

# SASKATCHEWAN ON-FARM RESEARCH TRIALS



# 2023

SaskBarley   
DEVELOPMENT COMMISSION

 SaskCanola

SASKATCHEWAN  
pulse  
Growers



Sask  Wheat  
DEVELOPMENT COMMISSION



# Acknowledgments

SaskCanola, Sask Wheat, SaskBarley and Saskatchewan Pulse Growers wish to acknowledge and thank the grower cooperators and agronomists around the province for their time and efforts in conducting this year's on farm trials. Without your participation, these trials and the valuable data gained from them would not be possible.



## A special thanks to

Christiane Catellier from IHARF for her role in the organization, management, and data analysis for these trials.





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# Overview

*This book is a compilation of results from the trial work completed on-farm by farmers and agronomists in Saskatchewan who participated in the barley, canola, pulse and wheat trials this year. This resource is a way to enhance communication and knowledge sharing amongst farmers conducting on-farm trials. Our goal is that it will allow farmers to review the comprehensive data, analyze the trends and make informed decisions that directly impact their farms.*

*SaskCanola, SaskBarley, Sask Wheat and Saskatchewan Pulse Growers (SPG) are working together to generate results that address challenges including increasing yield, quality and profits for farm businesses. This collaborative approach will ensure trials work is diverse and representative of the various crops grown in the province.*





Canola

**TOP NOTCH** Trials  
FARMING

by  **SaskCanola**

## Overview

In its inaugural year, SaskCanola's Top Notch Farming trials marked a milestone with a dedicated focus on field-scale research. This investment of levy dollars directly benefits canola farmers by addressing on-farm challenges and questions they may have specific to their farm. By investing in research applicable at the farm level, SaskCanola emphasizes its commitment to growing producer prosperity.

The goal of our program is to actively seek input from farmers and agronomists to shape future projects, and cultivate a collaborative network between SaskCanola, farmers, agronomists, and research specialists. Anticipating growth and evolution, we look forward to expanding this program in the years to come.

**Protocol:** Foliar-Applied Nitrogen-Fixing Biological Products For Canola



# Foliar-Applied Nitrogen-Fixing Biological Products For Canola

*Wheat and canola generally require a large supply of nitrogen (N) to support high yields and quality. New, commercially available biological products may have the ability to facilitate biological N fixation in non-legume crops, potentially reducing the N fertility requirements of these crops. However, there is little publicly available data regarding the performance of N-fixing biological products on canola.*

## Objective

To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

## Treatments

Option A: Two treatments		Option B: Four treatments	
1)	Untreated check	1)	Normal N rate + Untreated
2)	Envita® at recommended rate and timing	2)	Normal N rate + Envita®
		3)	Reduced N rate + Untreated
		4)	Reduced N rate + Envita®

The treatments were replicated and applied in randomized strips. Option A trials were replicated four times (8 plots total) and Option B trials were replicated three times (12 plots total). All plots were managed the same agronomically including seeding date, variety, seeding depth, seed treatment, and pesticide application.

## Procedure

The following procedure was followed at all trial sites, unless otherwise specified in the individual site reports:

1. Spring soil samples were collected at each trial site prior to seeding and fertilizer application to assess residual soil nutrient levels. A minimum of 12 soil cores were collected throughout the trial area, separated by 0–6" and 6–24" depths.
2. The normal N fertilizer rate was determined by the producer and their agronomist as per their management practices. The reduced N rate treatments were 90 percent or less of the normal N rate. Actual applied N rates were documented.
3. For Option A, the entire field was seeded at the normal N fertilizer rate and Envita® treatment strips were established at the recommended timing using the provided randomized field plan.
4. For Option B, N fertility treatments were established at seeding time (or N fertilizer application time) and Envita® application was completed at the recommended timing using the provided field plan.
5. Envita® was either tank-mixed at herbicide timing or applied as a separate pass. Label recommendations were followed.
6. Yield was determined for each plot separately by weighing with a weigh wagon or grain cart with scale.
7. Grain samples were collected from each plot separately for grain quality analysis.

## Data Collection

- Spring soil sample
- Spring plant density
- Yield (corrected for moisture content)
- Grain quality (protein content, oil content)
- General observations throughout the season
- Weather data (Daily temperature and precipitation)
- Management (applied fertilizer rates, seeding date, pesticide applications, etc.)



SaskCanola wishes to thank  
Syngenta for their support by  
donating Envita®.

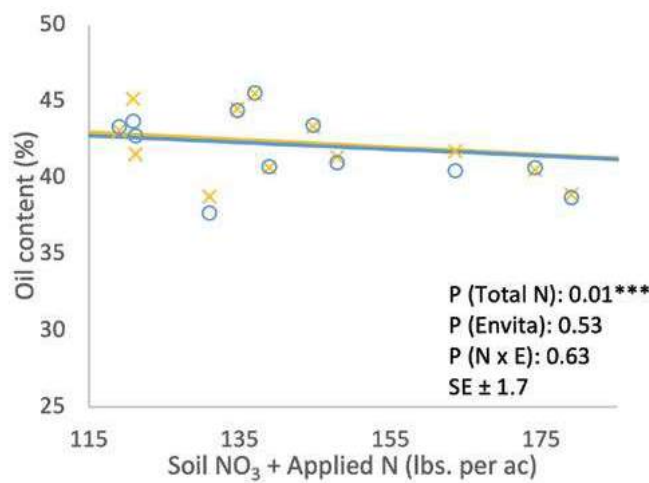
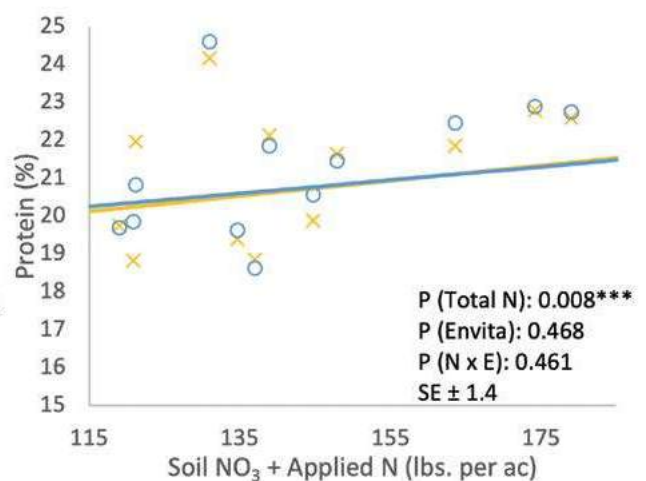
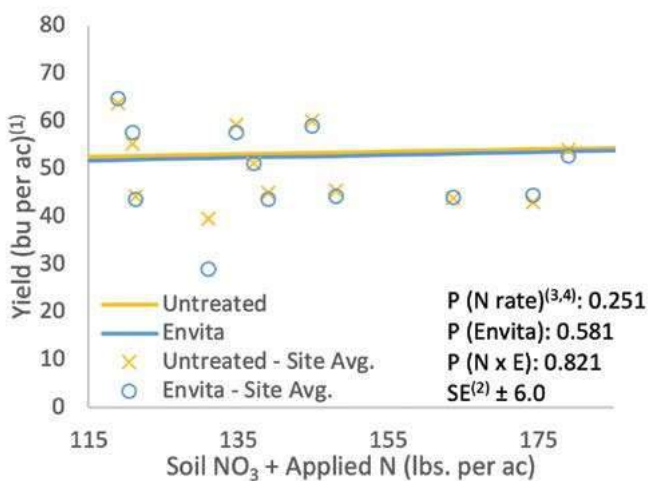
syngenta



## Foliar-Applied Nitrogen-Fixing Biological Products For Canola: Results Summary

Data from all sites was combined to assess the overall effect of Envita<sup>®</sup> application and whether the effect differed with nitrogen availability. The amount of applied N was added to the soil residual NO<sub>3</sub> to estimate N supply for different sites and treatments.

Overall, we were unable to detect a difference in yield in response to Envita<sup>®</sup> application or N rate under the conditions experienced across the trials this growing season. Protein increased significantly and oil content decreased significantly with N supply, but did not differ significantly with Envita<sup>®</sup> application.



Individual site reports are provided to indicate the variability in management, environmental conditions, and responses to N supply and Envita® application that was observed across trial sites this growing season. The 2024 suggested retail price (SRP) of Envita® is \$16.48 per acre.

The following footnotes will also be referred to in the individual site reports for this trial:

1. Yields were adjusted to 10% seed moisture content.
2. SE is the standard error which is in the same unit as the measurement and indicates the level of variability or uncertainty in the data.
3. The P-value indicates the statistical significance, or likelihood that the measured difference was a result of the treatment:  
P < 0.01 = Very likely; Very high probability that the difference was due to the treatment (\*\*\*)  
P < 0.05 = Likely; Good probability that the difference was due to the treatment (\*\*)  
P < 0.1 = Possibly; Moderate probability that the difference was due to the treatment (\*)  
P > 0.1 = Not likely; Probability too low to confirm if the difference was due to the treatment (not significant)  
\*\* Where P < 0.05, treatment differences are shown in summary figures.
4. P-value (N rate) indicates the likelihood of a difference resulting from N rate treatments only;  
P-value (Envita®) indicates the likelihood of a difference resulting from Envita® application only;  
P-value (N x E) indicates the likelihood of N rate treatments having different responses to Envita® application



## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Carrot River)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

1. Untreated check
2. Envita® application

**Replicates:** Four

**General Trial Information:**

Variety	InVigor L340PC
Seeding date	May 13
Previous crop	Wheat
Soil organic matter	3.0%
Residual Nitrate-N (0-24")	190 lbs N ac <sup>-1</sup>
Applied N	100 lbs N ac <sup>-1</sup> , treated with Agrotain
Plant density / Row spacing	6 plants ft <sup>-2</sup> on 12" spacing

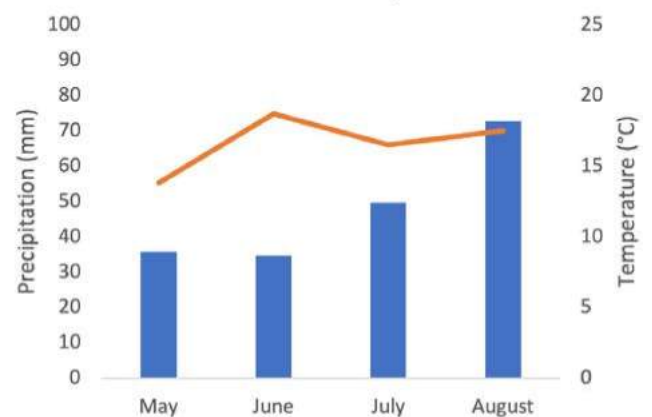
**Envita® Application:**

Date / Time	June 13 at 1:00 p.m.
Crop stage	5-6 leaf
Tank mix	Liberty
Water volume	10 gal ac <sup>-1</sup>
Weather conditions	24°C, Hazy, North wind

**In-crop pesticide applications:**

June 2	Liberty
June 13	Liberty

Weather: Environment Canada – Nipawin





## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Check	3919	78.4	19.7	42.2
Envita <sup>®</sup>	3905	78.1	19.1	42.5
SE <sup>(2)</sup>	± 44	± 0.9	± 0.3	± 0.3
<i>P</i> -value <sup>(3)</sup>	0.824		0.213	0.389



### Summary:

We were unable to detect differences in yield or grain quality as a result of the application of Envita<sup>®</sup> foliar-applied N-fixing bacteria to canola under these trial conditions.



### Economics:

There was no significant difference in yield between treatments. Therefore, the most economical treatment is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of



## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Davidson)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola under varying rates of applied N fertilizer.

**Treatments:**

**Replicates:** Three

1. Normal N rate – Untreated
2. Normal N rate + Envita®
3. Reduced N rate – Untreated
4. Reduced N rate + Envita®
5. Low N rate – Untreated
6. Low N rate + Envita®

**General Trial Information:**

<b>Variety</b>	InVigor L350PC	
<b>Seeding date</b>	May 26	
<b>Previous crop</b>	Wheat	
<b>Soil organic matter</b>	3.3%	
<b>Residual Nitrate-N (0-24")</b>	64 lbs ac <sup>-1</sup>	
<b>Applied N</b>	Urea midrow band	110 lbs N ac <sup>-1</sup> (Normal) 100 lbs N ac <sup>-1</sup> (Reduced) 57 lbs N ac <sup>-1</sup> (Low)
<b>Plant density / Row spacing</b>	6.5 plants ft <sup>-2</sup> on 12 in. spacing	

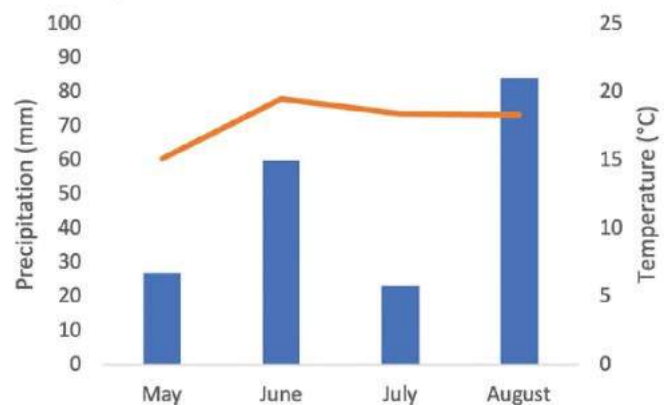
**Envita® Application:**

<b>Date / Time</b>	June 16 at 11:00 a.m.
<b>Crop stage</b>	3-4 leaf
<b>Tank mix</b>	No
<b>Water volume</b>	10 gal ac <sup>-1</sup>
<b>Weather conditions</b>	Warm, partly cloudy, 26°C

**In-crop pesticide applications:**

June 12	Liberty
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**Weather: in-field weather station**



## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Normal N Check	2154	43.1	22.8	40.5
Normal N + Envita <sup>®</sup>	2218	44.4	22.9	40.7
Reduced N Check	2193	43.9	21.9	41.8
Reduced N + Envita <sup>®</sup>	2204	44.1	22.5	40.5
Low N Check	2208	44.2	22.0	41.6
Low N + Envita <sup>®</sup>	2180	43.6	20.8	42.8
SE <sup>(2)</sup>	± 62	± 1.2	± 0.5	± 0.5
<i>P</i> -value (N rate) <sup>(3)</sup>	0.98		0.03**	0.02**
<i>P</i> -value (Envita <sup>®</sup> )	0.75		0.68	0.94
<i>P</i> -value (N x E) <sup>(4)</sup>	0.75		0.18	0.05*



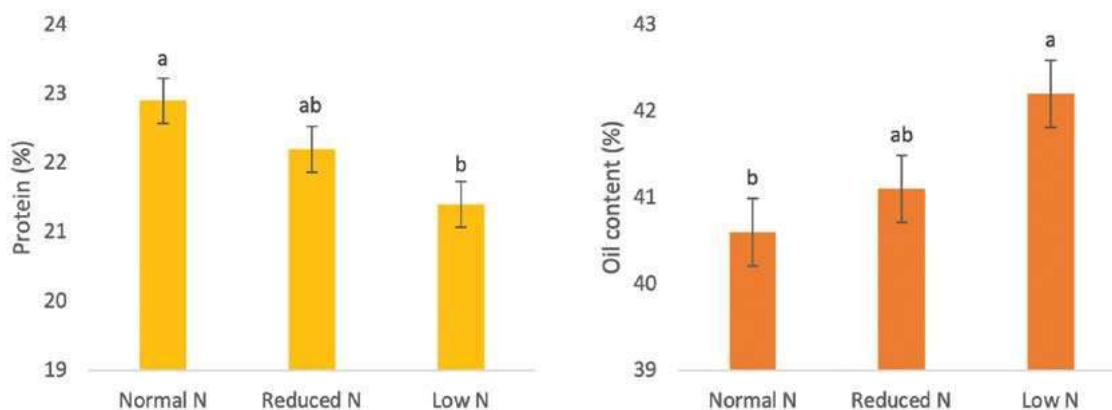
### Summary:

There were no significant differences in yield of canola resulting from application of Envita<sup>®</sup> foliar-applied N-fixing bacteria, regardless of applied N rate, under these trial conditions. Protein and oil content were significantly ( $P < 0.05$ ) affected by applied N rate but not by application of Envita<sup>®</sup>. Protein was significantly lower and oil content was significantly higher with the low N rate compared to the normal N rate.



### Economics:

There was no significant difference in yield resulting from Envita<sup>®</sup> application, regardless of applied N rate. Therefore, the most economical treatment in regard to Envita<sup>®</sup> application is the check.



The effect of applied N rate on canola protein content (left) and oil content (right) at Davidson. Treatments labeled with the same letter are not significantly different.

\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of





## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Indian Head - IHARF)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

1. Untreated check
2. Envita® application

**Replicates:** Four

**General Trial Information:**

Variety	InVigor L350PC
Seeding date	May 20
Previous crop	Canaryseed
Soil organic matter	5.8%
Residual Nitrate-N (0-24")	17 lbs N ac <sup>-1</sup>
Applied N	120 lbs N ac <sup>-1</sup>
Plant density / Row spacing	7-9 plants ft <sup>-2</sup> on 12 in. spacing

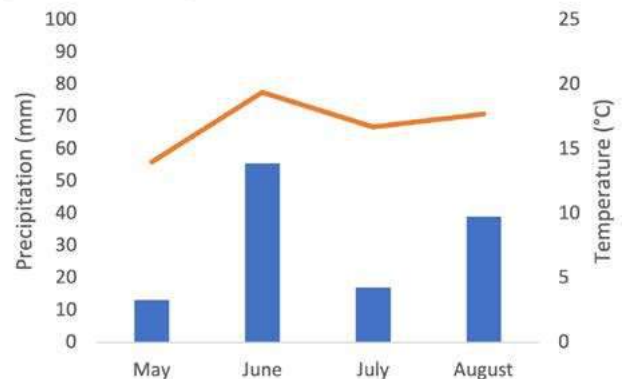
**Envita® Application:**

Date / Time	June 19
Crop stage	6 leaf
Tank mix	Agral 90
Water volume	13 gal ac <sup>-1</sup>
Weather conditions	Light rain overnight, Max 23°C, Daytime RH 43-68%

**In-crop pesticide applications:**

June 12	Liberty + Centurion + Amigo
July 7	Cotegra

Weather: In-field precip + Environment Canada Temps (Indian Head CDA)



## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Check	2553	51.1	18.9	45.5
Envita <sup>®</sup>	2552	51.0	18.6	45.5
SE <sup>(2)</sup>	± 24	± 0.5	± 0.2	± 0.2
<i>P-value</i> <sup>(3)</sup>	0.93		0.35	0.85



### Summary:

We were unable to detect differences in yield or grain quality as a result of the application of Envita<sup>®</sup> foliar-applied N-fixing bacteria to canola under these trial conditions.



### Economics:

There was no significant difference in yield between treatments. Therefore, the most economical treatment is the check.



✳ To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of



and AAFC  
Indian Head

# Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Indian Head)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

**Replicates:** One

1. Normal N rate - Untreated
2. Normal N rate + Envita®
3. Reduced N rate – Untreated
4. Reduced N rate + Envita®

**General Trial Information:**

<b>Variety</b>	InVigor L340PC	
<b>Seeding date</b>	May 23	
<b>Previous crop</b>	Wheat	
<b>Soil organic matter</b>	4.9%	
<b>Residual Nitrate-N (0-24")</b>	68 lbs N ac <sup>-1</sup>	
<b>Applied N</b>	Fall ATS + midrow UAN at seeding	147 lbs N ac <sup>-1</sup> (Normal) 120 lbs N ac <sup>-1</sup> (Reduced)
<b>Plant density / Row spacing</b>	7-9 plants ft <sup>-2</sup> on 9" spacing	

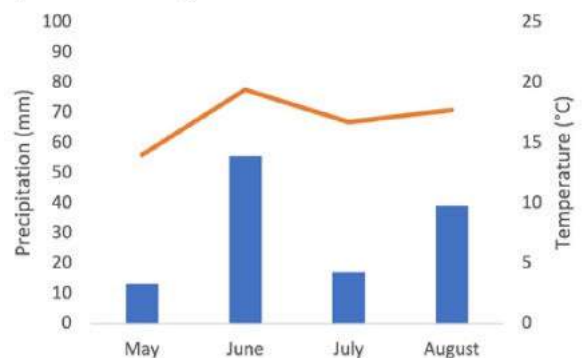
**Envita® Application:**

<b>Date / Time</b>	June 13 at 11:30 a.m.
<b>Crop stage</b>	4-5 leaf
<b>Tank mix</b>	Liberty + Centurion
<b>Water volume</b>	12 gal ac <sup>-1</sup>
<b>Weather conditions</b>	Max 31°C, Daytime RH 25-40%

**In-crop pesticide applications:**

None

*Weather: Nearby in-field precip + Environment Canada Temps (Indian Head CDA)*





## Results:


Treatment	Yield <sup>(1)</sup>	
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )
Normal N Check	2782	55.6
Normal N + Envita <sup>®</sup>	2836	56.7
Reduced N Check	2891	57.8
Reduced N + Envita <sup>®</sup>	2945	58.9



### Summary:

This trial was not replicated and so the probability of a significant treatment effect can not be determined.



 To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of



## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Luseland)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola under varying rates of applied N fertilizer.

**Treatments:**

**Replicates:** Three

1. Normal N rate – Untreated
2. Normal N rate + Envita®
3. Reduced N rate – Untreated
4. Reduced N rate + Envita®

**General Trial Information:**

Variety	InVigor L340PC	
Seeding date	May 20	
Previous crop	Barley	
Soil organic matter	3.5%	
Residual Nitrate-N (0-24")	39 lbs ac <sup>-1</sup>	
Applied N	Variable Rate Urea	Average 109 lbs N ac <sup>-1</sup> (Normal) Average 100 lbs N ac <sup>-1</sup> (Reduced)
Plant density / Row spacing	7 plants ft <sup>-2</sup> on 10" spacing	

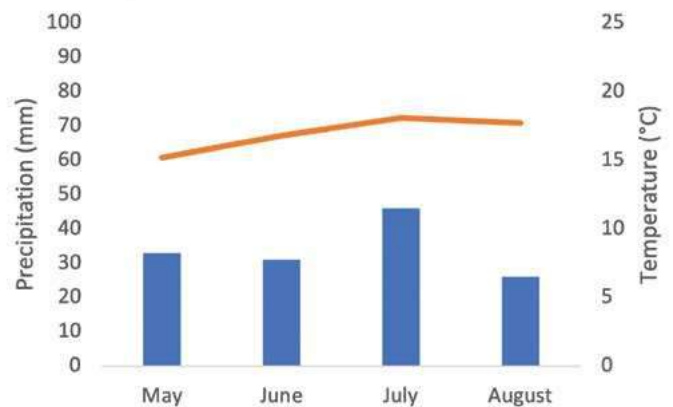
**Envita® Application:**

Date / Time	June 11
Crop stage	4-5 leaf
Tank mix	Liberty + Arrow All-In + AMS
Water volume	10 gal ac <sup>-1</sup>
Weather conditions	Low 12°C, High 30°C, no rain

**In-crop pesticide applications:**

June 12	Liberty + Arrow All-In + AMS
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Weather: In-field or nearby weather station (Jun-Aug precip) + Kindersley A EC station



## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Normal N Check	2267	45.3	21.6	41.4
Normal N + Envita <sup>®</sup>	2209	44.2	21.5	41.0
Reduced N Check	2251	45.0	22.1	40.6
Reduced N + Envita <sup>®</sup>	2183	43.7	21.9	40.7
SE <sup>(2)</sup>	± 60	± 1.2	± 1.0	± 1.1
<i>P-value (N rate)</i> <sup>(3)</sup>	0.67		0.67	0.65
<i>P-value (Envita<sup>®</sup>)</i>	0.22		0.82	0.88
<i>P-value (N x E)</i> <sup>(4)</sup>	0.93		0.96	0.83



### Summary:

There were no differences in yield or grain quality of canola resulting from application of Envita<sup>®</sup> foliar-applied N-fixing bacteria, regardless of applied N rate, under these trial conditions.



### Economics:

There was no significant difference in yield resulting from Envita<sup>®</sup> application, regardless of applied N rate. Therefore, the most economical treatment in regard to Envita<sup>®</sup> application is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of



# Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Maidstone)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

1. Untreated check
2. Envita® application

**Replicates:** Four

**General Trial Information:**

Variety	Pioneer P506L
Seeding date	May 25
Previous crop	Wheat
Soil organic matter	3.5%
Residual Nitrate-N (0-24")	9 lbs N ac <sup>-1</sup> (fall soil test prior to NH <sub>3</sub> application)
Applied N	Average 110 lbs N ac <sup>-1</sup> , Variable Rate Fall-applied NH <sub>3</sub>
Plant density / Row spacing	7 plants ft <sup>-2</sup> on 12" spacing

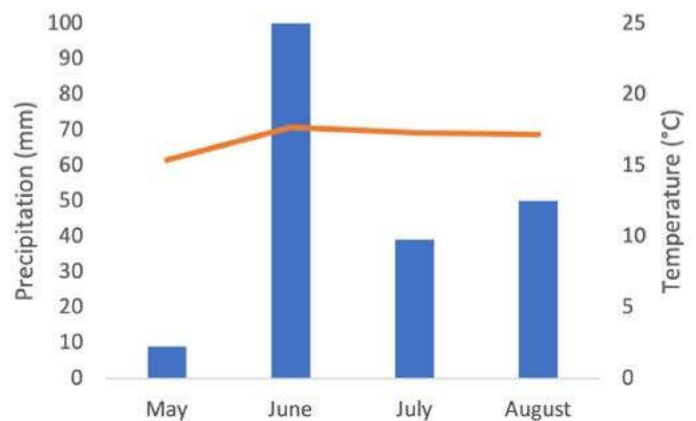
**Envita® Application:**

Date / Time	June 16
Crop stage	4-5 leaf
Tank mix	No
Water volume	10 gal ac <sup>-1</sup>
Weather conditions	Hot and dry

**In-crop pesticide applications:**

June 17	Liberty
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Weather: In-field measurement (June-Aug precip) + Waseca EC weather station





## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Check	3189	63.8	19.8	43.0
Envita <sup>®</sup>	3241	64.8	19.7	43.3
SE <sup>(2)</sup>	± 49	± 1.0	± 0.1	± 0.3
<i>P-value</i> <sup>(3)</sup>	0.30		0.81	0.49



### Summary:

We were unable to detect differences in yield or grain quality as a result of the application of Envita<sup>®</sup> foliar-applied N-fixing bacteria to canola under these trial conditions.



### Economics:

There was no significant difference in yield between treatments. Therefore, the most economical treatment is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of

**SWATMAPS**

## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Shaunavon)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

1. Untreated check
2. Envita® application

**Replicates:** Two

**General Trial Information:**

Variety	InVigor L340PC
Seeding date	May 30
Previous crop	Barley
Soil organic matter	4.3%
Residual Nitrate-N (0-12")	22 lbs N ac <sup>-1</sup>
Applied N	91 lbs N ac <sup>-1</sup>
Plant density / Row spacing	2.6 plants ft <sup>-2</sup> on 10" spacing

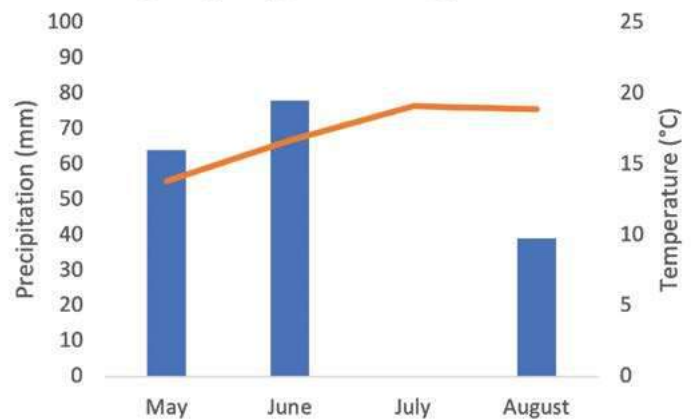
**Envita® Application:**

Date / Time	June 21
Crop stage	4 leaf
Tank mix	No
Water volume	10 gal ac <sup>-1</sup>
Weather conditions	High 19°C

**In-crop pesticide applications:**

June 18	Liberty + Yuma
July 5	Coragen Max

Weather: *in-field (precip) + Eastend Cypress EC station*



## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Check	1972	39.4	24.2	38.8
Envita <sup>®</sup>	1445	28.9	24.6	37.7
SE <sup>(2)</sup>	± 285	± 5.7	± 0.1	± 0.3
P-value <sup>(3)</sup>	0.32		0.11	0.10



### Summary:

We were unable to detect differences in yield or grain quality as a result of the application of Envita<sup>®</sup> foliar-applied N-fixing bacteria to canola under these trial conditions.



### Economics:

There was no significant difference in yield between treatments. Therefore, the most economical treatment is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of





## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Vibank)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola.

**Treatments:**

1. Untreated check
2. Envita® application

**Replicates:** Four

**General Trial Information:**

Variety	InVigor L340PC
Seeding date	May 19
Previous crop	Spring wheat
Soil organic matter	2.6%
Residual Nitrate-N (0-12")	24 lbs N ac <sup>-1</sup>
Applied N	100 lbs N ac <sup>-1</sup> spring dribble band + 55 lbs N ac <sup>-1</sup> urea side-band
Plant density / Row spacing	4.6 plants ft <sup>2</sup> on 10" spacing

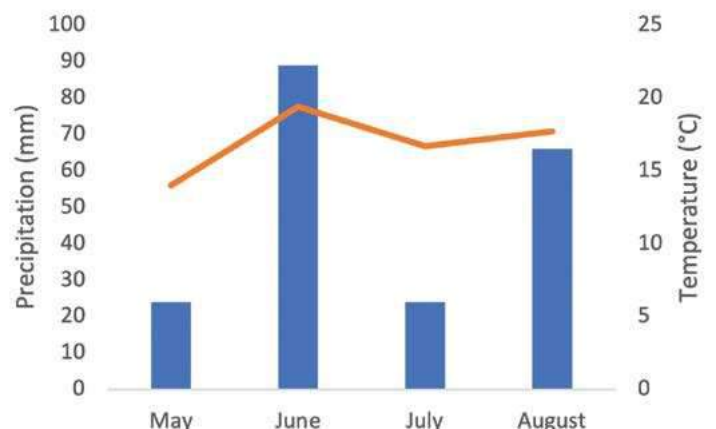
**Envita® Application:**

Date / Time	June 16
Crop stage	7 leaf to bolting
Tank mix	No
Water volume	10 gal ac <sup>-1</sup>
Weather conditions	20°C

**In-crop pesticide applications:**

June 9	Clethodim + Liberty
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Weather: *Climate FieldView (precip)*  
+ *Qu'Appelle 1 EC weather station (temp)*





## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Check	2696	53.9	22.6	38.9
Envita <sup>®</sup>	2634	52.7	22.7	38.7
SE <sup>(2)</sup>	± 54	± 1.1	± 0.2	± 0.3
<i>P-value</i> <sup>(3)</sup>	0.44		0.87	0.68



### Summary:

We were unable to detect differences in yield or grain quality as a result of the application of Envita<sup>®</sup> foliar-applied N-fixing bacteria to canola under these trial conditions.



### Economics:

There was no significant difference in yield between treatments. Therefore, the most economical treatment is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of



**CORE**  
AG INPUTS

in White Butte

## Foliar-Applied Nitrogen-Fixing Biological Products In Canola (Wynyard)

**Objective:** To determine if there are agronomic and economic benefits of applying a commercially available, foliar-applied N-fixing bacteria product (Envita®) in canola under varying rates of applied N fertilizer.

**Treatments:**

**Replicates:** Three

1. Normal N rate – Untreated
2. Normal N rate + Envita®
3. Reduced N rate – Untreated
4. Reduced N rate + Envita®
5. Low N rate – Untreated
6. Low N rate + Envita®

**General Trial Information:**

<b>Variety</b>	Victory V25-3T	
<b>Seeding date</b>	May 23	
<b>Previous crop</b>	Flax	
<b>Soil organic matter</b>	3.0%	
<b>Residual Nitrate-N (0-12")</b>	48 lbs ac <sup>-1</sup>	
<b>Applied N</b>	Urea (37 lbs N ac <sup>-1</sup> for all treatments) + N-lock treated urea to total:	97 lbs N ac <sup>-1</sup> (Normal) 87 lbs N ac <sup>-1</sup> (Reduced) 73 lbs N ac <sup>-1</sup> (Low)
<b>Plant density / Row spacing</b>	6-8 plants ft <sup>2</sup> on 12" spacing	

**Envita® Application:**

<b>Date / Time</b>	June 26 at 3:00 p.m.
<b>Crop stage</b>	Start of bolting
<b>Tank mix</b>	Agral 90
<b>Water volume</b>	10 gal ac <sup>-1</sup>
<b>Weather conditions</b>	24°C, 52% RH, wind 11 km hr <sup>-1</sup>

*Weather: Environment Canada station - Wynyard*



## Results:

Treatment	Yield <sup>(1)</sup>		Protein (%)	Oil content (%)
	(lbs. ac <sup>-1</sup> )	(bu. ac <sup>-1</sup> )		
Normal N Check	3004	60.1	19.9	43.3
Normal N + Envita <sup>®</sup>	2960	59.2	20.6	43.4
Reduced N Check	2964	59.3	19.4	44.5
Reduced N + Envita <sup>®</sup>	2886	57.7	19.6	44.4
Low N Check	2763	55.3	18.8	45.1
Low N + Envita <sup>®</sup>	2878	57.6	19.9	43.7
SE <sup>(2)</sup>	± 62	± 1.2	± 0.4	± 0.5
<i>P</i> -value (N rate) <sup>(3)</sup>	0.08*		0.13	0.19
<i>P</i> -value (Envita <sup>®</sup> )	0.96		0.07*	0.33
<i>P</i> -value (N x E) <sup>(4)</sup>	0.25		0.55	0.38



### Summary:

There was a moderate probability ( $P < 0.1$ ) that yield decreased with N rate (not shown), but there was no significant effect of Envita<sup>®</sup> application, regardless of applied N rate, under these trial conditions. There was a moderate probability ( $P < 0.1$ ) that protein increased with Envita<sup>®</sup> application, when averaged across N rates. Oil content was not significantly affected by Envita<sup>®</sup> application, regardless of N rate.



### Economics:

There was no significant difference in yield resulting from Envita<sup>®</sup> application, regardless of applied N rate. Therefore, the most economical treatment in regard to Envita<sup>®</sup> application is the check.



\* To review footnote references please refer to overall trial summary on page 21.



This trial was conducted with  
the agronomic support of





