - July 12, Proline (Sclerotinia rot control)
  - September 6, Heat (Dessicant)

Month	Precipitation (mm)
May	25.4
June	26.1
July	59.3
August	51.8
September	48.7
TOTAL	211.3

Combined on September 22, 2019



#### ► PLOT TRIAL

Research partner: Prairie Ag Research

Research site: Taber, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L

Experimental design: Complete Randomized Block Design, 6 repetitions, 16 m<sup>2</sup> plots

Variety: Pioneer 45M35

Previous crop: Wheat

Seeding details: Seeded on May 27, 2019, with a drill planter at a rate of 5.6 kg/ha.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	25.4	-
AGTIV <sup>®</sup> IGNITE™ L	27.0	1.6

- Broadcast fertilization of 29-37-0-30
- Irrigation on June 8, 16; July 6, 15 and 28
- Pesticides:
  - May 20 Roundup WeatherMax
  - Junly 3 Roundup WeatherMax and Pounce (Flea beetle control)
  - August 8 Pounce (Flea beetle control)
- Combined on September 25, 2019

Month	Precipitation (mm)
May	58.7
June	47.0
July	31.3
August	22.8
TOTAL	159.8



#### ▶ PLOT TRIAL

Research partner: Wheatland Conservation Area (WCA)

Research site: Swift Current, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

**Experimental design:** Complete Randomized Block Design, 6 repetitions, 9 m<sup>2</sup> plots

Variety: In Vigor L233P

Previous crop: Wheat

Seeding details: Seeded on May 28, 2019, with a cone seeder at a rate of 6.7 kg/ha.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	25.0	-
AGTIV <sup>®</sup> IGNITE™ L	27.1	2.1

- Broadcast fertilization of 29-37-0-30 on May 27
- Pesticides:
  - June 25, Roundup WeatherMax
- Combined on September 25, 2019

Month	Precipitation (mm)
May	13.3
June	156.0
July	11.1
August	42.6
September	92.1
TOTAL	315.1





#### ► PLOT TRIAL

Research partner: New Era Ag Technologies

Research site: Swan River, MB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L

Experimental design: Complete Randomized Block Design, 8 repetitions, 15 m<sup>2</sup> plots

Variety: InVigor L140P

Previous crop: Canola stubble

Seeding details: Seeded on June 4, 2018, with a drill planter at a rate of 5.6 kg/ha.

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

Treatment	Yield <sup>1</sup> (bu/ac)	Yield increase (bu/ac)
Untreated Check	63.5 <sup>b</sup>	-
AGTIV <sup>®</sup> IGNITE™ L	68.0 <sup>a</sup>	4.5

<sup>1</sup> Yield mean with the same letter are not statistically different according to a Tukey HSD test (p<0.05).

- Fertilization midrow band 20-58-5-8 and • broadcast 125-0-35-25
- · No pesticides applied
- Combined on October 4, 2018

Month	Precipitation (mm)
June	127.6
July	59.3
August	35.4
September	51.1
TOTAL	273.4





#### ► PLOT TRIALS

Year	Sites	Untreated check yield (bu/ac)	AGTIV <sup>®</sup> 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
Total	8 sites	<b>38.0</b> <sup>a</sup>	41.8 <sup>b</sup>	3.8 bu/ac *

#### Table 1. Summary of durum wheat yield trials for different sites (2021-2022).

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



#### ► PLOT TRIAL

Research partner: Prairie Ag Research

Research site: Lethbridge, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 6 repetitions, 12 m<sup>2</sup> plots

Variety: Grainland

Previous crop: Fallow

**Seeding details:** Seeded on May 23, 2022, with a cone seeder at a rate of 100 kg/ha in a clay loam soil (pH: 7.4, OM: 4%). Emergence on May 30.

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

Treatment	Yield <sup>1</sup> (bu/ac)	Yield increase (bu/ac)
Untreated Check	50.2 <sup>b</sup>	-
AGTIV <sup>®</sup> IGNITE™ L	59.0 <sup>a</sup>	8.8

<sup>1</sup> Yields with same letter are not statistically different according to a Tukey HSD test (p≤0.05).

#### Plot operational notes and rain fall.

- No fertilization
- Pesticides:
  - May 20, Glyphosate (pre seeding burn off)
  - June 30, Infinity (broadleaf weeds control)
- Harvested on September 14, 2022

Month	Precipitation (mm)
May	17.5
June	140.5 *
July	204.3 *
August	84.9 *
September	9.7
TOTAL	456.9

\* Plots were irrigated during those months



#### ► PLOT TRIAL

Research partner: Wheatland Conservation Area

Research site: Swift Current, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 8 repetitions, 17 m<sup>2</sup> plots

Variety: Alloy

Previous crop: Wheat

Seeding details: Seeded on May 18, 2022, with a cone seeder at a rate of 123 kg/ha in a sandy loam soil (pH: 6.1, OM: 2.7%).

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	54.0	-
AGTIV <sup>®</sup> IGNITE™ L	55.8	1.8

- Fertilization of 30-15-0-6 (374 kg/ha) sidebanded on June 8
- Pesticides:
  - May 2, RT540 (pre burn off herbicide)
  - June 8 Achieve (post emergence weeds control)
- Harvested on August 16, 2022

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





#### ► PLOT TRIAL

Research partner: Small Plot

Research site: Vulcan, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 8 repetitions, 16 m<sup>2</sup> plots

Variety: Spitfire

Previous crop: Rye

Seeding details: Seeded on May 16, 2022, with a plot drill machine at a rate of 130 kg/ha in a clay loam soil (pH: 7.6, OM: 3%). Emergence on May 28.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	29.2	-
AGTIV <sup>®</sup> IGNITE™ L	31.0	1.8

- Fertilization of 60-15-15-6 kg/ha sidebanded at seeding on May 16
- Pesticides:
  - June 25: Herbicide Epic and Stellar XL
  - ZIVATA for grasshoppers control
- Harvested on August 30, 2022

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





#### ► PLOT TRIAL

Research partner: Ag-Quest

Research site: Taber, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

**Experimental design:** Complete Randomized Block Design, 6 repetitions, 22.5 m<sup>2</sup> plots

Variety: Strongfield

Previous crop: Rye

Seeding details: Seeded on May 17, 2022, with a cone seeder at a rate of 117 kg/ha in a sandy loam soil (pH: 7.8, OM: 2.6%). Emergence on May 20.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	27.3	-
AGTIV <sup>®</sup> IGNITE™ L	31.8	4.5

#### Plot operational notes and rain fall.

- Fertilization of 5-20-5 kg/ha prior to seeding
- Pesticides:
  - May 18, Roundup Transorb (pre emergence herbicide
  - June 19, Achieve liquid (emerged weeds)
  - July 6, Infinity and Achieve Liquid (annual grass control)
- Harvested on August 30, 2022

Month	Precipitation (mm)
May	16.1
June	78.2
July	204.3*
August	89.3*
TOTAL	387.9

\* Plots were irrigated during those months



#### PLOT TRIAL

Research partner: Prairie Ag Research

Research site: Lethbridge, AB

**Treatments:** a) Untreated Check b) AGTIV<sup>®</sup> IGNITE<sup>™</sup> L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 8 repetitions, 12 m<sup>2</sup> plots

Variety: Grainland

Previous crop: Barley

Seeding details: Seeded on May 31, 2021, with a cone seeder at a rate of 100 kg/ha in a clay loam soil (pH: 7.4, OM: 2.9%). Emergence on June 7.

#### Table 1. Summary of yields and protein content per treatment.

Treatment	Yield <sup>1</sup> (bu/ac)	Yield increase (bu/ac)	Protein (%)
Untreated Check	66.7 <sup>b</sup>	-	19.2
AGTIV <sup>®</sup> IGNITE™ L	73.3 <sup>a</sup>	6.6	20.3

<sup>1</sup> Yields with same letter are not statistically different according to a Tukey HSD test (p≤0.05).

- No fertilization
- Pesticides:
  - May 31, Glyphosate (emerged weeds)
  - June 28, Achieve, Infinity and Turbocharge (broadleaf weeds)
- Harvested on September 14, 2021

Month	Precipitation (mm)
May	33.1
June	76.5
July	70.3
August	35.6
TOTAL	215.5







#### ► PLOT TRIAL

Research partner: Small Plot

Research site: Vulcan, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 8 repetitions, 32 m<sup>2</sup> plots

Variety: Spitfire

Previous crop: Oats

Seeding details: Seeded on May 16, 2021, with a plot drill machine at a rate of 115 kg/ha in a loam soil (pH: 7.5, OM: 3%). Emergence on May 20.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	25.8	-
AGTIV <sup>®</sup> IGNITE™ L	28.8	3.0

- 70-20-20 kg/ha sidebanded at seeding
- Pesticides:
  - July 25, ZIVATA sprayed for grasshoppers
- Harvested on August 30, 2021

Month	Precipitation (mm)	
May	167	
June	109	
July	152	
August	163	
TOTAL	591	



#### ► PLOT TRIAL

Research partner: Ag-Quest

Research site: Taber, AB

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate

Experimental design: Complete Randomized Block Design, 8 repetitions, 22.5 m<sup>2</sup> plots

Variety: Strongfield

Previous crop: Rye

Seeding details: Seeded on June 6, 2021, with a cone seeder at a rate of 130 kg/ha in a loam soil (pH: 7.8, OM: 2.2%). Emergence on June 20.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	39	-
AGTIV <sup>®</sup> IGNITE™ L	40.6	1.6

- No fertilization
- Pesticides:
  - July 2, Infinity and Achieve Herbicide (broadleaf control)
  - July 16, Axial Herbicide (annual grass control)
- Harvested on September 3, 2021

Month	Precipitation (mm)
May	24.8
June	89.9
July	78.5
August	53.7
TOTAL	246.9



#### ► PLOT TRIAL

Research partner: Wheatland Conservation Area

Research site: Swift Current, SK

Treatments: a) Untreated Check b) AGTIV<sup>®</sup> IGNITE™ L\*

\* Liquid inoculant applied according to manufacturer's recommended rate **Experimental design:** Complete Randomized Block Design, 8 repetitions, 18 m<sup>2</sup> plots

Variety: Transcend

Previous crop: Barley

Seeding details: Seeded on May 28, 2021, with a cone seeder at a rate of 130 kg/ha in a sandy loam soil (pH: 6.5, OM: 2.7%). Emergence on June 11.

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

Treatment	Yield (bu/ac)	Yield increase (bu/ac)
Untreated Check	11.8	-
AGTIV <sup>®</sup> IGNITE™ L	14.4	2.6

- 30-15-06-6 sidebanded at seeding (374 kg/ha)
- Pesticides:
  - May 4, RT540 + Aim EC (pre emergence herbicide)
  - June 17 Achieve + Buctril (Emerged weeds)
- Harvested on August 27, 2021

Month	Precipitation (mm)	
May	44.1	
June	74.5	
July	51.9	
August	43.2	
TOTAL	213.7	



# **EFFICACY REPORT 2023**

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