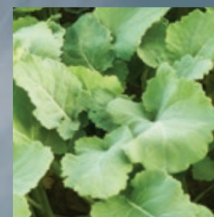




We create chemistry



# 2024

## CROP PRODUCTION GUIDE

### EASTERN CANADA









# CORN

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# SOYBEANS

---

# CEREALS

---

# CANOLA

---

# POTATOES

---

# POST-HARVEST

---

# RESOURCES

---

# Innovative solutions for successful crops.

To help you get the most out of every acre, it remains BASF's priority to produce new solutions, along with continuing to innovate the solutions you've come to rely on. You can look forward to fresh innovations in the 2024 Crop Production Guide to grow healthy seedlings, manage weeds, and protect against diseases and insects.



## Latest additions for disease challenges.

Revysol® is a demethylation inhibitor (DMI; Group 3) and the first and only isopropanol-azole on the market. It is engineered to provide broader, stronger and longer performance than other DMI technology.

Veltyma® fungicide is a northern corn leaf blight and tar spot specialist in corn. With some regions being affected by northern corn leaf blight on a yearly basis, and tar spot moving across Ontario, Veltyma is a great asset to protect your corn from these yield-robbing diseases.

Veltyma DLX provides all the benefits of Veltyma with added protection against fusarium and gibberella ear rots.

**Veltyma®**  
Revysol® Fungicide

**Veltyma® DLX**  
Revysol® Fungicide



CORN

SOYBEANS

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# The pressure's on for weeds with this addition.



Designed for soybeans and dry beans, Eragon® Plus herbicide is the pre-emergence/pre-harvest all-in-one co-pack with Merge® adjuvant. With proven burndown control of weeds and rapid activity, it will help provide effective weed control and/or crop dry down. Containing Group 14 chemistry, Eragon Plus controls weeds resistant to glyphosate, triazine and Group 2 herbicides to complement and improve your glyphosate application.

**Eragon® Plus**

Powered by **Kixor®** Herbicide

## Broadened protection against potato pests.

Cimegra® insecticide is an innovative solution for difficult-to-control chewing insects in potatoes, powered by the groundbreaking active ingredient broflanilide. Along with in-furrow control of wireworms, Cimegra is now registered for foliar use on Colorado potato beetles—providing fast knockdown and control growers can count on.

**Cimegra®**

Insecticide



For quick access to solution options and information, visit our Resource section [here](#).

Learn more by visiting [agsolutions.ca](https://agsolutions.ca), contacting your BASF **AgSolutions®** Retail Representative or by calling **AgSolutions** Customer Care at 1-877-371-BASF (2273).

CORN

SOYBEANS

CEREALS

CANOLA

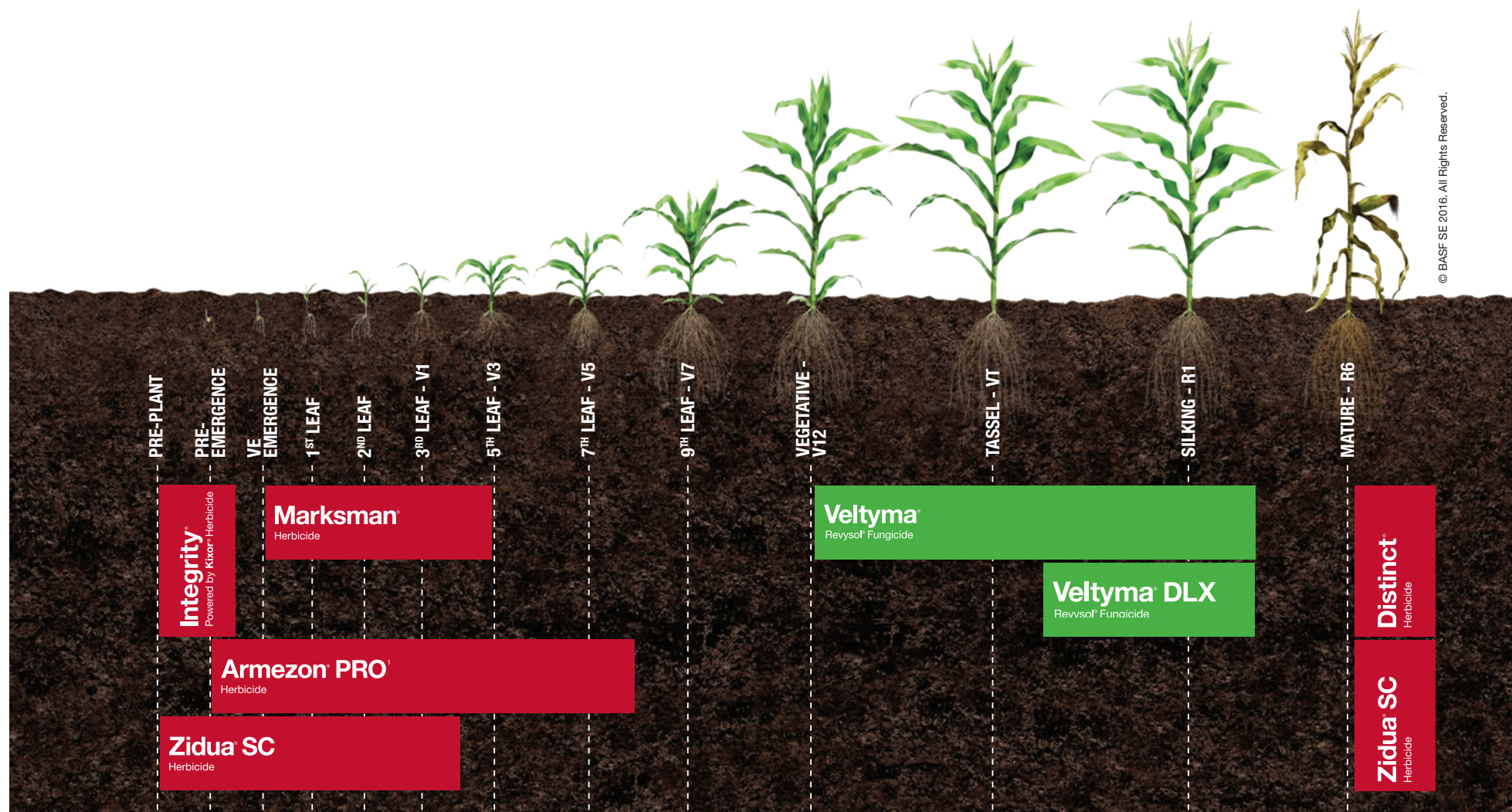
POTATOES

POST-HARVEST

RESOURCES



## Solutions for corn.



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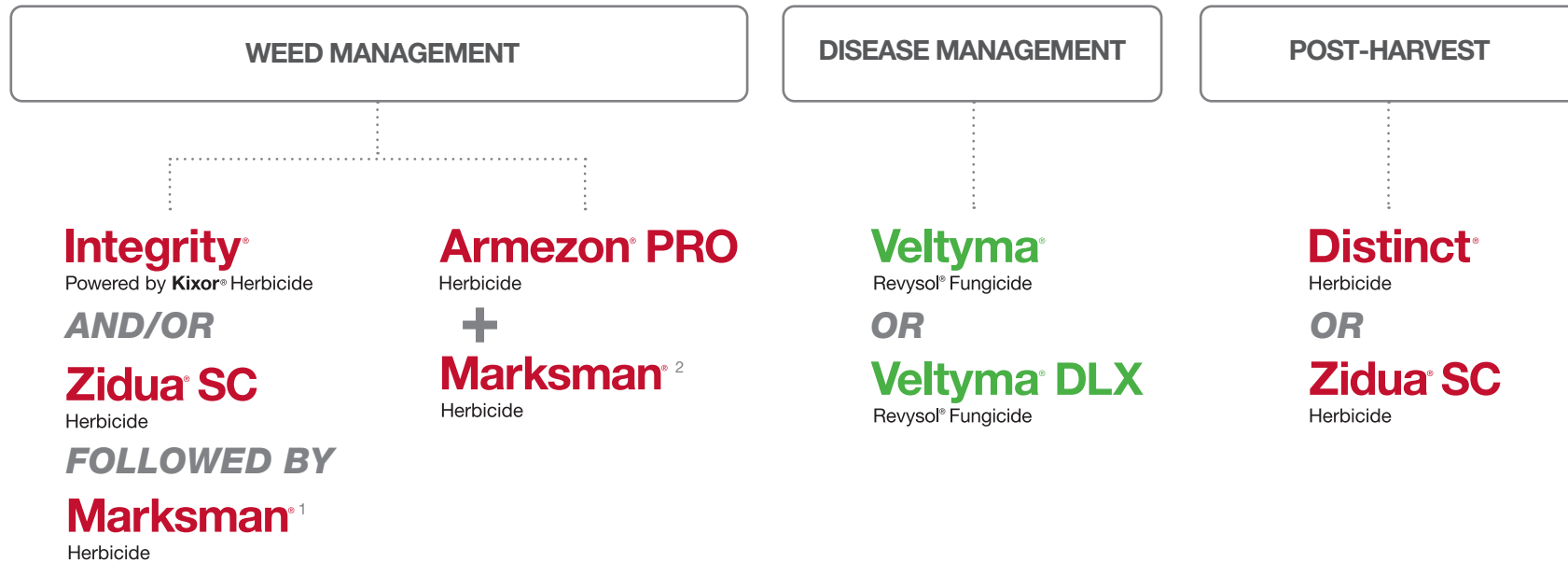
Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call **AgSolutions®** Customer Care at 1-877-371-BASF (2273) for detailed staging information.

<sup>1</sup> In conventional field corn, apply from pre-emergence to 3rd leaf. Applied in tank mix. See label for tank-mix partners.



# BASF lead recommendations.

Select the solution that's right for your operation.



Contact your BASF **AgSolutions®** Retail Representative for more information.

<sup>1</sup> Can also be tank mixed with Integrity® herbicide or Zidua® SC herbicide if applied pre-emergence.

<sup>2</sup> In tank mix with glyphosate.



# Integrity®

Powered by **Kixor®** Herbicide

## Broad-spectrum weed control to give corn a weed-free start.

- Early-season control of key grassy and broadleaf weeds
- Convenience with excellent follow-crop flexibility
- Multiple modes of effective action to help control resistant biotypes



Source: Grower Applied Strip Trials, Middlesex County, ON, 2022, 5 weeks after treatment

<b>Active ingredients</b>	Saflufenacil – Group 14 Dimethenamid-P – Group 15
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	2 x 9 L jugs Also available in 450 L tote

### Crop staging

Pre-plant<sup>1</sup>, pre-plant incorporated, pre-emergence

### Weeds controlled<sup>2</sup>

#### **Broadleaf weeds**

Common ragweed  
Eastern black nightshade<sup>3</sup>  
Lamb's quarters  
Redroot pigweed  
Velvetleaf  
Wild buckwheat  
Wild mustard

#### **Grasses**

Barnyard grass  
Crabgrass (large, smooth)  
Fall panicum  
Foxtail (giant, green, yellow)  
Old witchgrass  
Yellow nutsedge<sup>3</sup>

### Water volume

Ground application  
40 to 80 L/ac (10 to 20 gal/ac)

<sup>1</sup> Apply in tank mix with glyphosate. <sup>2</sup> Weeds listed are controlled when Integrity is applied at the full label rate of 450 ml/ac. <sup>3</sup> Pre-plant incorporated only. <sup>4</sup> Use full rate, tank mixed with glyphosate for early pre-plant. Use full rate of Integrity alone for pre-plant incorporated and pre-emergent applications. <sup>5</sup> Integrity can be used with 28% UAN as a carrier for pre-plant incorporated and pre-emergent applications. <sup>6</sup> This reduced rate should be used pre-emergence, when an in-crop application of glyphosate is planned for glyphosate-tolerant corn. See label for weeds controlled.

<sup>7</sup> Glyphosate is sold separately.

### Application rates

One case treats 40 to 60 acres.  
One tote treats 1,010 to 1,525 acres.

Full rate<sup>4</sup>

<b>Integrity<sup>5</sup></b>	450 ml/ac (1.1 L/ha)
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Set-up rate<sup>6</sup>

<b>Integrity<sup>5</sup></b>	300 ml/ac (730 ml/ha)
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or

<b>Integrity<sup>5</sup></b>	300 to 450 ml/ac (0.73 to 1.1 L/ha)
------------------------------	----------------------------------------

followed by <b>Marksman® herbicide</b>	1.0 L/ac (2.5 L/ha)
-----------------------------------------------	---------------------

<b>Glyphosate<sup>7</sup></b>	See label for rate
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### Pre-harvest interval

60 days after application for sweet corn.  
100 days after application for field corn.

### Follow crops

#### Anytime after application:

Field and sweet corn

#### 100 days after application:

Cereals other than corn

#### 11 months after application:

All other crops

#### 22 months after application:

Sugar beets, peppers and onions

# Armezon<sup>®</sup> PRO

Herbicide

Rapid, post-emergent weed control with residual activity in field corn.

- Fast-acting, broad-spectrum control of broadleaf weeds and grasses, with residual activity up until canopy closure
- Wide window of application from pre-emergence to 8 leaf stage in glyphosate-tolerant corn
- Combines Group 15 and 27 chemistries for multiple modes of action and can be tank mixed with atrazine or atrazine and glyphosate
- Armezon<sup>®</sup> PRO herbicide can also be applied in a tank mix with Marksman<sup>®</sup> herbicide and glyphosate<sup>1</sup>



Source: BASF Small Plot Trials, Maryhill, ON, 2015

<b>Active ingredients</b>	Dimethenamid-P – Group 15 Topramezone – Group 27
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	2 x 8.1 L jugs Also available in 121.5 L shuttle

## Crop staging

Pre-emergence to 8 leaf<sup>1</sup>

Emergence to 5 leaf (for tank mix)

## Weeds controlled<sup>2</sup>

### Broadleaf weeds

Common chickweed<sup>3</sup>

Common ragweed

Eastern black nightshade

Green pigweed

Lady's thumb

Lamb's quarters

Redroot pigweed

Velvetleaf<sup>3</sup>

Wild mustard

### Grasses

Barnyard grass

Crabgrass (large)

Fall panicum<sup>4</sup>

Foxtail (green, yellow)

Old witchgrass

## Pre-harvest interval

80 days after application.

45 days after application for grazing or feeding treated corn forage, silage, fodder or grain to livestock.

## Application rates

One case treats 40 acres.

One shuttle treats 300 acres.

<b>Armezon PRO</b>	405 ml/ac (1.0 L/ha)
<b>Marksman<sup>5</sup></b>	1.0 L/ac (2.5 L/ha)
<b>Glyphosate<sup>5,6</sup></b>	See label for rate

or

<b>Armezon PRO</b>	405 ml/ac (1.0 L/ha)
<b>Aatrex<sup>®</sup> 480<sup>5</sup></b>	420 ml/ac (1.04 L/ha)
<b>Glyphosate<sup>5,6</sup></b>	See label for rate

## Water volume

Ground application

Minimum 40 L/ac (10 gal/ac)

## Follow crops

4 months after application:

Winter wheat

**Following spring after application:**

Alfalfa, canola, field corn, potatoes, soybeans, spring wheat, white beans

Armezon PRO is applied in a tank mix, refer to tank-mix partner's label for any additional follow-crop restrictions.

<sup>1</sup> Crop staging depends on labelled tank mix. <sup>2</sup> Weeds controlled when Armezon PRO is applied in a tank mix with atrazine (500 g ai/ha) and Merge<sup>®</sup> adjuvant or UAN plus Assist<sup>®</sup> adjuvant. <sup>3</sup> Suppression only. <sup>4</sup> Apply before fall panicum exceeds the 2 leaf growth stage. If applied later, this weed will only be suppressed. <sup>5</sup> Aatrex<sup>®</sup> 480, glyphosate and Marksman are sold separately. <sup>6</sup> Only use glyphosate products present as isopropylamine salt or potassium salt. Glyphosate rate is 364 g a.e./ac (900 g a.e./ha), see glyphosate label for corresponding product use rate.



# Zidua® SC

Herbicide

## Residual control of key annual grasses and select broadleaf weeds.

- Liquid Group 15 chemistry delivers control of resistant pigweed and waterhemp
- Residual activity controls germinating weed seedlings before or soon after crop emergence
- Wide window of application from early pre-plant to early post-emergence in corn
- Convenient, liquid formulation that can be used standalone or tank mixed



Source: BASF Small Plot Trials, Maryhill, ON, 2015

<b>Active ingredient</b>	Pyroxasulfone – Group 15
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4.05 L jugs

### TECH TIP

*Zidua SC has low solubility in soil allowing it to stay in the top layer of the soil profile to control later-flushing weeds before they emerge. The result is residual activity during the critical period for weed control to maximize yield potential.*

### Crop staging

Pre-plant<sup>1</sup>, pre-emergence, early post-emergence up to 4 leaf

### Weeds controlled

#### Broadleaf weeds

Cleavers<sup>2,3</sup>, Common chickweed<sup>2</sup>, Eastern black nightshade<sup>2,3</sup>, Kochia<sup>2,3</sup>, Lamb's quarters<sup>2</sup>, Palmer amaranth, Redroot pigweed, Shepherd's-purse<sup>2</sup>, Waterhemp, Wild buckwheat<sup>2</sup>

#### Grasses

Barley grass, Crabgrass (large), Downy brome<sup>2</sup>, Foxtail (giant, green, yellow), Japanese brome<sup>2</sup>, Ryegrass (Italian), Wild oats<sup>2</sup>

### Application rates

One case treats 41 to 80 acres, depending on soil texture.

	Rate by soil texture			
	Coarse	Medium-fine		Fine
		Organic matter ≤ 3%	3% < Organic matter < 7%	
<b>Zidua SC</b>	101 ml/ac (250 ml/ha)	134 ml/ac (332 ml/ha)	169 ml/ac (417 ml/ha)	200 ml/ac (493 ml/ha)

### Tank mix

Apply post-emergence up to 4 leaf

<b>Zidua SC</b>	97 ml/ac (240 ml/ha)
<b>Marksman® herbicide<sup>4</sup></b>	1.0 L/ac (2.5 L/ha)
<b>Glyphosate<sup>4,5</sup></b>	See label for rate

**Click here** to learn more about tank-mix order

### Water volume

Ground application Minimum 40 L/ac (10 gal/ac)

<sup>1</sup> Up to 30 days before planting. <sup>2</sup> Early-season residual suppression only when the application rate is 120 ml/ha to 240 ml/ha. <sup>3</sup> Including Group 2-resistant biotypes. <sup>4</sup> Sold separately. <sup>5</sup> Glyphosate rate is 364 g a.e./ac (900 g a.e./ha), see glyphosate label for corresponding product use rate.

# Marksman®

Herbicide

Proven, broad-spectrum residual control of tough broadleaf weeds.

- Combines Group 4 and Group 5 chemistries for control of emerged perennials, deep-rooted annuals and resistant biotypes
- Extended residual control of late-germinating annuals, including pigweed, velvetleaf and waterhemp



Source: BASF Small Plot Trials, Maryhill, ON, 2015

<b>Active ingredients</b>	Dicamba – Group 4 Atrazine – Group 5
<b>Formulation</b>	Suspension
<b>One case contains</b>	2 x 10 L jugs Also available in 450 L tote

<sup>1</sup> Do not apply to sweet corn. <sup>2</sup> See label for rates. <sup>3</sup> Apply annually for three years at the flowering stage of bindweed and the budding stage of thistles. <sup>4</sup> Post-emergence only. Apply at cotyledon to 6 leaf stage of common cocklebur. <sup>5</sup> Including triazine-resistant biotypes. <sup>6</sup> Pre-emergence only. <sup>7</sup> For post-emergent applications, apply at unifoliate to fourth trifoliate stage of weed. Suppression only when applied pre-emergence. <sup>8</sup> Post-emergence only. <sup>9</sup> Integrity® herbicide, Armezon PRO, Prowl® H2O herbicide and glyphosate are sold separately. <sup>10</sup> Use only glyphosate products present as isopropylamine salt or potassium salt. Glyphosate rate is 364 g a.e./ac (900 g a.e./ha), see glyphosate label for corresponding product use rate.

## Crop staging<sup>1</sup>

Pre-emergence, post-emergence (spike to 5 leaf)

## Weeds controlled<sup>2</sup>

Buckwheat (tartary, wild), Canada thistle<sup>3</sup>, Cleavers, Common cocklebur<sup>4</sup>, Corn spurry, Cow cockle, Field bindweed<sup>3</sup>, Green smartweed, Lady's thumb, Lamb's quarters<sup>5</sup>, Mustard (hare's-ear, Indian, tumble, wild, wormseed), Perennial sow thistle<sup>3</sup>, Pigweed (redroot<sup>5</sup>, Russian), Ragweed (common<sup>5</sup>, false, giant), Spreading atriplex<sup>6</sup>, Velvetleaf, Volunteer adzuki beans<sup>7</sup>, Waterhemp<sup>8</sup>

## Application rates

One case treats 11 to 20 acres. One tote treats 247 to 444 acres.

**Tank mixes** For Zidua SC + Marksman tank mix, [click here](#).

<b>Marksman</b>	1.0 L/ac (2.5 L/ha)
<b>Armezon PRO<sup>9</sup></b>	405 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>9,10</sup></b>	See label for rate

<b>Marksman</b>	1.0 L/ac (2.5 L/ha)
<b>Prowl H2O<sup>9</sup></b>	890 ml/ac (2.2 L/ha)
<b>Glyphosate<sup>9,10</sup></b>	See label for rate

## Planned 2-pass

<b>Marksman</b>	1.0 L/ac (2.5 L/ha)
<b>Glyphosate<sup>9,10</sup></b>	See label for rate

<b>Integrity<sup>9</sup></b>	300 to 450 ml/ac (0.73 to 1.1 L/ha)
followed by <b>Marksman</b>	1.0 L/ac (2.5 L/ha)
<b>Glyphosate<sup>9</sup></b>	See label for rate

## Water volume

Ground application  
90 L/ac to 140 L/ac (25 to 35 gal/ac)

## Pre-harvest interval

60 days for field corn.

## Follow crops

None on label. Applying Marksman herbicide to fields previously treated with atrazine can increase the risk of residue carryover to rotational crops. Follow cropping restrictions on atrazine label.

## TECH TIP

*Apply Marksman or Engenia® herbicide when the air temperature is between 10 and 25°C. Do not apply when there is a risk of severe drop in night temperature. Avoid spraying under conditions of high humidity or when a temperature inversion is present.*

CORN

Weed Management

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

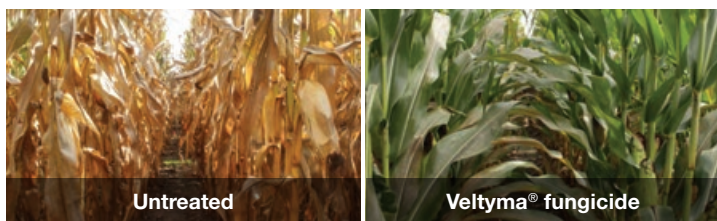
RESOURCES



**Veltyma**<sup>®</sup>Revysol<sup>®</sup> Fungicide

An optimal fungicide for protection against a broad spectrum of foliar diseases in corn.

- Fast-acting control with multiple modes of effective action
- Extended residual activity and enhanced performance provided by the unique binding activity of Revysol<sup>®</sup>
- Proven **Plant Health Benefits**<sup>1</sup> for increased growth efficiency, better management of minor stress and greater yield potential<sup>2</sup>
- Delivers preventative and post-infection activity



Source: BASF Small Plot Trials, Middlesex County, ON, 2021, 7 weeks after treatment

**TECH TIP**

*If tank mixing with an insecticide to control western bean cutworm, time the application based on the insecticide timing, as the fungicide has a wider window of application.*

<b>Active ingredients</b>	Mefentrifluconazole – Group 3 Pyraclostrobin – Group 11
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 8.1 L jugs

For use on:

ALL CORN TYPES

**YES****Crop staging**

V12 to silk browning

**Diseases controlled**<sup>3</sup>

Common rust (*Puccinia sorghi*)  
 Eyespot (*Aureobasidium zeae*)  
 Grey leaf spot (*Cercospora zeae-maydis*)  
 Northern corn leaf blight (*Setosphaeria turcica*)  
 Tar spot (*Phyllachora maydis*)

**Application rate**

One case treats 80 acres.

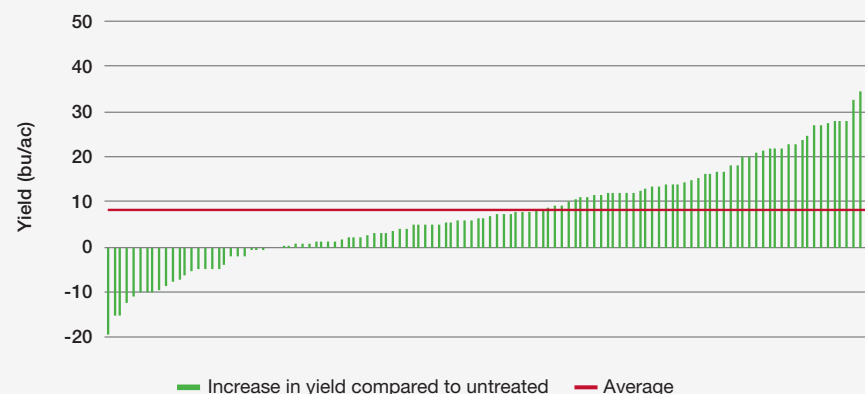
<b>Veltyma</b>	202 ml/ac (500 ml/ha)
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**Water volume**

Ground application  
 80 L/ac (20 gal/ac)  
 Aerial application  
 20 L/ac (5 gal/ac)

**Pre-harvest interval**

21 days after application for corn.

**Increased yield potential with Veltyma compared to untreated**

Source: Grower Applied Strip Trials, ON & QC, 2020-2022, n=120

<sup>1</sup> **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin.

<sup>2</sup> All comparisons are to untreated, unless otherwise stated.

<sup>3</sup> Do not make more than two sequential applications of Veltyma fungicide targeting the same disease before alternating to a labelled fungicide containing a different mode of action.

# Veltyma® DLX

Revysol® Fungicide

For use on:

ALL CORN TYPES

YES

Veltyma® DLX fungicide delivers protection against key leaf diseases and ear rots.

- Broad-spectrum management of both key leaf and ear diseases, including fusarium and gibberella ear rots
- Unique properties help to improve management of minor stress, improve standability, increase growth efficiency and produce greener leaves<sup>1</sup>
- Multiple modes of effective action for improved disease control and resistance management
- Reduces deoxynivalenol (DON) contamination to preserve grade quality

## TECH TIP

*To ensure adequate coverage of the silks, a higher water volume is essential. When targeting gibberella, apply when the silks are green. If they can be lit on fire, it's too late. The silks usually stay green for 7 to 10 days, but this depends on the hybrid and environmental conditions.*

### Active ingredients

- (1) Mefentrifluconazole – Group 3
- (1) Pyraclostrobin – Group 11
- (2) Metconazole – Group 3

### Formulation

- (1) Suspension concentrate
- (2) Liquid

### One case contains

- (1) 4.04 L jug of Veltyma fungicide
- (2) 8.1 L jug of Caramba® fungicide

## Crop staging

Full silking to silk browning

## Diseases controlled

Common rust

(*Puccinia sorghi*)

Eyespot

(*Aureobasidium zeae*)

Fusarium ear rot

(*Fusarium graminearum*)<sup>2</sup>

Gibberella ear rot

(*Gibberella zeae*)<sup>2</sup>

Grey leaf spot

(*Cercospora zeae-maydis*)

Northern corn leaf blight

(*Setosphaeria turcica*)

Tar spot

(*Phyllachora maydis*)

## Application rates

One case treats 20 acres.

<b>Veltyma</b>	202 ml/ac (500 ml/ha)
<b>Caramba</b>	405 ml/ac (1.0 L/ha)

## Water volume

Ground application

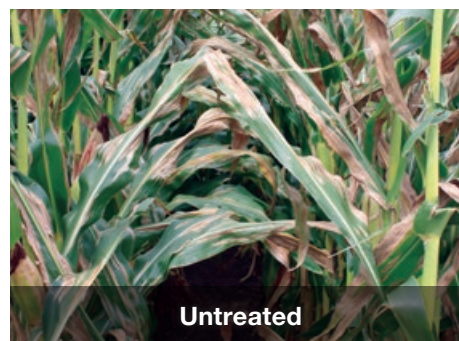
Minimum 80 L/ac (20 gal/ac)

Aerial application

20 L/ac (5 gal/ac)

## Pre-harvest interval

21 days after application for corn.



Untreated



Veltyma DLX

Source: BASF Small Plot Trials, Belmont, ON, 2021

<sup>1</sup> All comparisons are to untreated, unless otherwise stated.

<sup>2</sup> Suppression only.

CORN

Disease Management

CORN

SOYBEANS

CEREALS

CANOLA








POTATOES

POST-HARVEST

RESOURCES



# Identifying corn diseases.

Disease	Visual symptoms	Picture
<b>Anthracnose leaf blight</b>	<ul style="list-style-type: none"> <li>• Oval lesions about 15 mm in length</li> <li>• Centre is tan-brown with reddish, purplish, brownish or yellowish border</li> <li>• Disease progresses from the bottom and moves upwards</li> <li>• Top die-back can occur after silking</li> </ul>	 1
<b>Common rust</b>	<ul style="list-style-type: none"> <li>• Small, elliptical, reddish-brown pustules that can be seen on leaves, husks and stalks</li> <li>• Spores become black as they mature</li> <li>• In severe cases there can be some necrosis around the spores</li> <li>• Spores can easily be rubbed off</li> </ul>	 2
<b>Eyespot</b>	<ul style="list-style-type: none"> <li>• Round lesions that are 2-5 mm in diameter</li> <li>• Centre of the lesions are usually tan with a brown margin</li> <li>• Lesions are surrounded by yellow halo</li> </ul>	 3
<b>Grey leaf spot</b>	<ul style="list-style-type: none"> <li>• Short and narrow rectangular lesions parallel to the leaf veins appear on lower leaves after tasseling</li> <li>• Lesions range from tan to grey as the disease progresses</li> </ul>	 4
<b>Northern corn leaf blight</b>	<ul style="list-style-type: none"> <li>• Long, elliptical (cigar-shaped) lesions that are tan or grey</li> <li>• Lesions tend to appear on lower leaves first</li> <li>• Black spores can be found on the lesions when conditions are moist</li> <li>• When severe infection occurs, the lesions can coalesce and lead to the death of the leaf</li> </ul>	 5
<b>Tar spot</b>	<ul style="list-style-type: none"> <li>• Small black spots that are raised and bumpy on both sides of the leaf</li> <li>• Lesions can sometimes appear on the husks</li> <li>• Spots can be surrounded by tan-brown lesions (halo) that have a darker outer border, which are referred to as fisheye lesions</li> </ul>	 6
<b>Gibberella ear rot</b>	<ul style="list-style-type: none"> <li>• The tip of the ear or an insect-caused wound are both entry points for the reddish-pink mold to grow</li> <li>• The ear becomes spongy and can be covered in its entirety</li> <li>• Husks become bleached and tightly bound to the cobs with some black fruiting bodies visible</li> </ul>	 7

<sup>1</sup> Source: Daren Mueller, Iowa State University, Bugwood.org. <sup>2,3,4,5,6,7</sup> Source: BASF.

# Corn that's protected. Selecting the proper fungicide for your corn fields.

There are many factors to consider when making the decision to protect your field or silage corn with a fungicide application including yield potential, disease pressure, susceptibility of the hybrid and level of stress during pollination.

## Step 1: Target fields that benefit the most.

Select fields with the highest yield potential, as they often see the highest returns from an application.

These fields have:

- Adequate nitrogen
- Uniform plant stand
- Good fertility

Also look for fields with these characteristics:

- History of disease or a corn-on-corn rotation
- Hybrids that are susceptible to leaf disease
- Are experiencing stress during the pollination period

## Step 2: Consider your objective.

Once you have made the decision to use a fungicide, ensure you are making an application at the right stage with the right product to meet your objective. This will help you achieve your production goals and improve your overall results and return on investment.

- If you want to control leaf diseases such as northern corn leaf blight, tar spot or eyespot and yield is your primary objective, apply Veltyma® fungicide at tassel (VT)
- If you are concerned about yield, quality and the impact of DON, apply Veltyma DLX at silking (R1)

## Step 3: Scout.

Before applying your fungicide, check on your field to make sure the crop is at the right stage to meet your objective. If you are unsure of when to apply during silking, refer to the image below.

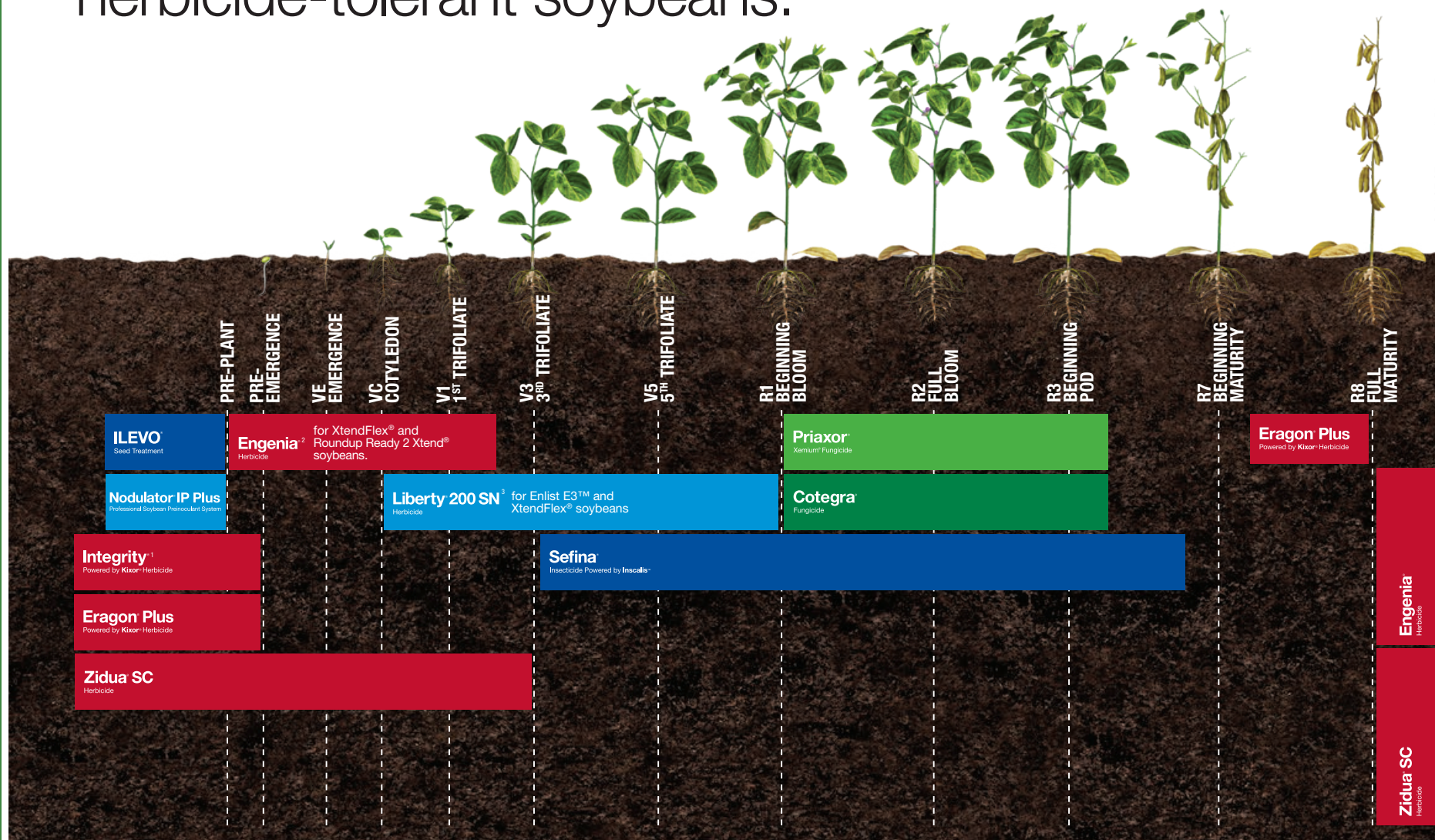
### Veltyma DLX fungicide application timing for ear disease management



Application window



## Solutions for herbicide-tolerant soybeans.



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Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call AgSolutions® Customer Care at 1-877-371-BASF (2273) for detailed staging information.

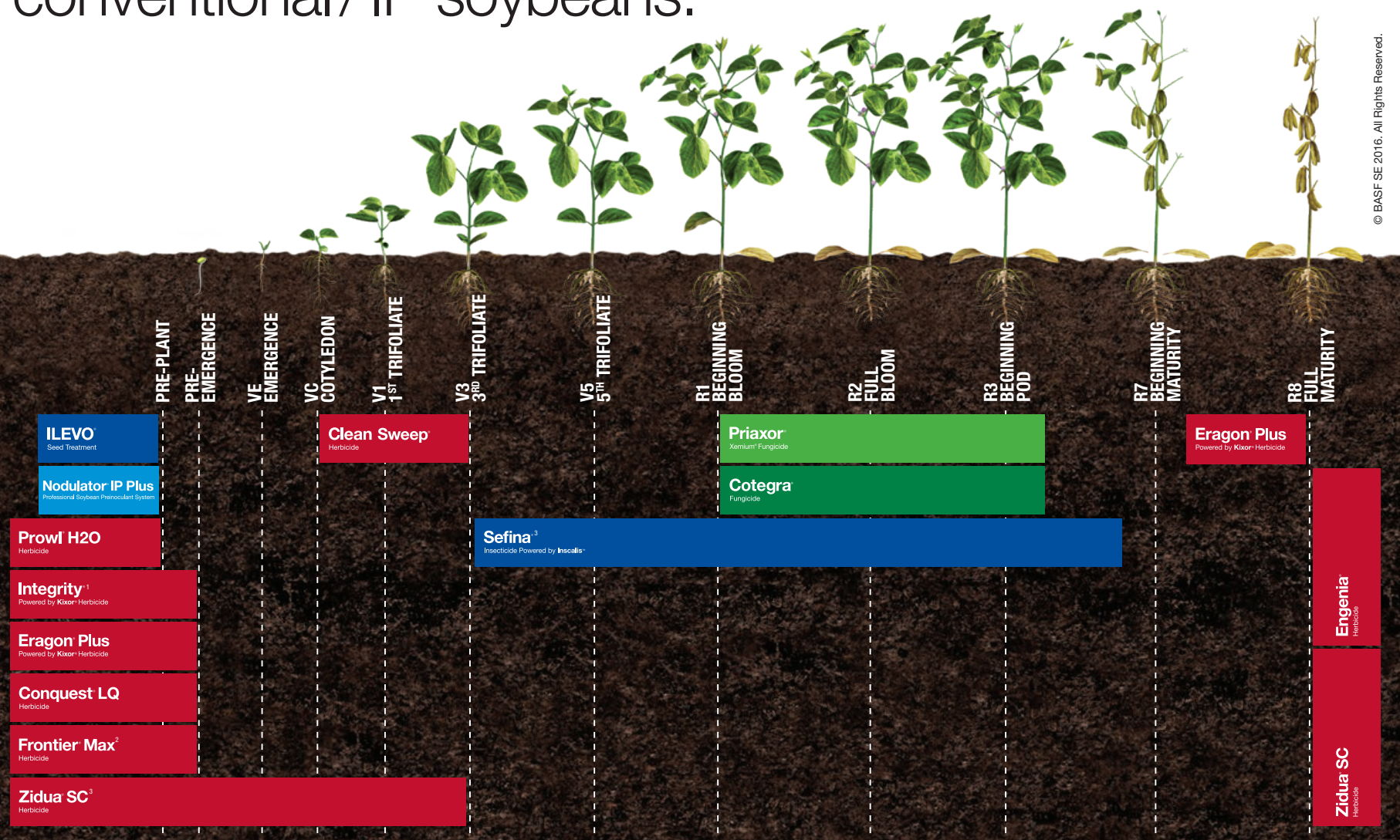
<sup>1</sup> Apply in tank mix with glyphosate and Merge® adjuvant.

<sup>2</sup> Apply by ground ONLY to XtendFlex® and Roundup Ready 2 Xtend® soybeans. Soybean varieties that are not designated as dicamba-tolerant will be damaged or destroyed by this treatment.

<sup>3</sup> Apply by ground ONLY to Liberty®-tolerant soybeans, including Enlist E3™ and XtendFlex® soybeans. Soybean varieties that are not designated as Liberty-tolerant will be damaged or destroyed by this treatment.



# Solutions for conventional/ IP soybeans.



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SOYBEANS

Crop Staging

Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call AgSolutions® Customer Care at 1-877-371-BASF (2273) for detailed staging information.

<sup>1</sup> Apply in tank mix with glyphosate and Merge® adjuvant.

<sup>2</sup> Frontier® Max herbicide can be applied at pre-plant incorporated to pre-emergence.

<sup>3</sup> Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans.

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES



# BASF lead recommendations.

Select the solution that's right for your operation.



### INSECT MANAGEMENT

**Sefina®**

Insecticide Powered by **Inscalix®**

### DISEASE MANAGEMENT

**Priaxor®**

Xemium® Fungicide

**AND/OR**

**Cotegra®**

Fungicide

### HARVEST MANAGEMENT

**Eragon® Plus<sup>NEW</sup>**

Powered by **Kixor®** Herbicide

### POST-HARVEST

**Zidua® SC**

Herbicide

**OR**

**Engenia™**

Herbicide



Contact your BASF **AgSolutions®** Retail Representative for more information.



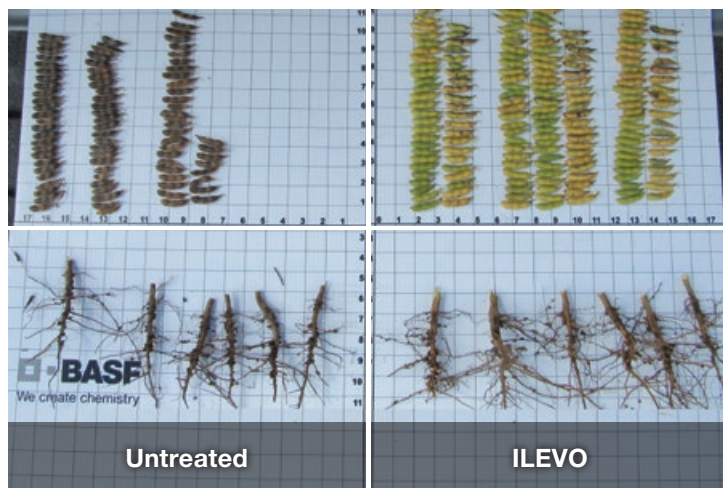
**ILEVO®**

Seed Treatment

ILEVO® seed treatment provides effective protection against sudden death syndrome (SDS) and soybean cyst nematode (SCN).

- Protects against the above-ground and below-ground phases of SDS caused by *Fusarium virguliforme*
- Powerful nematocidal activity that demonstrates effectiveness across the SCN lifecycle, reducing the potential for root infection and damage

#### ILEVO protects against nematodes



Source: Grower Applied Strip Trials, Oregon, WI, USA, 2019

#### Active ingredient

Fluopyram – Group 7

#### Formulation

Suspension

For use on:

ALL SOYBEAN  
PLATFORMS

YES

#### Crop treatment

Standard slurry or mist-type application equipment

#### Target seed and seedling pests

Sudden death syndrome (SDS) caused by *Fusarium virguliforme*

Nematodes (suppression)

- Soybean cyst nematodes (*Heterodera glycines*)
- Root lesion nematodes (*Pratylenchus penetrans*)

#### Inoculant compatibility

For details on seed treatment and inoculant compatibility, consult the inoculant compatibility information for the respective inoculant manufacturer, call **AgSolutions®** Customer Care at 1-877-371-BASF (2273) or contact your BASF **AgSolutions** Retail Representative.

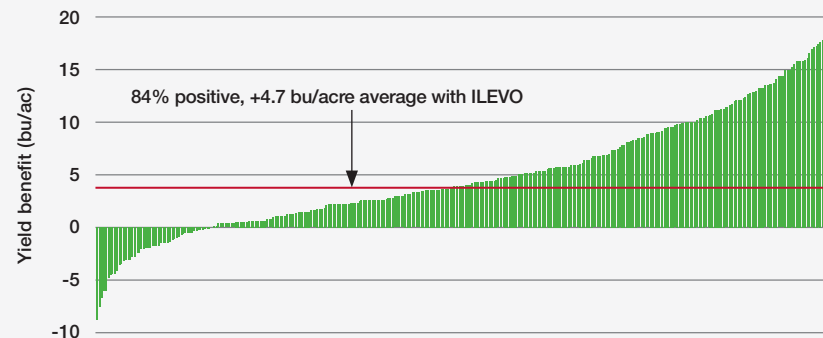
#### Application rates

One tote treats 19,455 to 64,935 kg of seed. The recommended application rate is 154 ml/100kg of seed.

ILEVO	154 ml/100 kg
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Talk to your seed treater about application.

#### ILEVO yield benefit potential on soybeans



Source: Grower Applied Strip Trials, USA and Canada, 2011-2016, n=338

# Nodulator® IP Plus

Professional Soybean Preinoculant System

Biostacked® preinoculant system for soybean nodulation and root development.

- Activity by proven *Bradyrhizobium japonicum* and dual strain biofungicide
- New and exclusive to BASF patented bladder technology improves stability and vitality of biologicals
- BASF patented biologicals have impact on root architecture and plant development during key crop establishment timing

## Nodulator® IP Plus professional soybean preinoculant system

**Bioactive ingredient** *Bradyrhizobium japonicum* (strain 532C)

**Formulation** Liquid

## Velondis® Plus biofungicide

**Bioactive ingredients** *Bacillus amyloliquefaciens* (strain MBI 600)  
*Bacillus subtilis* (strain BU 1814)

**Formulation** Liquid

**Package options**  
**200 SU**

3.0 L inoculant bladder  
3.0 L conditioner bladder  
0.2 L Velondis Plus bottle<sup>1</sup>

**400 SU**

6.0 L inoculant bladder  
6.0 L conditioner bladder  
0.4 L Velondis Plus bottle<sup>1</sup>

ALL SOYBEAN  
PLATFORMS

For use on:

YES

## Crop treatment

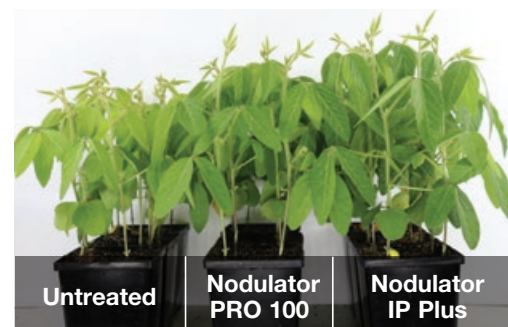
Applied on-seed exclusively by bulk seed treaters

## Application rates

One 200 SU case of Nodulator IP Plus will treat 4,536 kg (10,000 lbs) of seed.  
One 400 SU case of Nodulator IP Plus will treat 9,072 kg (20,000 lbs) of seed.

	Rate per 100 kg seed
<b>Nodulator IP Plus (inoculant + conditioner)</b>	130 ml <sup>2</sup>
<b>Velondis Plus</b>	4.4 ml

## Improved nitrogen fixation



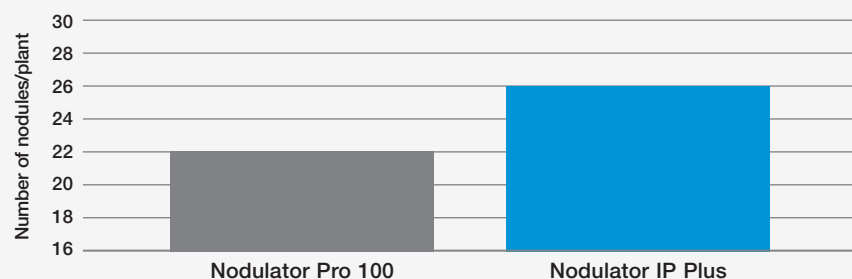
Source: BASF Greenhouse Trial, SK, 2022

Some seed treatments are harmful to liquid inoculants and the application method can affect the days-on-seed compatibility. Please see respective product labels or call **AgSolutions®** Customer Care for further information.

<sup>1</sup> Packaged separately.

<sup>2</sup> Please refer to the product label for application rates without pesticides, as 134.4 ml/100 kg is not sufficient for even seed coverage and requires additional liquid volume (water and/or pesticide).

## Improved nodule formation



Source: Grower Applied Strip Trials, MB, 2018, n=6

SOYBEANS

Crop Establishment

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES



# Eragon® Plus

Powered by **Kixor®** Herbicide

PRE-PLANT/PRE-EMERGENCE

NEW

For use on:

ALL SOYBEAN  
PLATFORMS

YES

The ultimate burndown in an easy-to-use liquid formulation.

- Group 14 chemistry controls weeds resistant to glyphosate, triazine and Group 2 herbicides
- Quickly absorbed for fast control of key broadleaf weeds
- Complements and improves your glyphosate burndown application



Source: University of Guelph Small Plot Trials, Ridgetown, ON, 2020, 4 weeks after application

<b>Active ingredient</b>	Saflufenacil – Group 14
<b>Formulation</b>	Water-based suspension concentrate
<b>One case contains</b>	1 x 1.182 L jug of Eragon LQ herbicide 2 x 8.1 L jugs of Merge® adjuvant

## Crop staging

Pre-plant, pre-emergence

## Weeds controlled

Broadleaf plantain<sup>1</sup>  
Canada fleabane<sup>2</sup>  
Common ragweed<sup>2</sup>  
Dandelion<sup>3</sup>  
Giant ragweed<sup>1,2</sup>  
Lady's thumb<sup>1</sup>  
Lamb's quarters  
Perennial sow thistle<sup>1,4</sup>  
Prickly lettuce<sup>1,5</sup>  
Redroot pigweed  
Shepherd's-purse<sup>1</sup>  
Stinkweed<sup>1</sup>  
Wild buckwheat<sup>1</sup>  
Wild mustard

## Application rates

<b>Eragon LQ</b>	30 ml/ac (73 ml/ha) <sup>6</sup>
<b>Merge adjuvant</b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>7</sup></b>	See label for rate

## Water volume

Ground application 40 to 80 L/ac  
(10 to 20 gal/ac)<sup>8</sup>

## Pre-harvest interval

60 days for all pre-plant and pre-emergent applications.

## Follow crops

**In next season after spring pre-plant/ pre-emergent application:**

Barley, canola, corn (field, sweet), dry beans, oats, soybeans, triticale, wheat (durum, spring, winter)

<sup>1</sup> Controlled with a tank mix of Eragon Plus and glyphosate for pre-plant and pre-emergent applications. <sup>2</sup> Includes glyphosate-resistant biotypes. <sup>3</sup> Suppression only. <sup>4</sup> Top growth burndown control only. <sup>5</sup> Top growth only. <sup>6</sup> Do not use rates higher than 30 ml/ac or crop injury may result. Use with glyphosate for both pre-plant and pre-emergent applications. <sup>7</sup> Glyphosate (required for optimum activity) is not included in the case. See respective glyphosate label for application rate of glyphosate. Use liquid glyphosate formulations in which glyphosate is present as isopropylamine salt, di-ammonium salt or potassium salt. <sup>8</sup> Use a higher water volume for larger weeds or when weed densities are high.

## Broad-spectrum weed control to give soybeans a weed-free start.

- Early-season control of key broadleaf weeds such as Canada fleabane, with suppression of key grasses
- Group 14 and 15 chemistries for multiple modes of action
- Control of weeds resistant to glyphosate, triazine and Group 2 herbicides
- Excellent follow-crop flexibility



On glyphosate-resistant Canada fleabane.

Source: University of Guelph Small Plot Trials, Ridgetown, ON, 2020

<b>Active ingredients</b>	Saflufenacil – Group 14 Dimethenamid-P – Group 15
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	2 x 9 L jugs Also available in 450 L tote

### Crop staging

Pre-plant<sup>1</sup>, pre-emergence<sup>1</sup>

### Weeds controlled

#### **Broadleaf weeds**

Broadleaf plantain  
Canada fleabane<sup>2</sup>  
Common ragweed<sup>2</sup>  
Dandelion<sup>3</sup>  
Giant ragweed  
Lady's thumb  
Lamb's quarters  
Perennial sow thistle<sup>4</sup>  
Prickly lettuce<sup>5</sup>  
Redroot pigweed  
Shepherd's-purse  
Stinkweed  
Wild buckwheat  
Wild mustard

#### **Grasses**

Barnyard grass<sup>6</sup>  
Crabgrass (large)<sup>6</sup>  
Foxtail (green, yellow)<sup>6</sup>

### Application rates

One case treats 120 acres.

One tote treats 3,000 acres.

<b>Integrity<sup>7</sup></b>	150 ml/ac (370 ml/ha)
<b>Merge adjuvant<sup>8</sup></b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>8</sup></b>	See label for rate

### Water volume

Ground application

40 to 80 L/ac (10 to 20 gal/ac)

### Pre-harvest interval

60 days after application for soybeans.

### Follow crops

**Anytime after application:**

Field and sweet corn

**100 days after application:**

Cereals other than corn

**11 months after application:**

All other crops

**22 months after application:**

Sugar beets

### TECH TIP

*Use multiple modes of effective action. If targeting larger glyphosate-resistant Canada fleabane, use a higher water volume (15 to 20 gal/ac) and add an additional mode of action. Apply to weeds that are small and actively growing.*

<sup>1</sup> Apply in tank mix with glyphosate. Do not incorporate as injury may occur. <sup>2</sup> Includes glyphosate-resistant biotypes.

<sup>3</sup> Suppression only. <sup>4</sup> Top growth burndown control only. <sup>5</sup> Top growth only. <sup>6</sup> Early-season suppression. <sup>7</sup> Do not incorporate as injury may occur. <sup>8</sup> Glyphosate and Merge are not included in the case. See respective glyphosate label for application rate of glyphosate.

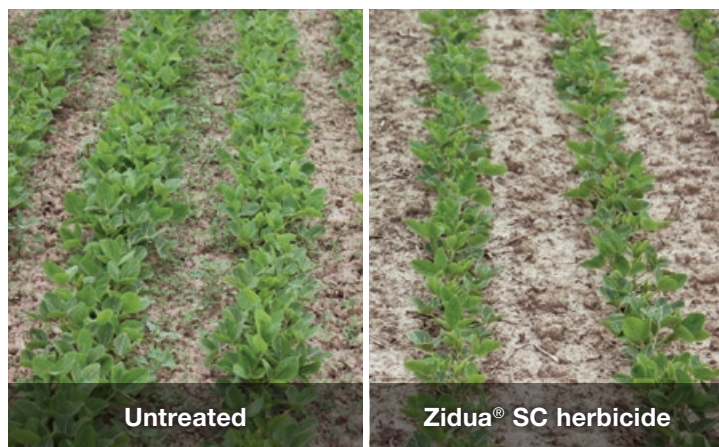


# Zidua® SC

Herbicide

Residual control of key annual grasses and select broadleaf weeds.

- Group 15 chemistry delivers control of grassy weeds as well as resistant pigweed and waterhemp
- Residual activity controls germinating seedlings before or soon after crop emergence
- Convenient liquid formulation



Source: BASF Small Plot Trials, ON, 2017

<b>Active ingredient</b>	Pyroxasulfone – Group 15
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4.05 L jugs

For use on:

CONVENTIONAL/  
IP SOYBEANS

TALK TO GRAIN  
BUYER<sup>1</sup>

ALL OTHER  
SOYBEAN  
PLATFORMS

YES

## Crop staging

Pre-plant<sup>2</sup>, pre-emergence, early post-emergence up to 3<sup>rd</sup> trifoliolate

## Weeds controlled

### Broadleaf weeds

Cleavers<sup>3,4</sup>, Common chickweed<sup>3</sup>, Eastern black nightshade<sup>3,4</sup>, Kochia<sup>3,4</sup>, Lamb's quarters<sup>3</sup>, Palmer amaranth, Redroot pigweed, Shepherd's-purse<sup>3</sup>, Waterhemp, Wild buckwheat<sup>3</sup>

### Grasses

Barnyard grass, Crabgrass (large), Downy brome<sup>3</sup>, Foxtail (giant, green, yellow), Japanese brome<sup>3</sup>, Ryegrass (Italian), Wild oats<sup>3</sup>

## Application rates

One case treats 41 to 111 acres, depending on soil texture.

Zidua SC	Rate by soil texture for residual control			
	Coarse	Medium-fine		Fine
		Organic matter ≤ 3%	3% < Organic matter < 7%	
Pre-plant, pre-emergence	101 ml/ac (250 ml/ha)	134 ml/ac (332 ml/ha)	169 ml/ac (417 ml/ha)	200 ml/ac (493 ml/ha)
Early post-emergence	73 to 97 ml/ac (180 to 240 ml/ha)			

## Water volume

Ground application

Minimum 40 L/ac (10 gal/ac)

## Follow crops

### 4 months following application:

Winter wheat

### Following spring after application:

Chickpeas, field corn, field peas, flax, lentils, potatoes, soybeans, spring wheat<sup>5</sup>, sunflowers<sup>5</sup>

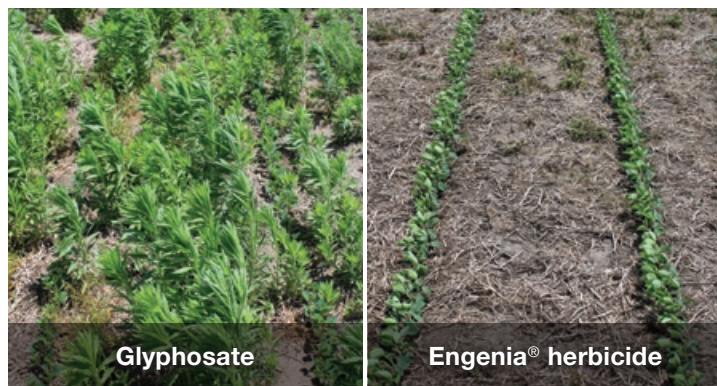
<sup>1</sup> Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans <sup>2</sup> Up to 30 days before planting. <sup>3</sup> Early-season residual suppression only when the application rate is 120 to 180 ml/ha. <sup>4</sup> Including Group 2-resistant biotypes. <sup>5</sup> This applies if total seasonal rate of Zidua SC was 120 to 240 ml/ha.

# Engenia™

Herbicide

An advanced dicamba formulation with lower volatility properties for improved broadleaf control in XtendFlex® soybeans and Roundup Ready 2 Xtend® soybeans.<sup>1</sup>

- More highly concentrated liquid formulation for easier handling and lower use rates
- Effective resistance management tool for resistant biotypes (including biotypes resistant to Group 2, Group 14, triazine and glyphosate)



On glyphosate-resistant Canada fleabane.  
Source: University of Guelph Small Plot Trials, Ridgetown, ON, 2020

<b>Active ingredient</b>	Dicamba – Group 4
<b>Formulation</b>	Solution
<b>One case contains</b>	2 x 8.09 L jugs Also available in 121.2 L shuttle

For use on:

ROUNDUP  
READY 2 XTEND®  
SOYBEANS

YES

XTENDFLEX®  
SOYBEANS

YES

ALL OTHER  
SOYBEAN  
PLATFORMS

NO

## Crop staging<sup>1</sup>

Pre-plant, pre-emergence, early post-emergence

## Weeds controlled<sup>2,3</sup>

Buckwheat (tartary, wild), Canada fleabane<sup>4</sup>, Canada thistle<sup>5</sup>, Cleavers, Common chickweed<sup>6,7</sup>, Corn spurry, Cow cockle, Eastern black nightshade<sup>7</sup>, Field bindweed<sup>5</sup>, Green smartweed, Hairly nightshade<sup>6,8</sup>, Kochia<sup>9</sup>, Lady's thumb, Lamb's quarters, Mustards (including wild), Narrow-leaved hawk's beard<sup>6,7</sup>, Perennial sow thistle<sup>5</sup>, Ragweed (common, false, giant), Redroot pigweed, Russian pigweed, Velvetleaf, Volunteer canola<sup>6,10</sup>

## Application rates

One case treats 40 to 80 acres.  
One shuttle treats 300 to 600 acres.

<b>Engenia</b> <sup>11,12,13,14,15</sup>	200 to 400 ml/ac (0.5 to 1.0 L/ha)
------------------------------------------	---------------------------------------

## Water volume

Ground application  
Minimum 40 L/ac (10 gal/ac)

Use a higher water volume to ensure adequate coverage.<sup>16</sup>

## Pre-harvest interval

7 to 10 days for soybean forage and 13 to 15 days for soybean hay.

## Follow crops

A plant-back interval of 120 days is required for all crops not on the Engenia label.



<sup>1</sup> Apply by ground ONLY to Roundup Ready 2 Xtend® and XtendFlex® soybeans. Soybean varieties that are not designated as dicamba-tolerant will be damaged or destroyed by this treatment. <sup>2</sup> For a complete list of proper weed staging, please refer to the product label. <sup>3</sup> Controlled by Engenia alone at 200 to 400 ml/ac (0.5 to 1.0 L/ha). <sup>4</sup> Post-emergence only. <sup>5</sup> Apply Engenia herbicide annually for three years at the flowering stage of bindweed and the budding stage of thistles. <sup>6</sup> Suppression only. <sup>7</sup> Including Group 2-resistant biotypes. <sup>8</sup> When Engenia is applied at 283 to 400 ml/ac (0.7 to 1.0 L/ha). <sup>9</sup> Including biotypes resistant to Group 2 and 9 chemistries. <sup>10</sup> Including conventional, Roundup Ready® and LibertyLink® cultivars, when Engenia is applied at 400 ml/ac (1.0 L/ha). <sup>11</sup> Engenia can be used alone or in tank mix with glyphosate for additional broadleaf and grassy weed control. See label for important details. <sup>12</sup> Only use glyphosate products registered for use in soybeans. Do not tank mix Engenia with glyphosate products where glyphosate is present as an ammonium salt. <sup>13</sup> For application to XtendFlex® and Roundup Ready 2 Xtend® soybeans, apply Engenia using nozzles that deliver extremely coarse to ultra-coarse spray droplets. <sup>14</sup> The 400 ml/ac (1.0 L/ha) rate of Engenia is to be used only once a season and should be used pre-plant, pre-emergence or in-crop early post-emergence. <sup>15</sup> 793 ml/ac (1.96 L/ha) of Engenia is the maximum total to be applied in a single growing season. <sup>16</sup> See label for water application rate.

SOYBEANS

Weed Management

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES



# Weed control is your goal. Stewardship is your priority.

There are several factors to consider when using a dicamba herbicide. They include:



**Nozzles** – use nozzles that deliver extremely coarse to ultra-coarse droplets



**Sensitive crop awareness** – identify neighbouring crop species



**Wind speed** – spray when wind speeds are between 3 to 15 km/h



**Application volume** – use a minimum spray volume of 10 gal/ac



**Ground speed** – maintain sprayer speed under 25 km/h



**Additives/adjuvants** – only use as required or recommended on product label



**Boom height** – keep spray boom height no higher than 50 cm above crop canopy



**Sprayer cleanout** – triple rinse, and use a detergent-based cleaner

## TECH TIP

*Do not apply Engenia when there is a temperature inversion. The three common indicators of a temperature inversion include the following:*

- 1) Clear sky
- 2) No wind
- 3) Dew present

*Applications are only permitted beginning one hour after sunrise until one hour before sunset.*

**[Click here](#) to learn more about temperature inversions.**

**Engenia™**  
Herbicide

Visit [agsolutions.ca/applicationstewardship](https://agsolutions.ca/applicationstewardship) to learn more and access the Engenia Stewardship learning module.

# Plan your Engenia herbicide application with the Engenia Spray Tool.

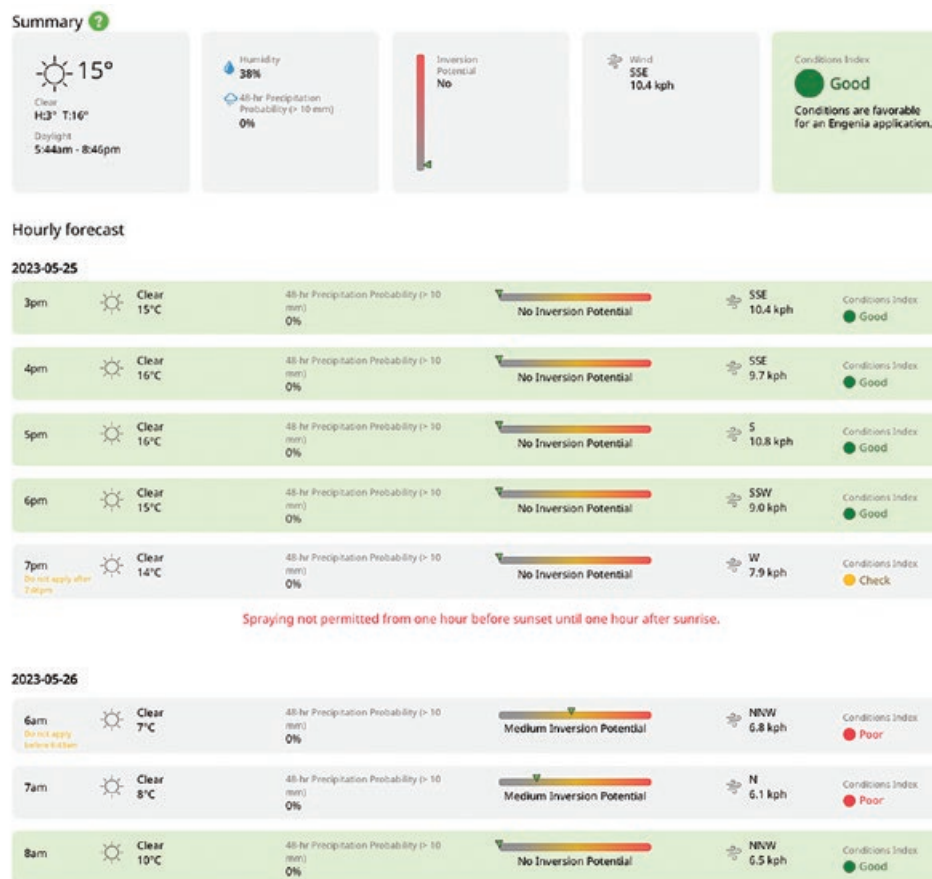
Ensuring proper application of all crop protection products is essential. The Engenia® Spray Tool was designed to help support the in-field Engenia application decision based on the current Engenia label instructions and best practices.<sup>1</sup>

1. Go to **www.engeniaspraytool.ca** (or use the QR code) and enter your location.



2. Review current and future application outlooks. If the conditions index is **red**, then do not apply. If the outlook is **green**, move to step 3.
3. Always check real time conditions prior to field application, monitor for changing conditions and record what you observed. Assess temperature, humidity, wind speed and direction, review what is around the field for sensitive crops and make sure there isn't an inversion occurring.

<sup>1</sup> This tool is for planning purposes and does not replace checking weather in the field at the time of application prior to making a spray application decision. For additional precautions, requirements and restrictions regarding the use of Engenia, read and follow Engenia label directions.



# Liberty® 200 SN

Herbicide

An excellent management tool for rotating chemistries to help keep resistance out of your fields.

- Group 10 chemistry provides broad-spectrum control of broadleaf and grassy weeds
- Flexible with respect to application timing, rates and tank mixes
- Quick, complete burndown of weeds



Zidua® SC herbicide applied pre-emergence followed by Liberty 200 SN.  
Source: BASF Small Plot Trials, London, ON, 2020, 7 days after post-emergence treatment

## TECH TIP

[Click here to learn more about Liberty 200 SN herbicide best management practices.](#)

<b>Active ingredient</b>	Glufosinate ammonium – Group 10
<b>Concentration</b>	200 g/L
<b>Formulation</b>	Solution
<b>One case contains</b>	2 x 10 L jugs Also available in 400 L tote

For use on:

XTENDFLEX®  
SOYBEANS

YES

ENLIST E3™  
SOYBEANS

YES

ALL OTHER  
SOYBEAN  
PLATFORMS

NO

## Crop staging<sup>1</sup>

Apply from cotyledon to the first flower stage and when the weeds are actively growing

## Weeds controlled

### Broadleaf weeds

Canada fleabane<sup>2,3</sup>, Canada thistle<sup>4</sup>, Chickweed, Cleavers<sup>3,5</sup>, Cocklebur, Common ragweed<sup>2</sup>, Eastern black nightshade, Field bindweed<sup>4</sup>, Giant ragweed<sup>2,5</sup>, Green pigweed, Jimsonweed<sup>6</sup>, Kochia<sup>2,3,7</sup>, Lady's thumb, Lamb's quarters, Perennial sow thistle, Redroot pigweed, Shepherd's-purse, Stinkweed, Velvetleaf<sup>6</sup>, Volunteer canola<sup>8</sup>, Waterhemp<sup>2,9</sup>, Wild buckwheat, Wild mustard, Wormseed mustard

### Grasses

Barnyard grass, Bristly foxtail, Fall panicum, Giant foxtail, Green foxtail, Large crabgrass, Proso millet, Quackgrass<sup>4,10</sup>, Wild oats, Witchgrass, Yellow foxtail

## Application rates<sup>11</sup>

One case treats 20 acres.  
One tote treats 400 acres.

<b>Liberty 200 SN</b>	1.0 L/ac (2.5 L/ha)
<b>Ammonium sulfate (recommended)</b>	2.4 L/ac (6.0 L/ha)

## Water volume

Ground application  
Minimum 80 L/ac (20 gal/ac)

## Pre-harvest interval

70 days after application for soybeans.

## Follow crops

**Anytime after application (LibertyLink® varieties only):**

Canola, field corn, soybeans

**70 days after application:**

Barley, oats, rye, triticale, wheat

**120 days after application:**

All other crops

<sup>1</sup> Apply by ground ONLY to Liberty-tolerant soybeans, including Enlist E3™ and XtendFlex® soybeans. Soybean varieties that are not designated as Liberty-tolerant will be damaged or destroyed by this treatment. <sup>2</sup> Including glyphosate-resistant biotypes. <sup>3</sup> Including Group 2-resistant biotypes. <sup>4</sup> Season long suppression. <sup>5</sup> Suppression only. <sup>6</sup> For enhanced activity, add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%). <sup>7</sup> Including Group 4-resistant biotypes. <sup>8</sup> Including conventional, Roundup Ready® and Clearfield® biotypes. <sup>9</sup> In corn and soybeans only. To control early flushes, an application of a registered pre-emergent herbicide, such as Zidua SC herbicide, is recommended.

<sup>10</sup> Add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%). <sup>11</sup> See label for use rates on specific weeds and weed stages.



# Planning your soybean herbicide program.

Soybean varieties can contain different traits that allow them to tolerate different herbicides. Below is a breakdown of what is available in the market today as well as some general guidelines for each of them. The bottom chart describes when to use our different products to help you round out your herbicide program.

Trait	Roundup Ready®	Roundup Ready 2 Xtend®	XtendFlex®	Enlist E3™
<b>Herbicide tolerance</b>	Glyphosate	Glyphosate Dicamba	Glyphosate Dicamba Glufosinate	Glyphosate Glufosinate 2,4-D
<b>BASF multiple mode of action program recommendation</b>	Tank mix Zidua® SC herbicide with a Kixor® product pre-plant or pre-emergence followed by glyphosate	Tank mix Engenia® herbicide with a Kixor product or Zidua SC pre-plant or pre-emergence followed by Engenia (low rate) in-crop up to the second trifoliolate (if necessary)	Tank mix Engenia with a Kixor product or Zidua SC pre-plant or pre-emergence followed by an in-crop application of Liberty® 200 SN herbicide before the start of flowering	Tank mix Zidua SC with a Kixor product pre-plant or pre-emergence followed by an in-crop application of Liberty 200 SN before the start of flowering
<b>More information</b>		<a href="#">Click here</a> for Engenia best practices		<a href="#">Click here</a> for Liberty 200 SN best practices

## Choosing your best herbicide tank-mix option.

	Eragon Plus	Integrity <sup>1</sup>	Zidua SC
<b>Group(s)</b>	14	14, 15	15
<b>Staging</b>	← Pre-plant, pre-emergence →		← Pre-plant, pre-emergence, post-emergence →
<b>Rate</b>	30 ml/ac	150 ml/ac	101 ml/ac
<b>Water volume</b>	← 10-20 gal/ac →		
<b>Effects</b>	<ul style="list-style-type: none"> <li>Adds an additional mode of effective action on broadleaf weeds (including resistant biotypes)</li> </ul>	<ul style="list-style-type: none"> <li>Adds two additional modes of effective action on broadleaf weeds (including resistant biotypes)</li> <li>Short-term residual activity</li> <li>Flexible application options</li> </ul>	<ul style="list-style-type: none"> <li>Adds an additional mode of effective action</li> <li>Extended residual activity on key grasses and select broadleaf weeds such as pigweed and waterhemp (including resistant biotypes)</li> </ul>

<sup>1</sup> In tank mix with glyphosate and Merge® adjuvant.

# Conquest® LQ

Herbicide

For control of tough broadleaf weeds and annual grasses in soybeans.

- Multiple modes of action for managing resistant weeds
- Season-long residual control through both soil and foliar uptake
- Rate flexibility for specific weed pressures



<b>Active ingredients</b>	Imazethapyr – Group 2 Metribuzin – Group 5
<b>Formulation</b>	Imazethapyr – Solution Metribuzin – Suspension concentrate
<b>One case contains</b>	2 x dual chamber jugs Each jug contains: 2.53 L Pursuit® herbicide 6.88 L Conquest® 480 herbicide

## Crop staging

Early pre-plant, pre-emergence

## Weeds controlled

### Broadleaf weeds

Common ragweed  
Eastern black nightshade<sup>1</sup>  
Lady's thumb  
Lamb's quarters  
Redroot pigweed  
Velvetleaf<sup>2</sup>  
Wild mustard

### Grasses

Barnyard grass  
Foxtail (green, yellow)  
Old witchgrass

## Application rates

One case treats 30 to 40 acres.

<b>Pursuit</b>	126 to 168 ml/ac (312 to 420 ml/ha)
<b>Conquest 480<sup>3</sup></b>	348 to 445 ml/ac (0.86 to 1.1 L/ha)

## Water volume

Ground application 60 to 120 L/ac  
(15 to 32 gal/ac)

## Pre-harvest interval

100 days after application for soybeans.

## Follow crops

### In next spring after application:

Field corn  
Kidney beans  
Soybeans  
Spring barley  
Spring wheat  
White beans  
Winter wheat<sup>4</sup>

## TECH TIP

***Ideal tank-mix partner with Eragon® Plus herbicide or Integrity® herbicide to provide multiple modes of effective action on glyphosate-resistant Canada fleabane. Ensure your applications include 344 ml/ac of metribuzin for optimal control.***

<sup>1</sup> Pre-emergence application. Partial control only.

<sup>2</sup> Some velvetleaf plants that germinate deeper in the soil and emerge late may escape treatment.

<sup>3</sup> Early pre-plant: medium soils only. Pre-emergence: coarse soils with more than 2% organic matter.

<sup>4</sup> Winter wheat may be grown 100 days after the application of Conquest LQ herbicide.

ALL SOYBEAN  
PLATFORMS

For use on:

YES

# Frontier® Max

Herbicide

Reliable control of tough broadleaf and grassy weeds.

- Wide window of application in soybeans
- Controls stubborn weeds such as foxtail, nightshade, nutsedge and pigweed
- Residual activity for reduced weed pressure throughout crop development
- Low use rate



<b>Active ingredient</b>	Dimethenamid-P – Group 15
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	2 x 9 L jugs

For use on:

ALL SOYBEAN  
PLATFORMS

YES

## Crop staging

Pre-plant incorporated<sup>1</sup>, pre-emergence<sup>1</sup>

## Weeds controlled

### **Broadleaf weeds**

Eastern black nightshade<sup>2</sup>

Redroot pigweed<sup>3</sup>

Waterhemp<sup>4</sup>

### **Grasses**

Barnyard grass

Crabgrass (large, smooth)

Fall panicum

Foxtail (giant, green, yellow)

Old witchgrass

Yellow nutsedge<sup>5</sup>

## Application rates

One case treats 45 to 60 acres.

<b>Frontier® Max herbicide</b>	305 to 390 ml/ac (756 to 963 ml/ha) <sup>6</sup>
------------------------------------	--------------------------------------------------

## Water volume

Ground application      Minimum 70 L/ac (17 gal/ac)

<sup>1</sup> Application stage is dependent on tank-mix partner.

<sup>2</sup> Pre-plant incorporated or pre-emergence only (390 ml/ac).

<sup>3</sup> Pre-plant incorporated (350 to 390 ml/ac) or pre-emergence (390 ml/ac) only.

<sup>4</sup> Suppression, pre-emergence only (390 ml/ac).

<sup>5</sup> Pre-plant incorporated only (390 ml/ac). Lower rates provide suppression only.

<sup>6</sup> Rate depends on soil texture and organic matter content, see label for more information.

SOYBEANS

Weed Management

CORN

SOYBEANS

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# Prowl® H2O

Herbicide

Early-season control of annual grasses and key broadleaf weeds. Before they emerge.

- Residual control of target weeds
- Low-staining formulation and reduced odour for ease of use
- Outstanding performance and crop safety



<b>Active ingredient</b>	Pendimethalin – Group 3
<b>Formulation</b>	Microcapsule suspension
<b>One case contains</b>	2 x 8.9 L jugs Also available in 450 L tote

For use on:

ALL SOYBEAN  
PLATFORMS

YES

## Crop staging

Early pre-plant, pre-plant incorporated

## Weeds controlled<sup>1</sup>

Barnyard grass  
Crabgrass (large, smooth)<sup>2</sup>  
Foxtail (green, yellow)  
Lamb's quarters<sup>3,4</sup>  
Redroot pigweed<sup>4</sup>

## Application rate

One case treats 20 acres. One tote treats 506 acres.

<b>Prowl® H2O herbicide<sup>1</sup></b>	890 ml/ac (2.2 L/ha)
-----------------------------------------	----------------------

## Water volume

Ground application 40 to 80 L/ac (10 to 20 gal/ac)

## Pre-harvest interval

100 days after application for soybeans.

## Follow crops

### 1 year after application:

Field corn  
Kidney beans  
Soybeans  
White beans

## TECH TIP

*If planning to use a vertical tillage implement, apply the herbicide prior to the tillage pass for better weed control.<sup>5</sup>*

*Prowl H2O totes come with a pump that needs to be calibrated before first use and requires occasional agitation if in prolonged storage. For more information please contact your BASF AgSolutions® Retail Representative.*

<sup>1</sup> Applied in tank mix. See label for tank-mix partners. <sup>2</sup> In tank mix with glyphosate. <sup>3</sup> Suppression only.

<sup>4</sup> Includes triazine-resistant biotypes. <sup>5</sup> Always read and follow label directions.

# Clean Sweep®

Herbicide

In a planned two-pass system, Clean Sweep® herbicide lets you take control of your weeds.

- Works on contact with emerged weeds and through residual activity
- Controls a broad spectrum of grassy and broadleaf weeds including foxtail, nightshade, ragweed and velvetleaf



20 days after planting.  
Source: BASF Small Plot Trials, London, ON, 2011

<b>Active ingredients</b>	Bentazon – Group 6 Imazethapyr – Group 2
<b>Formulation</b>	Bentazon – Liquid Imazethapyr – Solution
<b>One case contains</b>	2 x dual chamber jugs Each jug contains: 1.26 L Pursuit® herbicide 7 L Basagran® Forte herbicide

For use on:

ALL SOYBEAN  
PLATFORMS

YES

## Crop staging

Cotyledon to 3<sup>rd</sup> trifoliolate

## Weeds controlled

### Broadleaf weeds

Bird rape, Canada thistle<sup>1</sup>, Cocklebur, Common ragweed, Eastern black nightshade, Field bindweed<sup>2</sup>, Flower-of-an-hour, Lady's thumb, Lamb's quarters, Redroot pigweed, Shepherd's-purse, Stinkweed, Velvetleaf, Wild buckwheat<sup>3</sup>, Wild mustard, Yellow nutsedge<sup>1</sup>

### Grasses

Barnyard grass, Green foxtail, Large crabgrass<sup>4</sup>, Old witchgrass<sup>3</sup>, Proso millet<sup>4</sup>, Yellow foxtail

## Application rates

One case treats 20 acres.

<b>Pursuit</b>	126 ml/ac (312 ml/ha)
<b>Basagran Forte</b>	708 ml/ac (1.75 L/ha)
<b>28% UAN<sup>5</sup></b>	809 ml/ac (2.0 L/ha)

## Water volume

Ground application 80 to 120 L/ac (20 to 30 gal/ac)

## Pre-harvest interval

100 days after application for soybeans.

## TECH TIP

*For optimal efficacy, plan to apply Clean Sweep 21 days after planting.*

<sup>1</sup> May require an additional application of Basagran Forte at 708 ml/ac (1.75 L/ha) only for control.

<sup>2</sup> Suppression only.

<sup>3</sup> Early post-emergence application.

<sup>4</sup> Early post-emergence application; partial control.

<sup>5</sup> Not included in the case.

SOYBEANS

Weed Management

CORN

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# Match these herbicides with your IP soybeans.

	Conquest® LQ			Prowl® H2O <sup>1</sup>	Frontier® Max
	+ Prowl H2O <sup>1</sup>	+ Frontier Max	+ Zidua® SC <sup>2</sup>	Followed by Clean Sweep®	
<b>Groups</b>	2, 3, 5	2, 5, 15	2, 5, 15	2, 3, 6	2, 6, 15
<b>Staging</b>	PP	PRE	PP, PRE	Prowl H2O: PP Clean Sweep: cotyledon – 3rd trifoliolate	Frontier Max: PP <sup>3</sup> , PPI or PRE Clean Sweep: cotyledon – 3rd trifoliolate
<b>Rate</b>	Conquest LQ: Pursuit® 126-168 ml/ac, Conquest 480 348-445 ml/ac Prowl H2O: 890 ml/ac	Conquest LQ: Pursuit 126-168 ml/ac, Conquest 480 348-445 ml/ac Frontier Max: 305-390 ml/ac	Conquest LQ: Pursuit 126-168 ml/ac, Conquest 480 348-445 ml/ac Zidua SC: 101-200 ml/ac	Prowl H2O: 890 ml/ac Clean Sweep <sup>4</sup> : Pursuit 126 ml/ac, Basagran® Forte 708 ml/ac	Frontier Max: 305-390 ml/ac Clean Sweep <sup>4</sup> : Pursuit 126 ml/ac, Basagran Forte 708 ml/ac
<b>Broadleaf weeds<sup>5</sup></b>	Common ragweed Eastern black nightshade Lady's thumb Lamb's quarters Redroot pigweed Velvetleaf	Common ragweed Eastern black nightshade Lady's thumb Lamb's quarters Redroot pigweed Velvetleaf	Cleavers <sup>6,7</sup> Common chickweed <sup>7</sup> Common ragweed Eastern black nightshade Kochia <sup>6,7</sup> Lady's thumb Lamb's quarters Palmer amaranth Redroot pigweed Shepherd's-purse <sup>7</sup> Velvetleaf Waterhemp Wild buckwheat <sup>7</sup> Wild mustard	Canada thistle <sup>8</sup> Cocklebur Common ragweed Eastern black nightshade Field bindweed <sup>8</sup> Lady's thumb Lamb's quarters Redroot pigweed Shepherd's-purse Velvetleaf Wild buckwheat	Canada thistle <sup>8</sup> Cocklebur Common ragweed Eastern black nightshade Field bindweed <sup>8</sup> Lady's thumb Lamb's quarters Redroot pigweed Shepherd's-purse Velvetleaf Wild buckwheat
<b>Grasses<sup>5</sup></b>	Barnyard grass Crabgrass (large) Fall panicum Foxtail (green, yellow)	Barnyard grass Crabgrass (large, smooth) Fall panicum Foxtail (giant, green, yellow) Old witchgrass	Barnyard grass Crabgrass (large) Downy brome <sup>7</sup> Foxtail (giant, green, yellow) Japanese brome <sup>7</sup> Old witchgrass Ryegrass (Italian) Wild oats <sup>7</sup>	Barnyard grass Crabgrass (large, smooth) Foxtail (green, yellow) Old witchgrass Proso millet <sup>8</sup> Yellow nutsedge <sup>8</sup>	Barnyard grass Crabgrass (large, smooth) Fall panicum Foxtail (giant, green, yellow) Old witchgrass Proso millet <sup>8</sup> Yellow nutsedge <sup>8</sup>
<b>Use when</b>	Best for heavy grass pressure including crabgrass, or additional activity on lamb's quarters.	Best for heavy grass or nightshade pressure.	Best for waterhemp pressure. Best for heavy grass pressure including crabgrass, or additional activity on lamb's quarters and eastern black nightshade.	Planned 2-pass program. The soil-applied residual at planting will allow for more uniform weed emergence, which will decrease the selection pressure of the in-crop herbicide and make it easier to time the in-crop herbicide application. Use Prowl H2O on light soils or if there is a lot of grass and lamb's quarters. Apply Clean Sweep 17-24 days after the initial burndown or tillage pass.	Planned 2-pass program. The soil-applied residual at planting will allow for more uniform weed emergence, which will decrease the selection pressure of the in-crop herbicide and make it easier to time the in-crop herbicide application. Frontier Max is strong on nightshade. Apply Clean Sweep 17-24 days after the initial burndown or tillage pass.

<sup>1</sup> In tank mix with glyphosate. <sup>2</sup> Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans. <sup>3</sup> For minimum, reduced or no-till systems, applied as tank mix. See label for tank-mix partners. <sup>4</sup> The recommended application water volume is 20 to 30 gal/ac for Clean Sweep. <sup>5</sup> For the complete list of weeds controlled and/or suppressed, consult the product labels. <sup>6</sup> Including Group 2-resistant biotypes. <sup>7</sup> Early-season residual suppression only. <sup>8</sup> Suppression only.

**PPI = pre-plant incorporated   PP = pre-plant   PRE = pre-emergence**



Insecticide Powered by **Inscal**is®

For use on:

CONVENTIONAL/  
IP SOYBEANS

TALK TO GRAIN  
BUYER<sup>1</sup>

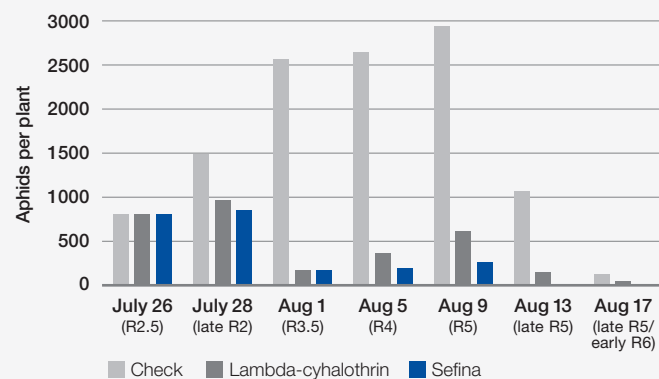
ALL OTHER  
SOYBEAN  
PLATFORMS

YES

## Lasting protection against aphids.

- Quickly halts aphid feeding, which reduces production losses
- Extended control of aphids
- Powered by Inscal<sup>is</sup>®, a unique mode of action that controls soybean aphids, including those that are resistant to other insecticides
- Effective tool in an integrated pest management strategy with a low impact on beneficial insects, including predatory and parasitic insects when used according to the label

Aphid reduction with Sefina® insecticide



Plots sprayed on July 26. Sefina insecticide was applied at 81 ml/ac.  
Source: University of Guelph Small Plot Trials, Winchester Research Station, Winchester, ON, 2022, n=1

Active ingredient	Afidopyropen – Group 9D
Formulation	Dispersion concentrate
One case contains	2 x 3.24 L jugs

### Crop staging

Emergence to full maturity<sup>2</sup>

### Pest controlled

Soybean aphid (*Aphis glycines*)

### Application rate<sup>3,4</sup>

One case treats 80 acres.

Sefina	81 ml/ac (200 ml/ha)
--------	----------------------

### Water volume

Ground application 40 to 80 L/ac (10 to 20 gal/ac)

Aerial application 20 L/ac (5 gal/ac) minimum

### Pre-harvest interval

7 days after application.

### TECH TIP

*Use a higher water volume to ensure adequate coverage.*

*Integrated pest management (IPM) strategies rely on different measures such as biological (predatory or parasitic insects) and chemical (insecticides) practices to be used in the same field. Sefina does just that since its low impact on beneficial insects allows growers to control aphids while the beneficials remain to help keep future aphid populations low.*

<sup>1</sup> Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans. <sup>2</sup> Damage is typically only economic from R1 to R5. <sup>3</sup> Allow a minimum of 7 days between applications. <sup>4</sup> Do not apply more than 162 ml/ac (400 ml/ha) per year.

SOYBEANS

Insect Management

CORN

SOYBEANS

CEREALS


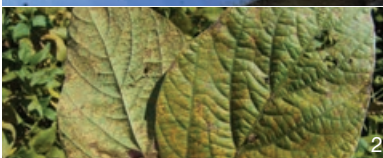





CANOLA

POTATOES

POST-HARVEST

RESOURCES

# Identifying soybean diseases.

Disease	Visual symptoms	Picture
<b>Anthracnose</b>	<ul style="list-style-type: none"> <li>• Irregular reddish/dark brown to black lesions (blotches) are found on the stems</li> <li>• Foliar symptoms include red/brown discolouration of veins, leaf rolling and premature leaf drop</li> <li>• Petiole infection can make the stem resemble a shepherd's crook</li> <li>• Pods can produce smaller seeds or have missing seeds</li> </ul>	
<b>Asian soybean rust</b>	<ul style="list-style-type: none"> <li>• Small grey/yellow water-soaked lesions that become tan/dark brown and increase in size</li> <li>• Symptoms start in the lower canopy before moving to the mid to upper canopy</li> <li>• Lesions are mostly found on the leaves but can also be on the petioles, stems and pods</li> <li>• High lesion density will cause leaves to drop and plants to mature early</li> </ul>	
<b>Cercospora blight and purple seed stain</b>	<ul style="list-style-type: none"> <li>• Red to purple lesions; from needle tip size up to 1 cm</li> <li>• Lesions can coalesce to form larger irregular lesions</li> <li>• Symptoms can be found on the midrib, lateral veins, stems, petioles and pods</li> <li>• Develops during senescence</li> </ul>	
<b>Frog eye leaf spot</b>	<ul style="list-style-type: none"> <li>• Round lesions that are 1 to 5 mm in diameter; lesions will coalesce over time</li> <li>• The centre of the lesions are usually tan with a brown or dark red margin</li> <li>• Grey spores can be seen on the lesions</li> <li>• Symptoms tend to appear during flowering and pod development</li> </ul>	
<b>Phomopsis</b>	<ul style="list-style-type: none"> <li>• Affects the stems, petioles, pods and seeds mostly in the lower part of the plant</li> <li>• Black dots (pycnidia) placed in rows can be seen on parts of the stem</li> <li>• Infected seeds are dull, chalky white and look shriveled</li> <li>• Usually a late-season disease</li> </ul>	
<b>Septoria brown spot</b>	<ul style="list-style-type: none"> <li>• Small irregular-shaped dark brown lesions that can coalesce</li> <li>• Lesions are on both sides of the leaves</li> <li>• Progresses from the bottom of the plant to the upper leaves</li> <li>• Infected leaves turn yellow and will drop</li> </ul>	
<b>White mold</b>	<ul style="list-style-type: none"> <li>• White to grey/bleached lesions are present on stems, leaves and petioles</li> <li>• Fluffy white mycelium can be found on the lesions under humid temperatures</li> <li>• Lesions are mostly found in the lower half of the canopy</li> <li>• Once the plant is infected, it will start wilting, turn brown and die</li> <li>• Hard, black sclerotia can be found on or in the stem lesions and in infected pods</li> </ul>	

<sup>1,4,6,7</sup> Source: BASF. <sup>2</sup> Source: Edward Sikora, Auburn University, Bugwood.org. <sup>3,5</sup> Source: Daren Mueller, Iowa State University, Bugwood.org.



# Deciding which soybean fungicide is right for you.

Make the best decisions when it comes to managing white mold. It can have a high impact on yield and is on the rise due to tighter crop rotations, increased fertility and the growth of higher yielding and bushier varieties. White mold is estimated to lower yield by 2.5 to 5 bu/ac for every 10% incidence of the disease.<sup>1</sup>



White mold risk level	R1 – Early flower	R2 – Full flower	R2.5	R3 – Early to mid-pod	R4 – Full pod
Low <sup>2</sup>		<b>Priaxor®</b> Xemium® Fungicide 180 ml/ac (450 ml/ha)			
Moderate		<b>Priaxor®</b> Xemium® Fungicide 180 ml/ac (450 ml/ha)                     → 10 – 14 days → <b>Cotegra®</b> Fungicide (if needed) 280 ml/ac (700 ml/ha)			
High <sup>3</sup>		<b>Cotegra®</b> Fungicide 280 ml/ac (700 ml/ha)                     → 10 – 14 days → <b>Priaxor®</b> Xemium® Fungicide 180 ml/ac (450 ml/ha)			

<sup>1</sup> Yang, Lundeen and Uphoff, 1999.

<sup>2</sup> Low risk is defined by the following factors: below average moisture, no-till and tolerant varieties.

<sup>3</sup> High risk is defined by the following factors: above-average moisture, moderate temperatures, field history, tight crop rotations, manure, tillage, high plant population, narrow row spacing and susceptible varieties.

## TECH TIP

*Fungicides are more effective when applied preventatively. When in doubt, it's better to apply earlier in the application window for white mold during flowering (white mold spores feed on flower petals). Remember, when grass is green, white mold is keen.*

# Priaxor®

Xemium® Fungicide

For use on:

ALL SOYBEAN  
PLATFORMS

YES

Proven and consistent. A more advanced fungicide that enhances your soybean yield potential.<sup>1</sup>

- More consistent<sup>2</sup> and continuous control of diseases including frog eye leaf spot and septoria brown spot
- Combines the active ingredient Xemium® with proven **Plant Health Benefits**<sup>3</sup> including increased seed weight<sup>1</sup>
- Multiple modes of action for increased performance and reduced risk for the onset of fungicide resistance



Source: Grower Applied Strip Trials, ON, 2013

<b>Active ingredients</b>	Pyraclostrobin – Group 11 Fluxapyroxad – Group 7
<b>Formulation</b>	Liquid suspension
<b>One case contains</b>	2 x 9.6 L jugs

## Crop staging<sup>4</sup>

Early flower to mid-pod development (R1 to R3)

## Diseases controlled

Asian soybean rust  
(*Phakopsora pachyrhizi*)

Frog eye leaf spot  
(*Cercospora sojina*)

Septoria brown spot  
(*Septoria glycines*)

White mold  
(*Sclerotinia sclerotiorum*)<sup>5</sup>

## Application rates

One case treats 107 to 160 acres.

<b>Priaxor<sup>5</sup></b>	120 to 180 ml/ac (300 to 450 ml/ha)
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## Water volume

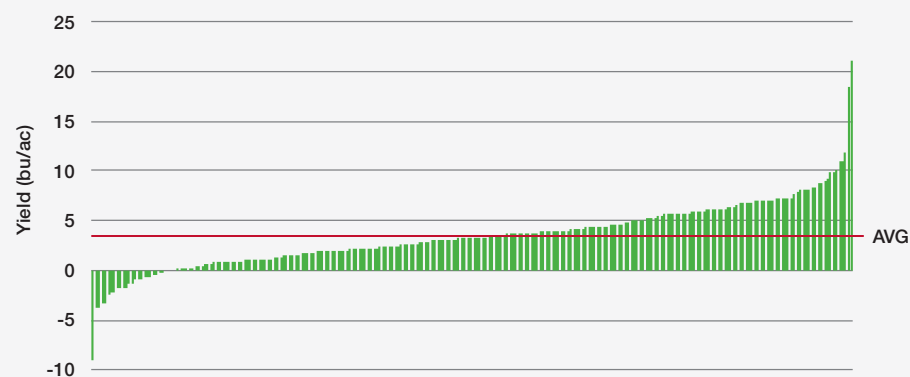
Ground application  
40 to 80 L/ac (10 to 20 gal/ac)<sup>6</sup>

Aerial application  
20 L/ac (5 gal/ac)

## Pre-harvest interval

21 days after application for soybeans.

## Increased soybean yield potential with Priaxor compared to untreated



Source: Grower Applied Strip Trials, ON & QC, 2013-2019, n=252

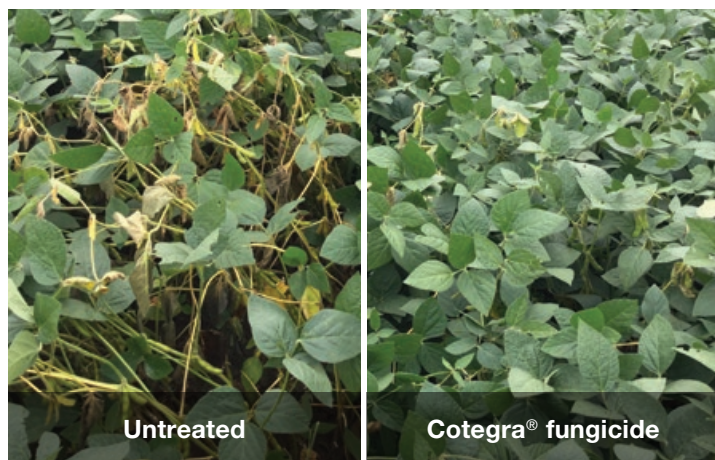
<sup>1</sup> All comparisons are to untreated, unless otherwise stated. <sup>2</sup> Compared to competitor products. Source: BASF Small Plot Trials, ON & QC, 2013-2018, n=16. <sup>3</sup> **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin. <sup>4</sup> While Priaxor can be applied at earlier growth stages, research suggests the stated timing provides optimal **Plant Health Benefits**. <sup>5</sup> Apply Priaxor fungicide at the increased rate of 180 ml/ac for suppression of sclerotinia stem rot. <sup>6</sup> BASF recommends using a higher water volume to ensure adequate coverage and better activity on leaf diseases.

# Cotegra®

Fungicide

## The standard for sclerotinia management.

- Combines two leading active ingredients in a convenient liquid premix
- Provides activity on pod and stem blight
- Offers significant yield potential improvements



Source: Grower Applied Strip Trials, Ripley, ON, 2017

<b>Active ingredients</b>	Boscalid – Group 7 Prothioconazole – Group 3
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 9.8 L jugs

For use on:

ALL SOYBEAN  
PLATFORMS

YES

### Crop staging

Early flower to mid-pod development (R1 to R3)

### Diseases controlled

Asian soybean rust  
(*Phakopsora pachyrhizi*)

Frog eye leaf spot  
(*Cercospora sojina*)

Pod and stem blight  
(*Diaporthe phaseolorum*)

Septoria brown spot  
(*Septoria glycines*)<sup>1</sup>

White mold  
(*Sclerotinia sclerotiorum*)<sup>1</sup>

### Application rate

One case treats 70 acres.

<b>Cotegra</b>	280 ml/ac (700 ml/ha)
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### Water volume

Ground application  
Minimum 80 L/ac (20 gal/ac)

Aerial application  
20 L/ac (5 gal/ac)

### Pre-harvest interval

21 days after application for soybeans.

### Increased soybean yield potential with Cotegra fungicide



Source: Grower Applied Strip Trials, ON & QC, 2015-2019, n=59

<sup>1</sup> Suppression only.

SOYBEANS

Disease Management

CORN

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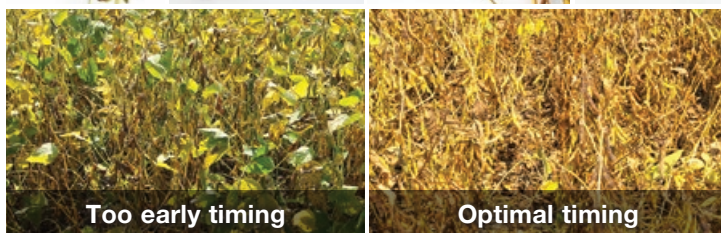
# Eragon® Plus

Powered by **Kixor®** Herbicide

PRE-HARVEST

An easy-to-use liquid formulation for complete crop and weed dry down in soybeans.

- Fast, complete crop dry down and reduced risk of regrowth
- Improved crop uniformity for easier harvestability
- Tank mixed with glyphosate to control fall perennials for cleaner fields in the next crop
- To ensure optimal results, correct timing is essential for pre-harvest applications



## Active ingredient

Saflufenacil – Group 14

## Formulation

Water-based suspension concentrate

## One case contains

1 x 1.182 L jug of Eragon® LQ herbicide  
2 x 8.1 L jugs of Merge® adjuvant

NEW

## Crop staging

Apply when 90% of the pods have changed colour, with lower pods essentially being all brown and the upper pods a yellowish-brown or grey in some varieties. At this point, 80% of leaves should have dropped with the remaining leaves being yellow.

## TECH TIP

*Get your herbicide application deeper into the canopy for a more complete dry down with these tips:*

- **Use 20 gal/ac water volume**
- **Keep boom height approximately 50 cm above canopy**
- **Spray on a clear sunny day, in the middle of the day**
- **Avoid spraying when dew is present**
- **Avoid spraying during cooler, overcast or wet conditions**

For use on:

ALL SOYBEAN PLATFORMS

YES

## Application rates

### Recommended use pattern

<b>Eragon LQ<sup>1</sup></b>	30 to 59 ml/ac (73 to 146 ml/ha)
<b>Merge adjuvant</b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>2</sup></b>	1.0 L/ac (2.5 L/ha)

### For seed production or restrictions on glyphosate use

<b>Eragon LQ</b>	59 ml/ac (146 ml/ha)
<b>Merge adjuvant</b>	400 ml/ac (1.0 L/ha)

## Water volume

Ground application  
80 L/ac (20 gal/ac)

## Pre-harvest interval

3 days after application of Eragon Plus

7 days after application if tank mixed with glyphosate.

<sup>1</sup> Use higher rate for heavier weed pressure or if glyphosate-resistant weeds are present.

<sup>2</sup> Glyphosate (required) is not included in the case.

Access the Eragon staging guide at [agsolutions.ca/eragon-guide](https://agsolutions.ca/eragon-guide).





# SOYBEANS

Harvest Management

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[SOYBEANS](#)

[CEREALS](#)

[CANOLA](#)

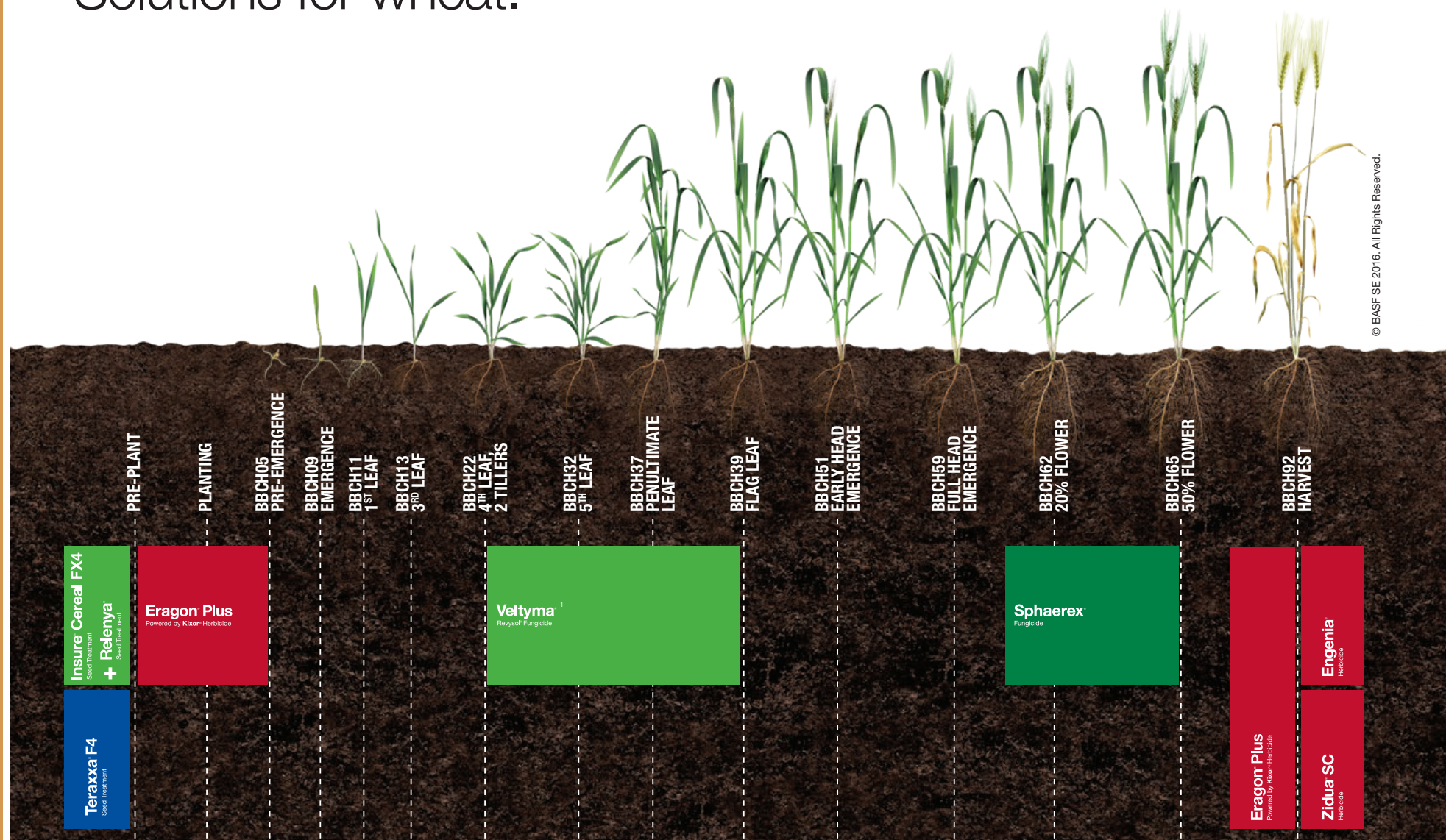
[POTATOES](#)

[POST-HARVEST](#)

[RESOURCES](#)



## Solutions for wheat.



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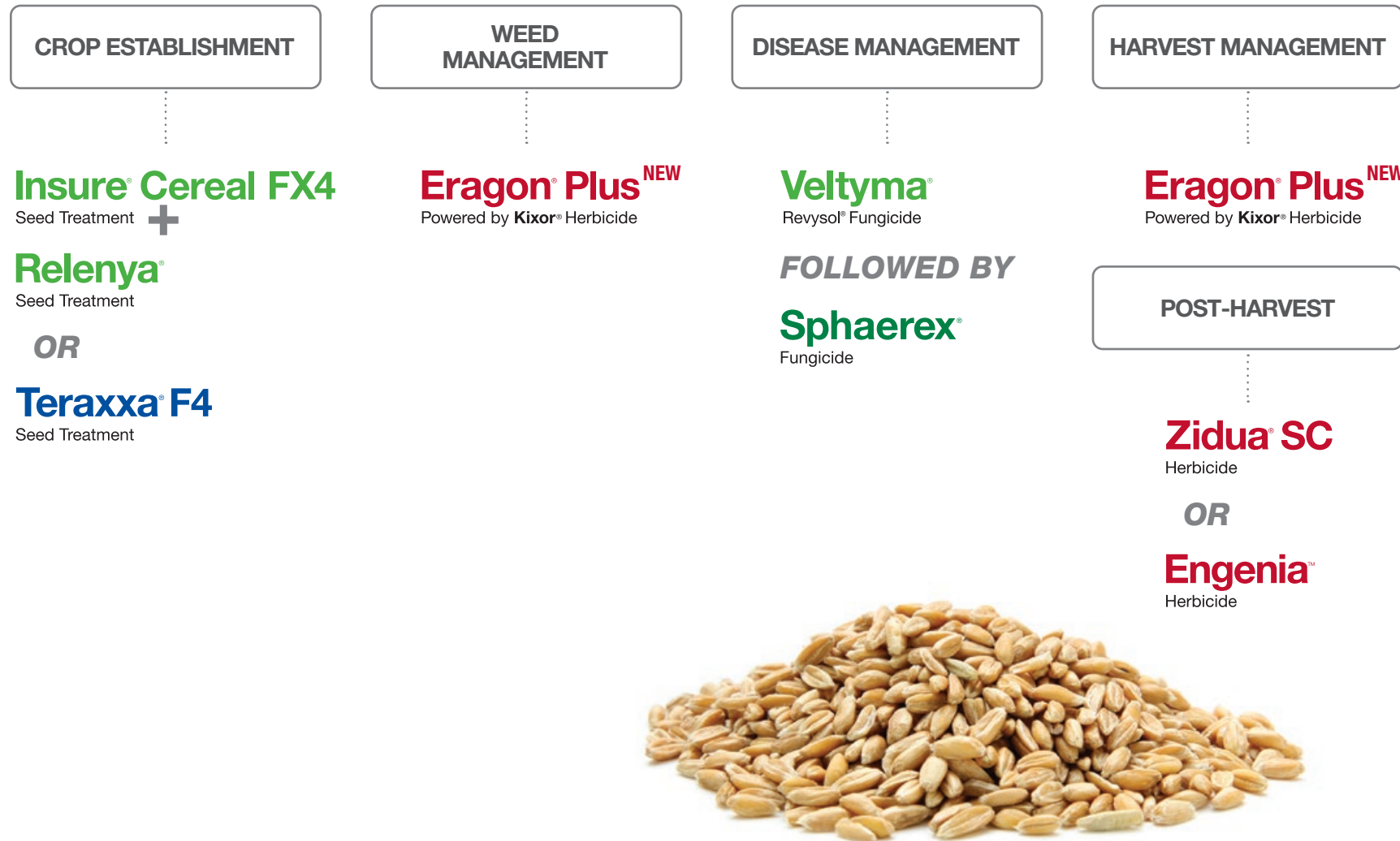
Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call AgSolutions® Customer Care at 1-877-371-BASF (2273) for detailed staging information.

<sup>1</sup> Veltyma® fungicide can also be applied at other stages (earlier at the penultimate leaf stage, before the development of disease or early onset of disease). However, research suggests that flag-leaf timing provides optimal **Plant Health Benefits**.



# BASF lead recommendations.

Select the solution that's right for your operation.



Contact your BASF **AgSolutions**® Retail Representative for more information.

# Insure® Cereal FX4 + Relenya®

Seed Treatment

Seed Treatment

Combining Insure® Cereal FX4 with Relenya® seed treatment for enhanced yield potential and broad-spectrum disease protection on wheat.

## Insure Cereal FX4

- Four modes of effective action, including three active ingredients targeting fusarium
- **Plant Health Benefits**<sup>1</sup> offer greater germination for improved emergence and enhanced seedling vigour, including better management of minor stress<sup>2</sup>

## Relenya

- Designed to perform with cutting-edge Revysol® technology that binds to pathogens
- Partners with Insure Cereal FX4 to add protection against dwarf bunt and boost protection under fusarium pressure

### Insure Cereal FX4

<b>Active ingredients</b>	Triticonazole – Group 3 Metalaxyl – Group 4 Fluxapyroxad – Group 7 Pyraclostrobin – Group 11
<b>Formulation</b>	Water-based suspension
<b>Packaging contains</b>	120 L drum

### Relenya

<b>Active ingredient</b>	Mefentrifluconazole – Group 3
<b>Formulation</b>	Water-based suspension
<b>One case contains</b>	4 x 5 L jugs

## Crop treatment

### Insure Cereal FX4 and Relenya:

Standard slurry, gravity flow or mist-type seed treatment

### Diseases controlled with Insure Cereal FX4

#### In wheat.

Seed rot and damping off (pre-emergent) caused by *Fusarium* spp., *Rhizoctonia solani*, *Cochliobolus sativus* and *Pythium* spp.

Damping off (post-emergent), seedling blight and root rot caused by *Fusarium* spp., *Rhizoctonia solani* and *Pythium* spp.

Loose smut (*Ustilago tritici*) and common bunt (*Tilletia tritici*, *T. lavies*)

## Diseases controlled with Relenya

### In wheat.

Seed rot, damping off (pre- and post-emergent) and seedling blight caused by *Fusarium* spp.

Dwarf bunt caused by *Tilletia controversa*

## Application rates

<b>Insure Cereal FX4</b>	300 ml/100 kg seed
<b>Relenya</b>	12.5 ml/100 kg seed

## Increased emergence in wheat



Competitor



Insure Cereal FX4

Source: Grower Applied Strip Trials, Cut Knife, SK, 2021

<sup>1</sup> **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin.

<sup>2</sup> All comparisons are to untreated unless otherwise stated.

# Teraxxa® F4

Seed Treatment

The only seed treatment that eliminates wireworms in cereals.

- Novel insecticide mode of action delivers the proven standard for wireworm control in cereals
- Rapidly eliminates wireworms upon contact and reduces resident populations in season for true control
- Includes four fungicide modes of action to deliver broad-spectrum protection against key seed- and soil-borne diseases to protect your investment
- Formulated for reduced viscosity and optimized usability for ease-of-use during treating

## Insecticide active ingredient

Broflanilide – Group 30

## Fungicide active ingredients

Triticonazole – Group 3  
Metalaxyl – Group 4  
Fluxapyroxad – Group 7  
Pyraclostrobin – Group 11

## Formulation

Water-based suspension

## One case contains

2 x 9.8 L jugs  
Also available in 120 L drum

## Crop treatment

Standard slurry, gravity flow or mist-type application equipment

## Pest controlled

Wireworms

## Diseases controlled

### In barley, oats, rye, triticale and wheat.

Seed rot, damping off (pre- and post-emergent)<sup>1</sup>, seedling blight<sup>2</sup>, root rot<sup>2</sup>, crown rot<sup>3</sup> and foot rot<sup>3</sup> caused by *Cochliobolus sativus*, *Fusarium* spp., *Pythium* spp. and *Rhizoctonia solani*

## In barley.

Covered smut (*Ustilago hordei*), false loose smut (*U. nigra*) and true loose smut (*U. nuda*)

## In oats.

Covered smut (*U. kolleri*) and loose smut (*U. avenae*)

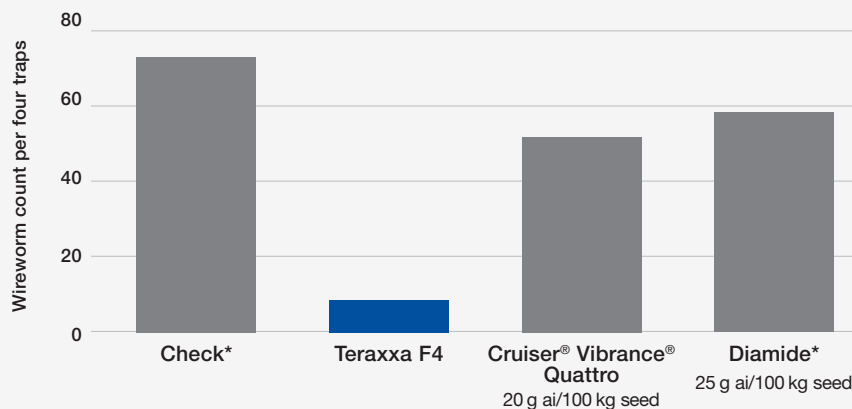
## In rye, triticale and wheat.

Common bunt (*Tilletia tritici*, *T. lavies*) and loose smut (*U. tritici*)

## Application rate

Teraxxa® F4 seed treatment	300 ml/100 kg seed
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## Reduced wireworm populations



\* Mixed with Insure® Cereal FX4 seed treatment at 300 ml/100 kg rate.

Source: BASF Small Plot Trials, Agassiz, BC, 2019, n=1

<sup>1</sup> Except in *Cochliobolus sativus* (pre-emergent only). <sup>2</sup> Suppression only when caused by *Cochliobolus sativus*.

<sup>3</sup> Only applies to *Fusarium* spp.; suppression only.

CEREALS

Crop Establishment

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES



# Eragon® Plus

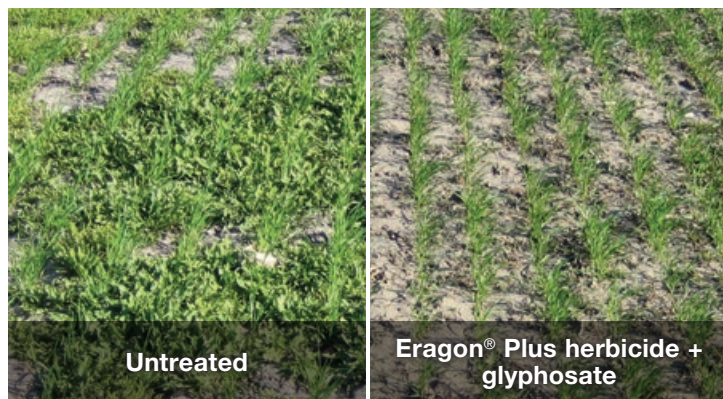
Powered by **Kixor®** Herbicide

PRE-PLANT/PRE-EMERGENCE

NEW

The ultimate pre-emergent burndown in an easy-to-use liquid formulation.

- A fall application prior to winter wheat allows you to optimize your foliar fungicide application the following spring for increased yield potential
- Complements and improves the efficacy of your glyphosate application while providing an additional mode of effective action for resistance management
- Use as a fall application for winter wheat or as a spring application for spring cereals



Source: Grower Applied Strip Trials, Maryhill, ON, 2012

<b>Active ingredient</b>	Saflufenacil – Group 14
<b>Formulation</b>	Water-based suspension concentrate
<b>One case contains</b>	1 x 1.182 L jug of Eragon LQ herbicide 2 x 8.1 L jugs of Merge® adjuvant

## Crop staging

Pre-plant, pre-emergence in barley, oats and wheat (spring, winter)

## Weeds controlled

Broadleaf plantain<sup>1</sup>  
Canada fleabane<sup>2</sup>  
Common ragweed<sup>2</sup>  
Dandelion<sup>3</sup>  
Giant ragweed<sup>1,2</sup>  
Lady's thumb<sup>1</sup>  
Lamb's quarters  
Perennial sow thistle<sup>1,4</sup>  
Prickly lettuce<sup>1,5</sup>  
Redroot pigweed  
Shepherd's-purse<sup>1</sup>  
Stinkweed<sup>1</sup>  
Wild buckwheat<sup>1</sup>  
Wild mustard

## TECH TIP

*Eragon Plus can help you achieve a clean start in the fall, which may delay and sometimes eliminate the need for an in-season herbicide application. This can also result in a fungicide application that's closer to the ideal flag-leaf timing.*

<sup>1</sup> Controlled with a tank mix of Eragon Plus and glyphosate for pre-plant and pre-emergent applications. <sup>2</sup> Includes glyphosate-resistant biotypes. <sup>3</sup> Suppression only. <sup>4</sup> Top growth burndown control only. <sup>5</sup> Top growth only. <sup>6</sup> See label for use rates on specific weeds and weed stages. <sup>7</sup> Glyphosate (required for optimum activity) is not included in the case. See respective glyphosate label for application rate of glyphosate. <sup>8</sup> Use a higher water volume for larger weeds or when weed densities are high.

## Application rates<sup>6</sup>

<b>Eragon LQ</b>	59 ml/ac (146 ml/ha)
<b>Merge</b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>7</sup></b>	See label for rate

## Water volume

Ground application  
40 to 80 L/ac (10 to 20 gal/ac)<sup>8</sup>

## Pre-harvest interval

60 days for all pre-plant and pre-emergent applications.

## Follow crops

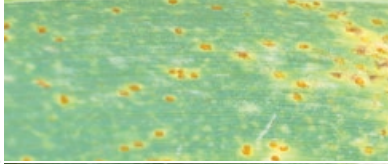
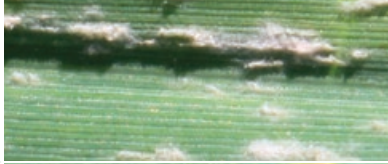
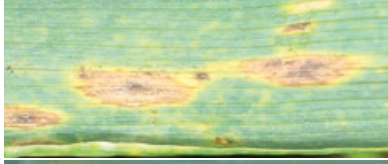
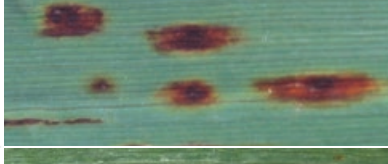



**In next season after spring pre-plant/pre-emergent application:**

Barley, canola, corn (field, sweet), dry beans, oats, soybeans, triticale, wheat (durum, spring, winter)

**In next season after fall pre-plant/pre-emergent application:**

Barley, canola, corn (field, sweet), oats, soybeans, triticale, wheat (durum, spring, winter)

# Identify common wheat diseases.

Disease	Visual symptoms	Picture
Leaf rust	<ul style="list-style-type: none"> <li>• Pustules are small, round and yellowish to red and become darker with time</li> <li>• They mainly occur on the leaves and occasionally on the leaf sheaths</li> <li>• Brown rust pustules appear in random scatter distribution</li> <li>• If there are a lot of pustules, the leaves may appear orange</li> </ul>	
Powdery mildew	<ul style="list-style-type: none"> <li>• White greyish mycelium colonies on the upper leaf surface</li> <li>• Over time, the whole plant can be covered by colonies which become more grey with black spots (fruiting bodies)</li> <li>• Leaves that are infected will shrivel</li> </ul>	
Septoria leaf spot	<ul style="list-style-type: none"> <li>• Yellow flecking of the lower leaves at the start</li> <li>• Yellow, grey, white or brown blotches then appear on the plant</li> <li>• Tiny black dots (pycnidia) may appear within the lesions</li> <li>• On the leaves, the lesions create elongated blotches (up to 15 mm) that can coalesce</li> </ul>	
Spot blotch	<ul style="list-style-type: none"> <li>• 2-4 mm dark brown lesions</li> <li>• Lesions can coalesce when infection is severe</li> <li>• A chlorotic area can form around the lesions</li> </ul>	
Stripe rust	<ul style="list-style-type: none"> <li>• Elongated yellow pustules that can occur on the leaves and the head</li> <li>• The pustules appear in parallel along leaf veins</li> <li>• As the infection progresses, the pustules become dark brown</li> <li>• Can cause defoliation or shrinking of the seeds</li> </ul>	
Tan spot	<ul style="list-style-type: none"> <li>• Lesions first appear on the lower leaves and spread upward via rain-splash</li> <li>• Brown/tan-coloured lesions appear with a distinct dark centre, surrounded by a yellow halo</li> <li>• Lesions expand to form 5-13 mm oval lesions that can coalesce to form irregular lesions</li> </ul>	
Fusarium head blight	<ul style="list-style-type: none"> <li>• Causes bleaching of the spikelets</li> <li>• The grain of infected heads becomes shriveled, lightweight and chalky in appearance</li> <li>• Dark fruiting bodies and white mycelium (with tints of orange and pink) can be found on the bleached spikelets</li> </ul>	

Source: BASF

# Protect your wheat all season long.

Disease pressure is influenced by many factors including the weather conditions and your crop rotation; it can contribute to yield loss, as well as decreased grain and straw quality. Fortunately, there are many opportunities to protect your wheat against disease during the growing season. The chart below summarizes important application timing to know when to best protect your crop.



Timing	T1	T2	T3
<b>Application window</b>	The first window to apply an in-crop fungicide is at <b>herbicide</b> timing when the wheat is in its vegetative stages. Tank mix the herbicide with the fungicide when tank mixes are permitted.	The second application window is also known as the <b>flag-leaf</b> application. Time the application when the flag leaf is unrolled and the tip is about to lose its upright position.	The last opportunity to protect your wheat against leaf diseases as well as the only opportunity to protect against head diseases is at <b>fusarium head blight (FHB)</b> timing. You know you've reached this window when the heads are emerging from the boot. However, the optimal timing is from 20 to 50% flowering. <b>Click here</b> for more details on this timing.
<b>Why should I apply?</b>	Manage early-season disease.	It's the most impactful timing for disease control and yield benefits since 75% <sup>1</sup> of the yield potential is due to the light that is absorbed by the flag leaf. The greener the leaf, the better your yield will be.	Manage FHB to protect grain quality.
<b>BASF solutions</b>	Veltyma® fungicide	Veltyma fungicide	Sphaerex® fungicide
<b>Groups</b>	3, 11	3, 11	3
<b>Rates</b>	152 to 202 ml/ac (375 to 500 ml/ha)	152 to 202 ml/ac (375 to 500 ml/ha)	216 ml/ac (530 ml/ha)

<sup>1</sup> Travis D. Miller, "Growth stages of wheat: Identification and understanding improve crop management," <http://www.soilcropandmore.info/crops/Wheat/production/whtmang.htm>.

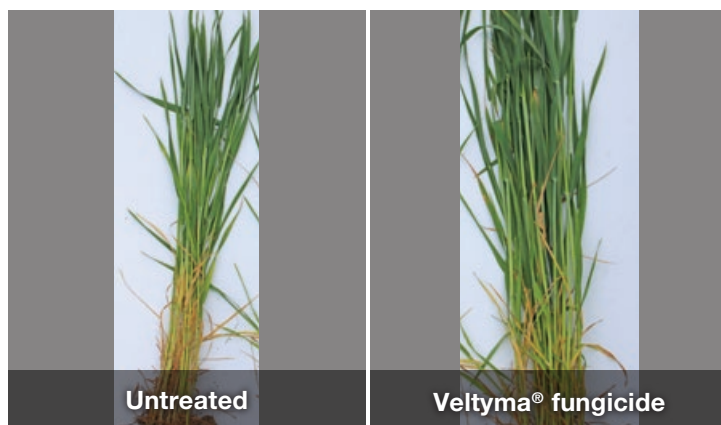


# Veltyma®

Revysol® Fungicide

An optimal fungicide for protection against a broad spectrum of foliar diseases in wheat.

- Fast-acting control with multiple modes of effective action
- Extended residual activity and enhanced performance provided by the unique binding activity of Revysol®
- Proven **Plant Health Benefits**<sup>1</sup> for increased growth efficiency, better management of minor stress and greater yield potential<sup>2</sup>
- Delivers preventative and post-infection activity



Source: BASF Small Plot Trials, Maryhill, ON, 2021

<b>Active ingredients</b>	Mefentrifluconazole – Group 3 Pyraclostrobin – Group 11
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 8.1 L jugs

## Crop staging

Stem elongation to flag leaf

## Diseases controlled<sup>3</sup>

In wheat.

Leaf rust (*Puccinia recondita*)  
Septoria leaf blotch (*Septoria tritici* or *Stagonospora nodorum*)  
Stripe rust (*Puccinia striiformis*)  
Tan spot (*Pyrenophora tritici-repentis*)

## TECH TIP

**If tank mixing Veltyma + a herbicide, remember the rule of 3 for 3 days:**

- **Nighttime temperature the day before, day of and day after application should be > 3°C**
- **For frost events or temperatures < 3°C, wait at least 48 hours before spraying**
- **Spray during warm periods (> 5°C) to avoid risk of crop injury**
- **Be cautious when adding more than two products in the tank**

## Application rates

One case treats 80 to 106 acres.

<b>Veltyma</b>	152 to 202 ml/ac (375 to 500 ml/ha)
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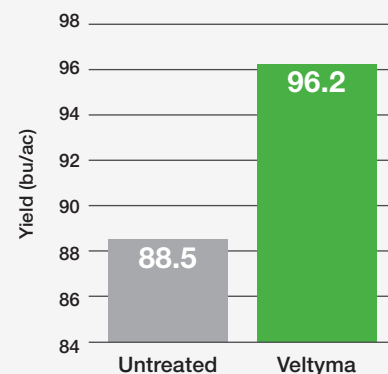
## Water volume

Ground application  
Minimum 40 L/ac (10 gal/ac)  
Aerial application  
Minimum 20 L/ac (5 gal/ac)

## Pre-harvest interval

21 days after application for wheat.

## Yield results with an application at flag-leaf



Source: Grower Applied Strip Trials, ON & QC, 2020-21, n=10

<sup>1</sup> **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin.

<sup>2</sup> All comparisons are to untreated, unless otherwise stated.

<sup>3</sup> Do not make more than two sequential applications of Veltyma fungicide targeting the same disease before alternating to a labelled fungicide containing a different mode of action.

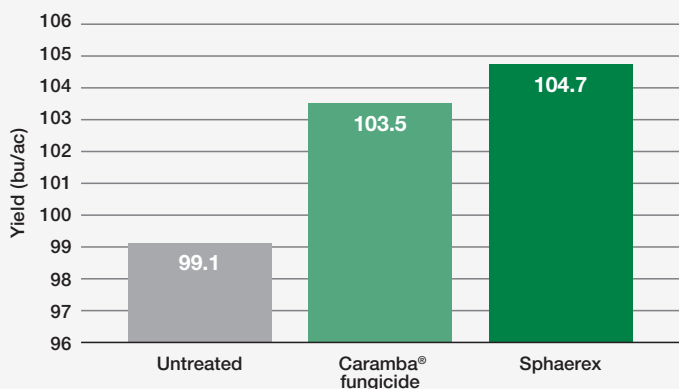
# Sphaerex®

Fungicide

## New and improved cereal head timing fungicide.

- Helps improve yield and protects quality
- Best-in-class fusarium head blight (FHB) efficacy to drive improved quality management
- Provides management of late-season leaf diseases in barley, oats, rye, triticale and wheat

Higher yield potential with Sphaerex® fungicide in cereals



Source: Grower Applied Strip Trials, ON & QC, 2021-2022, n=10

### Active ingredients

Metconazole – Group 3  
Prothioconazole – Group 3

### Formulation

Emulsifiable concentrate

### One case contains

2 x 8.65 L jugs  
Also available in 138 L shuttle

### Crop staging

**Barley:** 75% spike emergence to 3 days after full emergence

**Oats:** Early panicle to end of flowering

**Rye, triticale:** Early heading to end of flowering

**Wheat (all types):** 75% head emergence to end of flowering

### Diseases controlled

#### In barley.

Ergot (*Claviceps purpurea*)<sup>1</sup>  
Fusarium head blight (*Fusarium graminearum*)<sup>1,2</sup>  
Leaf rust (*Puccinia hordei*)  
Net blotch (*Pyrenophora teres*)  
Powdery mildew (*Erysiphe graminis*)  
Scald (*Rhynchosporium secalis*)  
Spot blotch (*Cochliobolus sativus*)<sup>1</sup>  
Stripe rust (*Puccinia striiformis*)

#### In oats.

Crown rust (*Puccinia coronata*)  
Ergot (*Claviceps purpurea*)<sup>1</sup>  
Fusarium head blight (*Fusarium graminearum*)<sup>1,3</sup>  
Stagonospora (septoria) leaf blotch and black stem (*Stagonospora avenae* syn. *Septoria avenae*)

#### In rye and triticale.

Ergot (*Claviceps purpurea*)<sup>1</sup>  
Fusarium head blight (*Fusarium graminearum*)<sup>1,4</sup>  
Leaf rust (*Puccinia recondita*)  
Powdery mildew (*Erysiphe graminis*)  
Stripe rust (*Puccinia striiformis*)

### In wheat (all types).

Ergot (*Claviceps purpurea*)<sup>1</sup>  
Fusarium head blight (*Fusarium graminearum*)<sup>1,5</sup>  
Leaf rust (*Puccinia recondita*)  
Powdery mildew (*Erysiphe graminis* f. sp. *tritici*)  
Septoria/stagonospora leaf blotch (*Septoria tritici* or *Stagonospora nodorum*)  
Spot blotch (*Cochliobolus sativus*)<sup>1</sup>  
Stem rust (*Puccinia graminis*)  
Stripe rust (*Puccinia striiformis*)  
Tan spot (*Pyrenophora tritici-repentis*)

### Application rate

One case treats 80 acres.  
One shuttle treats 640 acres.

### For fusarium head blight

<b>Sphaerex</b>	216 ml/ac (530 ml/ha)
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### Water volume

Ground application 80 L/ac (20 gal/ac)  
Aerial application 20 L/ac (5 gal/ac)

### Pre-harvest interval

30 days after application for barley, oats, rye, triticale and wheat.

<sup>1</sup> Suppression only. <sup>2</sup> Apply when 75-100% of main stem barley spikes are emerged until 3 days after. <sup>3</sup> Apply at anthesis stage or at early panicle stage when anthers are yellow to white. <sup>4</sup> Apply when at least 75% of mainstem cereal heads are fully emerged until the end of anthesis.

<sup>5</sup> Apply preventively, beginning when at least 75% of mainstem wheat heads are fully emerged until anthesis stage (Growth Stage (GS) 61-69), early heading stage when anthers are yellow to white. Optimal timing is at anthesis, or until 50% flower.

# Optimal application timing for fusarium head blight (FHB) management in wheat.

							
	75 - 100% OF HEADS EMERGED	FIRST ANTHERS VISIBLE	20% FLOWER	30% FLOWER	40% FLOWER	50% FLOWER	END OF FLOWER
DAYS <sup>1</sup>	0	+1	+2	+3	+4	+5	+6
BBCH	59	61	62	63	64	65	69
			SPRAY TIME FOR BEST RESULTS				
		APPLICATION WINDOW					

<sup>1</sup> Can vary based on environmental conditions.

## TECH TIP

*Wheat starts flowering in the centre of the head and spreads to the tips. It also has awns that can intercept spray droplets. Remember these application tips to improve your application for fusarium head blight:*

- *Ensure sprayer is thoroughly clean prior to starting*
- *Use forward and backward facing nozzles with coarse droplets*
- *Use a minimum 20 gal/ac of water to improve coverage*
- *Keep boom height approximately 50 cm above target*
- *Use slower travel speeds to optimize coverage*



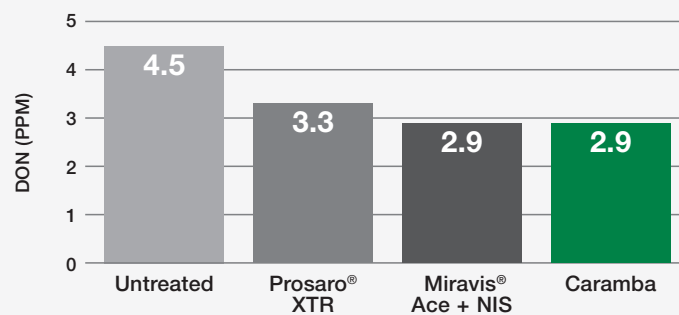
# Caramba®

Fungicide

Preventative protection against late-season leaf diseases and fusarium.

- Proven protection against late-season leaf diseases and fusarium.
- Effective control of later-season foliar diseases
- Reduces deoxynivalenol (DON) contamination to preserve grade quality

Reduction in DON contamination with Caramba® fungicide



Source: BASF Small Plot Trials, Western Canada, 2020, n=11

<b>Active ingredient</b>	Metconazole – Group 3
<b>Formulation</b>	Liquid
<b>One case contains</b>	2 x 8.1 L jugs

## Crop staging

**Oats, rye, triticale, wheat**

**(all types):** 20% flower<sup>1,2</sup>

**Barley:** Full head to 3 days after full emergence<sup>1</sup>

## Diseases controlled

### In barley.

Fusarium head blight

(*Fusarium graminearum*)<sup>3</sup>

Leaf rust (*Puccinia hordei*)

Net blotch (*Pyrenophora teres*)

Powdery mildew (*Erysiphe graminis*)

Scald (*Rhynchosporium secalis*)

Spot blotch (*Cochliobolus sativus*)<sup>3</sup>

Stripe rust (*Puccinia striiformis*)

### In oats.

Crown rust (*Puccinia coronata*)

Fusarium head blight

(*Fusarium graminearum*)<sup>3</sup>

Septoria leaf blotch (*Septoria avenae*)

### In rye.

Fusarium head blight

(*Fusarium graminearum*)<sup>3</sup>

Leaf rust (*Puccinia recondita*)

Powdery mildew (*Erysiphe graminis*)

Stripe rust (*Puccinia striiformis*)

## In wheat (all types) and triticale.

Fusarium head blight

(*Fusarium graminearum*)<sup>3,4</sup>

Leaf rust (*Puccinia recondita*)

Powdery mildew

(*Erysiphe graminis* f. sp. *tritici*)

Septoria glume blotch

(*Stagonospora nodorum*)

Septoria leaf spot (*Septoria tritici*

or *Stagonospora nodorum*)

Spot blotch (*Cochliobolus sativus*)<sup>3</sup>

Stem rust (*Puccinia graminis*)

Stripe rust (*Puccinia striiformis*)

Tan spot (*Pyrenophora tritici-repentis*)

## Application rate

One case treats 40 acres.

## For fusarium head blight

<b>Caramba</b>	405 ml/ac (1.0 L/ha)
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## Water volume

Ground application

Minimum 80 L/ac (20 gal/ac)

Aerial application

20 L/ac (5 gal/ac)

## Pre-harvest interval

30 days after application for barley, oats, rye and wheat.

<sup>1</sup> For suppression of fusarium head blight and leaf disease control at heading. For leaf disease control prior to heading, apply prior to symptoms. <sup>2</sup> This is BBCH 62. <sup>3</sup> Suppression only. <sup>4</sup> Not controlled or suppressed in triticale. Wheat only.

# Eragon® Plus

Powered by **Kixor®** Herbicide

PRE-HARVEST

NEW

The ultimate pre-harvest weed dry down in wheat, barley and triticale.

- Improved dry down of tough weeds, including Canada fleabane and common ragweed
- Quick weed dry down to help facilitate a more efficient harvest
- Provides multiple modes of action, when tank mixed with glyphosate, to manage weeds resistant to glyphosate, triazine and Group 2 herbicides



#### Active ingredient

Saflufenacil – Group 14

#### Formulation

Water-based suspension concentrate

#### One case contains

1 x 1.182 L jug of Eragon® LQ herbicide  
2 x 8.1 L jugs of Merge® adjuvant

#### Crop staging

Look for either the hard dough stage or the peduncle colour change. With the hard dough stage, cereals turn colour when maturing and sometimes the plant will be completely dry before the kernel is firm. At this stage, the kernel should be firm and when pressed with a thumbnail, the impression is held. Kernel moisture content is approximately 30%.

With the peduncle colour change, the peduncle being the upper internode of the stem that carries the spike, look for the change from green to yellow as a good indicator of maturity.

#### Application rates

##### Recommended use pattern

<b>Eragon LQ<sup>1</sup></b>	30 to 59 ml/ac (73 to 146 ml/ha)
<b>Merge</b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>2</sup></b>	1.0 L/ac (2.5 L/ha)

##### For seed production or restrictions on glyphosate use

<b>Eragon LQ</b>	59 ml/ac (146 ml/ha)
<b>Merge</b>	400 ml/ac (1.0 L/ha)

#### Water volume

Ground application 80 L/ac (20 gal/ac)

#### Pre-harvest interval

3 days after application of Eragon Plus.

7 days after application if tank mixed with glyphosate.

#### Follow crops

**In the first spring following a fall application:** Barley, canola, corn (field, sweet), oats, soybeans, triticale, wheat (durum, spring, winter)

**In the second spring following a fall application:** All crops can be grown

<sup>1</sup> Use higher rate for heavier weed pressure or if glyphosate-resistant weeds are present.

<sup>2</sup> Glyphosate is not included in the case.

CEREALS

Harvest Management

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES



## Solutions for canola.



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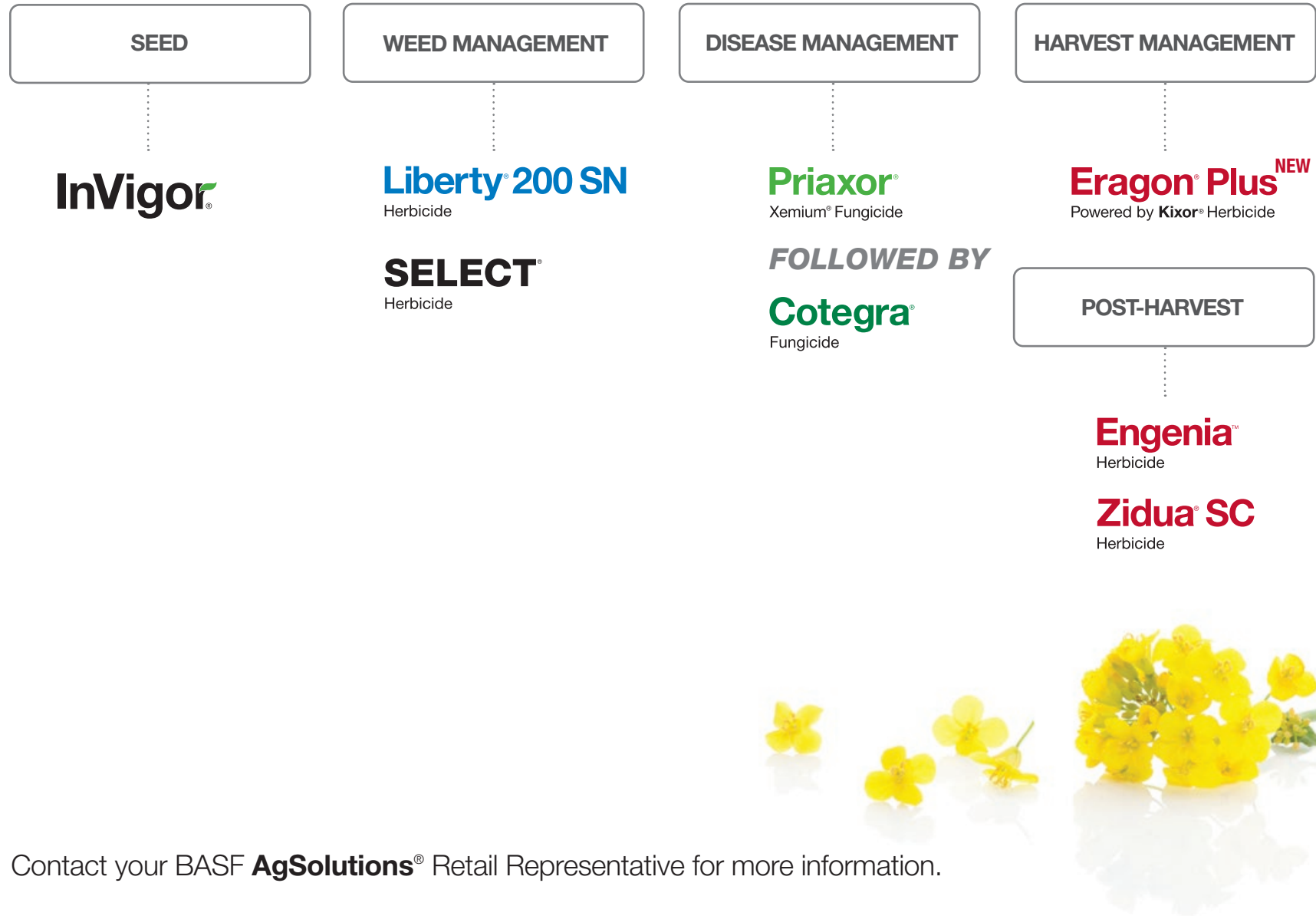
Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call **AgSolutions®** Customer Care at 1-877-371-BASF (2273) for detailed staging information.

<sup>1</sup> For hybrids tolerant to Liberty® herbicide. <sup>2</sup> Apply when 75% of seeds have changed colour.



# BASF lead recommendations.

Select the solution that's right for your operation.



Contact your BASF **AgSolutions®** Retail Representative for more information.

InVigor®


  
We create chemistry

# Canola without compromise.

The 2024 InVigor® hybrid canola lineup doesn't compromise when it comes to the performance it brings to your farm. Every InVigor hybrid this year contains our patented Pod Shatter Reduction technology, so that you can rely on flexibility at harvest in every field.

See how the BASF lineup of canola solutions takes your InVigor from seeding to harvest seamlessly.

**InVigor®**  
**L350PC**

Looking for a high-yielding hybrid in the mid to long growing zones? InVigor L350PC has it all. It's our highest yielding hybrid in our breeding trials to date, and combines standability, first-generation clubroot resistance<sup>1</sup> and our patented Pod Shatter Reduction technology. It is a great fit for growers who irrigate or when lodging is a concern.

**115.6% of the checks (InVigor L255PC and Pioneer® 45H33) in 2020 & 2021 BASF internal trials.**

**InVigor®**  
**L343PC**

InVigor L343PC is a go-to choice when you need a high-yielding second-generation clubroot-resistant hybrid<sup>2</sup>. With patented Pod Shatter Reduction, this hybrid offers improved standability and yield potential over InVigor L234PC.

**111.3% of the checks (InVigor L233P and Pioneer® 45H33) in 2019 & 2020 WCC/RRC<sup>3</sup> trials.**

**InVigor®**  
**L340PC**

InVigor L340PC has it all—high yield, Pod Shatter Reduction, first-generation clubroot resistance<sup>1</sup> and strong standability. It is a great fit for growers who irrigate or when lodging is a concern.

**108.9% of the checks (InVigor L233P and Pioneer® 45H33) in 2019 WCC/RRC<sup>3</sup> trials.**

**InVigor®**  
**L233P**

InVigor L233P has been grown on more acres than any other InVigor canola hybrid in Canada. Featuring patented Pod Shatter Reduction technology, this early-maturing, high-yielding hybrid provides the harvest flexibility you can count on.

**108.8% of the checks (InVigor 5440 and Pioneer® 45H29) in 2014 & 2015 WCC/RRC<sup>3</sup> trials.**

<sup>1</sup> To predominant clubroot pathotypes found in Canada at the time of registration. InVigor L350PC and InVigor L340PC share the same first-generation clubroot resistance profile. InVigor L343PC has this resistance profile plus it contains second-generation multigenic clubroot resistance to additional clubroot pathotypes to help combat evolving clubroot pathotypes.

<sup>2</sup> We recommend growing InVigor L343PC with second-generation clubroot resistance after two cycles of growing first-generation clubroot-resistant hybrids in clubroot-affected areas or when clubroot symptoms appear in first-generation clubroot-resistant hybrids (whichever comes first).

<sup>3</sup> Western Canadian Canola/Rapeseed Recommending Committee.

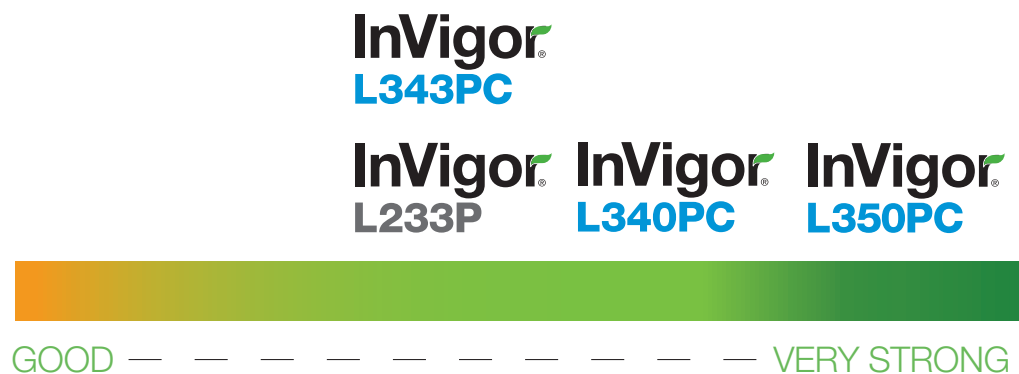
**Please note:** All growers must sign a Liberty & Trait Agreement (LTA) prior to their first purchase of InVigor hybrid canola. For more information visit [agsolutions.ca/LTA](https://agsolutions.ca/LTA).

# BASF solutions for canola.

## MATURITY



## STANDABILITY



Please note: Information displayed on this chart is based on performance ratings and data compiled from several InVigor internal trials over multiple years. Results may vary on your farm due to environmental factors and preferred management practices.



# Liberty & Trait Agreement.

The Liberty & Trait Agreement (LTA) is a key evergreen contract between BASF and its growers that governs the possession and use of certain innovative traits and technologies in LibertyLink® certified canola seed.

## LTA facts.

- All growers must sign the LTA prior to their first purchase
- Growers who sign the LTA agree to use these products according to the terms and conditions, for example:
  - Seed can only be purchased from an authorized retailer. It may not be provided or sold to another entity or person unless they have a valid LTA and are farming together
  - Certified seed can only be used to plant one commercial crop in Canada (planting or growing a crop from harvested grain, volunteer seeds, or plants is not permitted)
  - No seed, crop or grain can be used for breeding or research. These may not be used in trials without written permission from BASF
  - Growers allow transactional information to be used for administration and enforcement of the LTA. This includes monitoring and safeguarding the intellectual property of BASF

## How can you help?

- Ensure you have a signed LTA in place and follow the terms and conditions
- Contact your local authorized LibertyLink seed retailer, talk to your BASF **AgSolutions**® Retail Representative or call **AgSolutions** Customer Care at 1-877-371-BASF (2273)
- Visit [agsolutions.ca/LTA](https://agsolutions.ca/LTA)

# Seed treatment stewardship.

Treated seed must be handled properly to protect wildlife, pollinators, human health and the environment.

- Read and adhere to the product label and seed tag directions
- Wear the appropriate personal protective equipment when handling treated seed
- Always handle treated seed with care to reduce abrasion, dust generation and spillage
- Seed that has fallen or spilled out of the planter should be covered with soil or removed to avoid potential risks to birds and wildlife
- Store treated seed appropriately and keep it away from feed, food and livestock
- Never reuse empty seed bags and dispose of them properly. Seed bags can be returned to a Cleanfarms collection site. Visit [cleanfarms.ca](https://cleanfarms.ca) for details



# The dirt on clubroot.

Clubroot is a soil-borne disease in canola. Infected roots develop galls that impede water and nutrient uptake which can lead to lower yields. The best way to confirm the presence of clubroot is to dig up plants that appear to be dying or prematurely ripening. Infection leads to galls on the roots, ranging from tiny nodules to large club-shaped outgrowths. Galls are firm and white but become soft and greyish-brown as they mature and decay. Infected plants show signs of wilting, stunting and yellowing, but considerable damage can be done below ground before symptoms above ground begin to appear. The crop may also ripen prematurely and lead to shrivelled seeds.

## Clubroot management in the field.

Resting spores can last in the soil for many years. While there is no way to completely eradicate the disease, it's possible to slow down the spread and reduce the severity of infection.

### Practise good sanitation.

This helps reduce the transfer of diseases through contaminated soil and crop debris. Be sure to clean equipment prior to moving to your next field. Limit or eliminate external traffic on fields.

### Pull infected plants.

If you catch the disease early and there is a relatively small patch of visibly-affected plants, consider pulling the infected plants and either burn them or bury them in a landfill.

**Galls on infected roots**



Source: BASF, QC, 2019

**Patches of prematurely ripened canola could be a sign of clubroot**



Source: Strelkov, S., 2015. Found in clubroot disease of canola and mustard, Agri-Facts, Alberta Agriculture and Rural Development

### Use resistant hybrids.

Grow first-generation clubroot-resistant hybrids at the first sign of clubroot in the field or if clubroot is present in your farming community. We recommend seeding a second-generation clubroot hybrid after two cycles of growing first-generation clubroot-resistant hybrids in clubroot-affected areas or when clubroot symptoms appear in first-generation clubroot-resistant hybrids (whichever comes first).

### Control weeds and volunteers.

Cruciferous weeds, such as wild mustard and shepherd's-purse, can serve as hosts for clubroot in non-canola years.

### Rotate crops.

A one-in-three-year or greater rotation is recommended.

### Scout crops regularly and carefully.

Pay particular attention to field entrances and areas of high traffic. Dig up plants throughout the season to monitor for visible symptoms. Assess the field as a whole and look for patches of crop showing wilting, premature ripening or stress symptoms.

For everything clubroot, visit [clubroot.ca](http://clubroot.ca) or see our frequently asked questions at [agsolutions.ca/InVigorFAQ](http://agsolutions.ca/InVigorFAQ).

# Liberty® 200 SN

Herbicide

An excellent management tool for rotating chemistries to help keep resistance out of your fields.

- Group 10 chemistry provides broad-spectrum control of broadleaf and grassy weeds
- Flexible application timing, rates and tank mixes
- Quick, complete burndown of weeds

## TECH TIP

*To learn more about Liberty® 200 SN herbicide best management practices [click here](#).*

*All growers must sign a Liberty & Trait Agreement (LTA) prior to their first purchase of InVigor hybrid canola. For more information visit [agsolutions.ca/LTA](http://agsolutions.ca/LTA)*

<b>Active ingredient</b>	Glufosinate ammonium – Group 10
<b>Concentration</b>	200 g/L
<b>Formulation</b>	Solution
<b>One case contains</b>	2 x 10 L jugs Also available in 400 L tote

For use on:

GLYPHOSATE  
TOLERANT  
CANOLA

NO

LIBERTY  
TOLERANT  
CANOLA

YES

CONVENTIONAL  
CANOLA

NO

## Crop staging

For InVigor® hybrid canola with the LibertyLink® trait only

Apply from cotyledon to prior to bolting<sup>1</sup>

## Weeds controlled

### Broadleaf weeds

Canada fleabane<sup>2,3</sup>, Canada thistle<sup>4</sup>, Chickweed, Cleavers<sup>3,5</sup>, Cocklebur, Common ragweed<sup>2</sup>, Eastern black nightshade, Field bindweed<sup>4</sup>, Giant ragweed<sup>2,5</sup>, Green pigweed, Jimsonweed<sup>6</sup>, Kochia<sup>2,3,7</sup>, Lady's thumb, Lamb's quarters, Perennial sow thistle, Redroot pigweed, Shepherd's-purse, Stinkweed, Velvetleaf<sup>6</sup>, Volunteer canola<sup>8</sup>, Wild buckwheat, Wild mustard, Wormseed mustard

### Grasses

Barnyard grass, Bristly foxtail, Fall panicum, Giant foxtail, Green foxtail, Large crabgrass, Proso millet, Quackgrass<sup>4,9</sup>, Wild oats, Witchgrass, Yellow foxtail

## Application rates<sup>10</sup>

One case treats 20 acres. One tote treats 400 acres.

<b>Liberty 200 SN</b>	1.0 L/ac (2.5 L/ha)
<b>Ammonium sulfate (recommended)</b>	2.4 L/ac (6.0 L/ha)

## Water volume

Ground application Minimum 80 L/ac (20 gal/ac)

## Pre-harvest interval

60 days from date of treatment (or last treatment when a second application has been made).

## Follow crops

**Anytime after application** (LibertyLink varieties only): Canola, field corn, soybeans

**70 days after application:** Barley, oats, rye, triticale, wheat

**120 days after application:** All other crops

<sup>1</sup> Apply when weeds are actively growing. <sup>2</sup> Including glyphosate-resistant biotypes. <sup>3</sup> Including Group 2-resistant biotypes.

<sup>4</sup> Season long suppression. <sup>5</sup> Suppression only. <sup>6</sup> For enhanced activity, add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%). <sup>7</sup> Including Group 4-resistant biotypes. <sup>8</sup> Including conventional, Roundup Ready®, and Clearfield® biotypes. <sup>9</sup> Add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%). <sup>10</sup> See label for use rates on specific weeds and weed stages.



# SELECT®

Herbicide

Post-emergent control of the toughest grassy weeds in canola.

- Wide window of application
- Tank-mix flexibility for enhanced weed control
- No follow-crop restrictions
- Complements Liberty® 200 SN herbicide for enhanced control of grassy weeds



<b>Active ingredient</b>	Clethodim – Group 1
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	1 x 3 L jug of Select® herbicide 1 x 9 L jug of Amigo® adjuvant

## Crop staging

Apply from the cotyledon stage up to early bolting and when weeds are actively growing

## Weeds controlled

Barnyard grass  
Fall panicum  
Green foxtail  
Large crabgrass  
Persian dandelion  
Proso millet  
Quackgrass  
Smooth crabgrass  
Volunteer canary grass  
Volunteer cereals  
Volunteer corn  
Wild oats  
Witchgrass  
Yellow foxtail

## Water volume

Ground application  
Minimum 60 L/ac (15 gal/ac)

## Pre-harvest interval

60 days after application for canola.

## Application rates

One case treats 20 to 40 acres.

<b>Select<sup>1</sup></b>	77 to 154 ml/ac (190 to 380 ml/ha)
<b>Amigo adjuvant</b>	0.5 to 1.0% v/v (5 to 10 L per 1000 L spray solution)

## Tank-mix recommendation and order

When tank mixing Liberty 200 SN and Select for InVigor® canola hybrids

<b>1</b>	<b>Ammonium sulphate</b> 2.4 L/ac (6.0 L/ha)
<b>2</b>	<b>Amigo adjuvant</b> 0.5% v/v (5 L per 1000 L spray solution)
<b>3</b>	<b>Liberty 200 SN</b> 0.8 to 1.0 L/ac (2.0 to 2.5 L/ha)
<b>4</b>	<b>Select</b> 25 ml/ac (63 ml/ha)

<sup>1</sup> Consult the label for rates to control specific weeds.

# Priaxor®

Xemium® Fungicide

A more advanced fungicide that helps enhance your canola yield potential.

- Tank mixed with your canola system herbicide<sup>1</sup>, Priaxor® fungicide combines the active ingredient Xemium® with proven **Plant Health Benefits**<sup>2</sup>
- Multiple modes of action for increased performance and reduced risk of developing fungicide resistance
- Increased growth efficiency and better management of minor stress<sup>3</sup>

## Taller plants with Priaxor on canola



Source: Grower Applied Strip Trials, Rosetown, SK, 2014

<b>Active ingredients</b>	Fluxapyroxad – Group 7 Pyraclostrobin – Group 11
<b>Formulation</b>	Liquid suspension
<b>One case contains</b>	2 x 9.6 L jugs

## Crop staging

2 to 6 leaf (rosette)

In areas of high blackleg pressure, apply Priaxor earlier for best results

## Diseases controlled

Alternaria black spot  
(*Alternaria brassicae* and *A. raphani*)

Blackleg  
(*Leptosphaeria maculans*)

## Application rate

One case treats 160 acres.

<b>Priaxor</b>	120 ml/ac (300 ml/ha)
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## Water volume

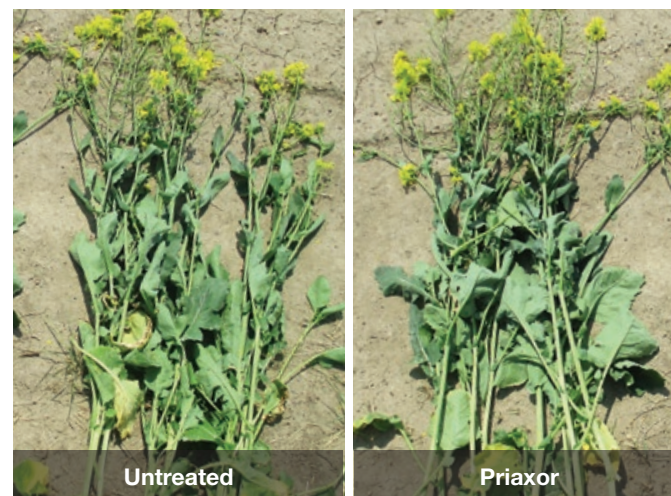
Ground application  
Minimum 40 L/ac (10 gal/ac)

Aerial application  
20 L/ac (5 gal/ac)

## Pre-harvest interval

21 days after application for canola.

## Priaxor vs. untreated



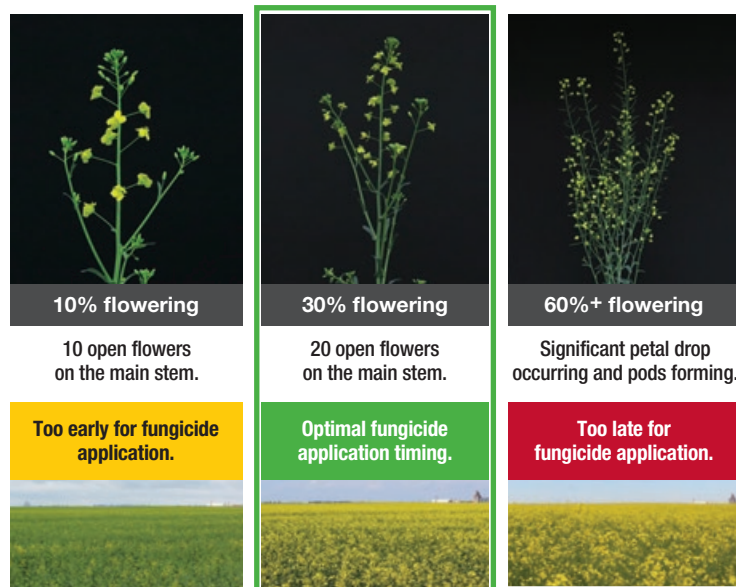
## Priaxor sprayed at the 2 to 6 leaf stage.

Source: Grower Applied Strip Trials, Western Canada, 2014

<sup>1</sup> See label for permitted herbicide tank mixes in canola. <sup>2</sup> **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin. <sup>3</sup> All comparisons are to untreated, unless otherwise stated.

## The standard for sclerotinia management.

- Combines the two leading active ingredients that target sclerotinia in a convenient liquid premix
- Vigorously tested with proven performance under the toughest disease conditions



<b>Active ingredients</b>	Boscalid – Group 7 Prothioconazole – Group 3
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 9.8 L jugs

### Crop staging

20 to 50% flowering

### Disease controlled

Sclerotinia stem rot  
(*Sclerotinia sclerotiorum*)

### Application rates

One case treats 70 to 80 acres.

<b>Cotegra® fungicide</b>	240 to 280 ml/ac (600 to 700 ml/ha) <sup>1</sup>
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### Water volume

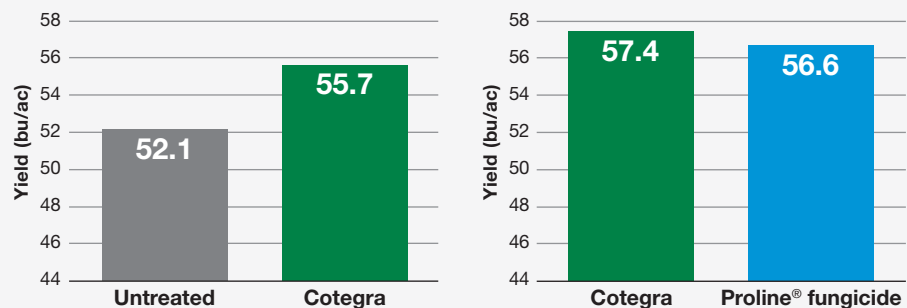
Ground application  
Minimum 80 L/ac (20 gal/ac)

Aerial application  
20 L/ac (5 gal/ac)

### Pre-harvest interval

36 days after application for canola.

The effect of Cotegra on canola yield



For all trials, Cotegra was applied at the 80 ac/case rate (240 ml/ac).  
Source: Grower Applied Strip Trials, 2016-2020, n=36 (untreated comparison); n=32 (Proline comparison)

<sup>1</sup> The recommended application rate is 240 ml/ac. The 280 ml/ac rate is only recommended for severe disease conditions.



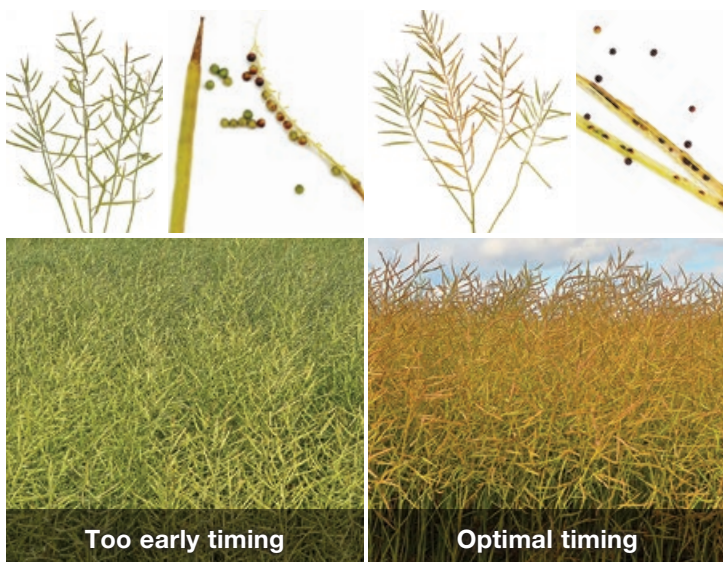
# Eragon® Plus

Powered by **Kixor®** Herbicide

PRE-HARVEST

Cut straight to an easier harvest.

- Consistent crop and weed dry down
- Improved harvest efficiency
- Cleaner fields the following spring



## Active ingredient

Saflufenacil – Group 14

## Formulation

Water-based suspension concentrate

## One case contains

1 x 1.182 L jug of Eragon® LQ herbicide  
2 x 8.1 L jugs of Merge® adjuvant

NEW

## Crop staging

Apply when the canola crop has reached 75% seed colour change on the main stem. Canola timing for application cannot be determined by pod colour. Pods must be opened to determine the amount of seed colour change. Canola flowers upwards, so the lowermost pods will contain the first mature seeds, while the upper pods will contain the last maturing seeds. Seeds on the bottom 2/3 to 3/4 of the plant will have changed from green to dark brown or black.

## Application rates

### Recommended use pattern

<b>Eragon LQ</b>	59 ml/ac (146 ml/ha)
<b>Merge adjuvant</b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>1</sup></b>	1.0 L/ac (2.5 L/ha)

## Water volume

Ground application 80 L/ac (20 gal/ac)

## Pre-harvest interval

3 days after application for canola.

## Follow crops









**In the first spring following a fall application:** Barley, canola, corn (field, sweet), oats, soybeans, triticale, wheat (durum, spring, winter)

**In the second spring following a fall application:** All crops can be grown

<sup>1</sup> Glyphosate (required) is not included in the case.

Access the Eragon staging guide at [agsolutions.ca/eragon-guide](https://agsolutions.ca/eragon-guide).

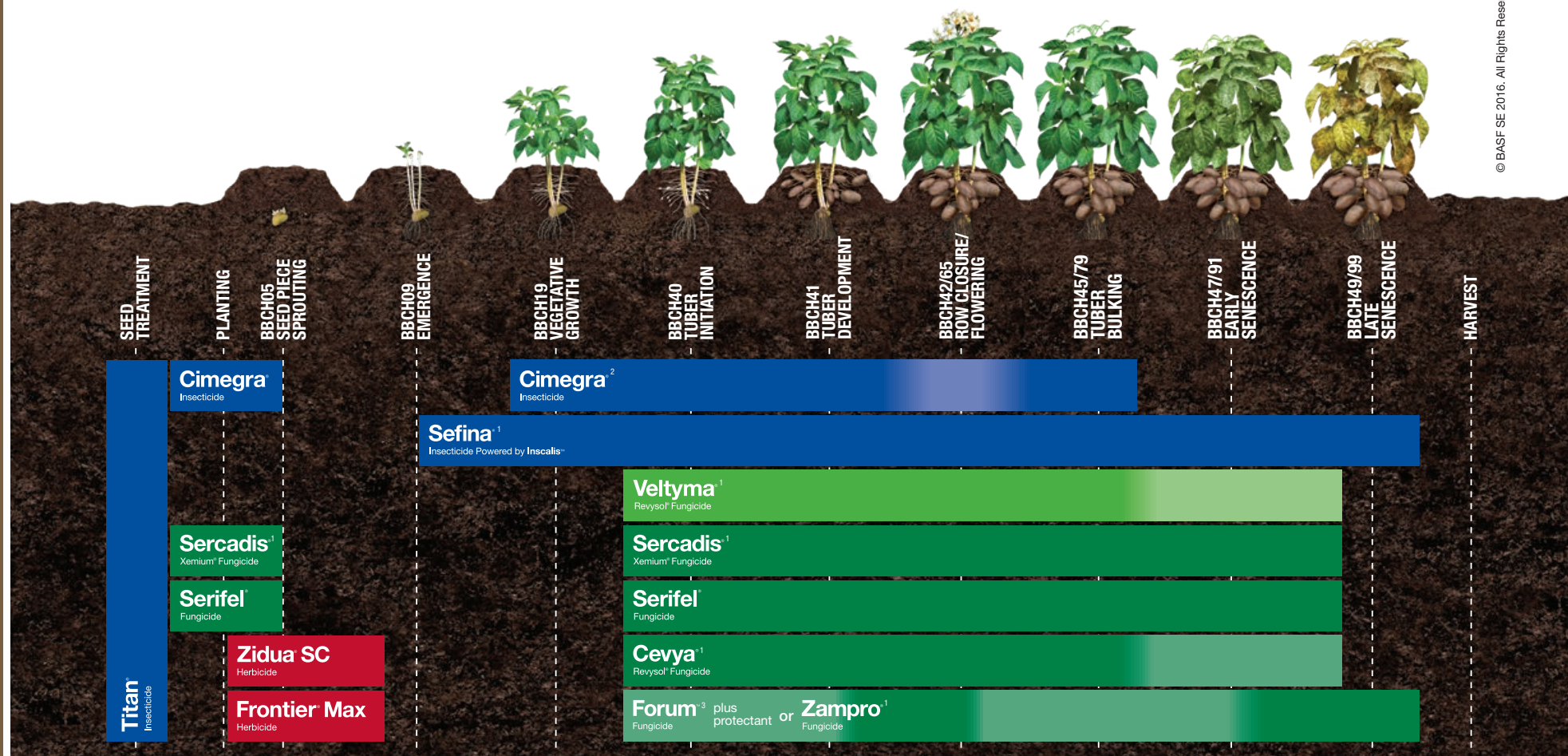
# Insect identification.

Insect name	Economic threshold	Picture
Bertha armyworm	Provided by government websites and depends on insecticide cost and canola value.	 1
Cabbage seedpod weevil	3 to 4 adults/sweep.	 2
Diamondback moth	100 to 150 larvae/m <sup>2</sup> in immature and flowering canola. 200 to 300 larvae/m <sup>2</sup> in podded canola.	 3
Flea beetles	Consider a foliar insecticide when 25% of cotyledon leaves are damaged. Threshold is typically lower under drought conditions. No current threshold for stem feeding, look for damage on small plants that likely won't survive stem feeding.	 4  5
Pollen beetle	None established in Canada. Europe advises 3 to 4 adults/plant between BBCH 51 to 56 and 7 to 8 adults/plant at BBCH 57 to 59. Damage varies depending on plant's vigour and growth stage.	 6
Root maggot	No established thresholds.	 7
Swede midge	When 20 adults have been captured from the start of trapping (pheromone traps).	 8

<sup>1</sup> Source: Manitoba Agriculture. <sup>2,7</sup> Source: Canola Council of Canada. <sup>3</sup> Source: Government of Australia, Department of Agriculture and Food. <sup>4,5</sup> Source: Agriculture and AgriFood Canada. <sup>6</sup> Source: BASF.  
<sup>8</sup> Source: Cheung, D., Swede Midge Identification & Hallett, R., Swede Midge Damage, School of Environmental Sciences, University of Guelph.



## Solutions for potatoes.



Staging graphics depicted here are for quick reference only. Refer to individual product pages and product labels on [agsolutions.ca](http://agsolutions.ca) or call AgSolutions<sup>®</sup> Customer Care at 1-877-371-BASF (2273) for detailed staging information.

Darker area reflect recommended application period for Cimegra<sup>®</sup> insecticide.

Darker areas reflect recommended application period for Veltyma<sup>®</sup> fungicide.

Darker areas reflect recommended application period.

<sup>1</sup> Do not exceed the total number of sequential applications or total number of applications per season as stated by specific product labels. <sup>2</sup> Toxic to bees. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging. When using managed bees for pollination services, DO NOT apply during the crop blooming period. <sup>3</sup> To reduce the risk of the development of fungicide resistance, tank mix Forum<sup>®</sup> fungicide with fungicides from a different Group that are effective on the target pathogen when such use is permitted. Do not apply more than three applications per season.



# BASF lead recommendations.

Select the solution that's right for your operation.

## INSECT MANAGEMENT

**Cimegra**<sup>®</sup>  
Insecticide

**Titan**<sup>®</sup>  
Insecticide

**Sefina**<sup>®</sup>  
Insecticide Powered by **Inscalis**<sup>®</sup>

## WEED MANAGEMENT

**Zidua**<sup>®</sup> SC  
Herbicide

**Frontier**<sup>®</sup> Max  
Herbicide

## DISEASE MANAGEMENT

**Veltyma**<sup>®</sup>  
Revysol<sup>®</sup> Fungicide

**Sercadis**<sup>®</sup>  
Xemium<sup>®</sup> Fungicide

**Cevya**<sup>®</sup>  
Revysol<sup>®</sup> Fungicide

**Serifel**<sup>®</sup>  
Fungicide

**Forum**<sup>™</sup>  
Fungicide



Contact your BASF **AgSolutions**<sup>®</sup> Representative for more information.

**Titan®**

Insecticide

A broad-spectrum seed-piece insecticide.

- Controls major above-ground pests, including aphids, Colorado potato beetle, flea beetle and leafhopper
- Reduces tuber damage caused by wireworms
- Easy-to-use liquid formulation



<b>Active ingredient</b>	Clothianidin – Group 4
<b>Formulation</b>	Suspension
<b>One case contains</b>	2 x 3 L jugs

**Crop treatment**

Apply as a seed-piece treatment

**Pests controlled**

Buckthorn aphid (*Aphis nasturtii*), Colorado potato beetle (*Leptinotarsa decemlineata*), foxglove aphid (*Aulacorthum solani*), green peach aphid (*Myzus persicae*), potato aphid (*Macrosiphum euphoribae*), potato flea beetle (*Epitrix cucumeris*)<sup>1</sup>, potato leafhopper (*Empoasca fabae*), wireworm (*Agriotes obscurus*, *A. lineatus*, *Limonius agonus*, *Melanotus* spp., *M. communis*)<sup>2,3</sup>

**Application rates**

<b>Aphids, Colorado potato beetle, potato flea beetle, potato leafhopper</b>	10.4 to 20.8 ml per 100 kg potato seed pieces
<b>Wireworms<sup>2</sup></b>	20.8 ml per 100 kg potato seed pieces

**Water volume**

Do not dilute with any more than 6 parts water to 1 part Titan® insecticide.

**Restricted entry interval:** 12 hours.

**Resistance management**

When using Titan as a seed-piece treatment do not apply subsequent Group 4 insecticides that growing season.

<sup>1</sup> Control of overwintered adults and suppression of second generation.

<sup>2</sup> Suppression only.

<sup>3</sup> May reduce the damage caused by other wireworm species.

# Cimegra®

Insecticide

Cimegra® insecticide provides control of wireworms in potatoes and reduces resident populations.

- Unique mode of action that works effectively on contact with wireworms in the soil
- Convenience of simplified handling<sup>1</sup>
- Broflanilide is the first compound in the newly designated IRAC Group 30 mode of action



<b>Active ingredient</b>	Broflanilide – Group 30
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 3 L jugs

### Crop treatment

Apply in-furrow spray to uniformly cover the seed pieces and surrounding soil. Do not apply Cimegra to the soil surface of a closed furrow.

### Pest controlled

Wireworms<sup>2</sup>

### Application rate

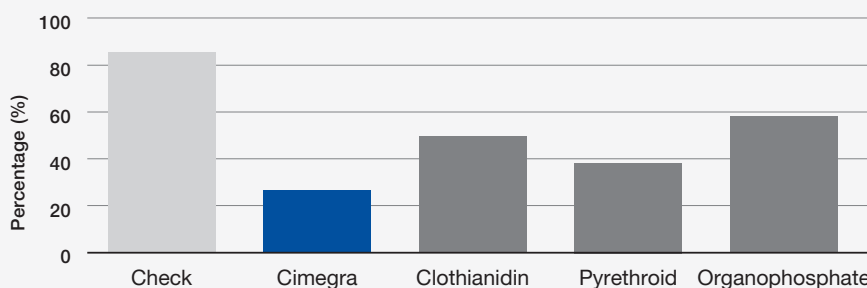
One case treats 60 acres (24 hectares).

<b>Cimegra<sup>3</sup></b>	100 ml/ac (250 ml/ha)
<b>For 90 cm (36") row spacing<sup>4</sup></b>	2.3 ml per 100 metres of row

### Water volume

Dilute Cimegra product in a minimum of 20 L of water per acre (5 gallons of water per acre). Use sufficient water to ensure thorough coverage of the seed piece and surrounding seed furrow.

Percent of unmarketable tubers by treatment



Source: BASF Small Plot Trials, PEI, 2016, n=1

<sup>1</sup> Consult the product label for safety information.

<sup>2</sup> Including *Agriotes obscurus*, *Agriotes sputator*, *Conoderus* sp., *Hypnoides bicolor*, *Limonius californicus*, *Limonius infuscatus*, *Melanotus cribulosus*, *Melanonus* sp. and *Selatosomus destructor*.

<sup>3</sup> Do not exceed 100 ml/ac (250 ml/ha).

<sup>4</sup> For different row spacing, see label for calculation.



**Cimegra®**

Insecticide

NEW

## Now registered for foliar Colorado potato beetle control.

Powered by the groundbreaking active ingredient broflanilide, Cimegra® insecticide is an innovative solution in potatoes that provides control of prevalent and difficult-to-control chewing insects. In addition to in-furrow control of wireworms, Cimegra is now registered for foliar control of Colorado potato beetles.

- Unique mode of action that delivers fast knockdown and control you can count on
- Effective resistance management tool when used in rotation with other insecticide groups
- Convenience of simplified handling for difficult to control chewing insects

For more information, contact your local BASF **AgSolutions®** Retail Representative or visit [agsolutions.ca/Cimegra](https://agsolutions.ca/Cimegra).

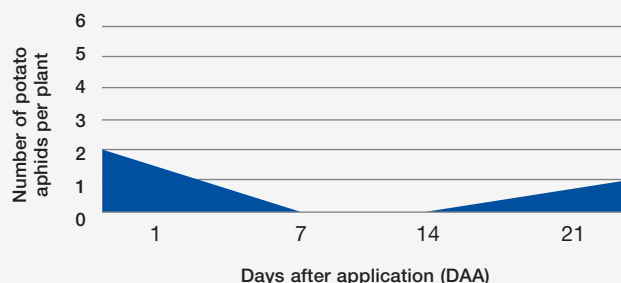


Colorado potato beetle

A lasting barrier that protects against labelled piercing and sucking insects.

- Quickly halts feeding, which reduces production losses and virus transmission
- Extended control of labelled pests
- Powered by Inscalis®, a unique mode of action that controls labelled insect pests, including those that have developed resistance
- Effective tool in an integrated pest management strategy with low impact on beneficial insects, including predatory and parasitic insects when used according to the label

**Efficacy of Sefina® insecticide on potato aphids**



Source: Grower Applied Strip Trials, NB, 2019, n=3

<b>Active ingredient</b>	Afidopyropen – Group 9D
<b>Formulation</b>	Dispersion concentrate
<b>One case contains</b>	2 x 3.24 L

## Crop staging

Apply between emergence and harvest during all life stages of the pests

## Pests controlled

Green peach aphid (*Myzus persicae*)  
 Potato aphid (*Macrosiphum euphoribae*)  
 Silverleaf whitefly (*Bemisia argentifolii*)  
 Sweet potato whitefly (*Bemisia tabaci*)

## Application rates<sup>1,2</sup>

One case treats 16 to 80 acres (6 to 32 hectares).

<b>Green peach aphid and potato aphid</b>	81 ml/ac (200 ml/ha)
<b>Silverleaf whitefly and sweet potato whitefly</b>	283 to 405 ml/ac (0.7 to 1.0 L/ha)

## Water volume

Ground application Minimum 40 to 80 L/ac (10 to 20 gal/ac)  
 Aerial application Minimum 20 L/ac (5 gal/ac)

**Rainfastness:** 1 hour. Avoid application if heavy rain is forecast.

**Restricted entry interval:** 12 hours.

**Pre-harvest interval:** 7 days after application.




## Resistance management

Do not make more than two sequential applications of Sefina insecticide before using an effective insecticide with a different mode of action.

<sup>1</sup> Allow a minimum of 7 days between applications.

<sup>2</sup> Do not apply more than 1.0 L/ac (2.5 L/ha) per year. Do not make more than 4 applications per year.

# Identify common potato insects.

Pest	Identifying features			Picture
Aphids	<b>Nymphs</b> <ul style="list-style-type: none"> <li>No bigger than a pen tip</li> <li>Smaller version of adult aphid</li> <li>Egg hatched in spring, live birth in summer</li> </ul>	<b>Adult</b> <ul style="list-style-type: none"> <li>Only a few millimetres in size</li> <li>Colour ranges from greens to yellows to red/pink depending on crop</li> <li>In summer, all aphids are female and reproduce asexually</li> <li>Females can produce both wingless and winged aphids</li> </ul>		 1
Colorado potato beetle	<b>Eggs</b> <ul style="list-style-type: none"> <li>Yellow to orange, elongated and cylindrical</li> <li>Found on the underside of leaves in masses of 25-40</li> </ul>	<b>Larvae</b> <ul style="list-style-type: none"> <li>4 instars (larvae stages) that all look similar but get progressively larger</li> <li>Larvae are orange, red to pink in colour with two rows of black spots on each side of the body</li> <li>Mature larvae drop to the ground to pupate</li> </ul>	<b>Adult</b> <ul style="list-style-type: none"> <li>Beetles are somewhat round and 10 black stripes run lengthwise on the wing covers</li> <li>Adults overwinter in the soil and emerge in the spring</li> </ul>	 2
Wireworm	<b>Eggs</b> <ul style="list-style-type: none"> <li>Hatch in the soil in spring</li> </ul>	<b>Larvae</b> <ul style="list-style-type: none"> <li>Wireworms can live in soil for 3 to 5 years</li> </ul>	<b>Adult</b> <ul style="list-style-type: none"> <li>Wireworm pupates in soil from late summer to early fall</li> <li>Click beetle overwinters in soil, emerging in spring to lay eggs</li> </ul>	 3







<sup>1, 2, 3</sup> Source: BASF.

## Insect management stewardship.

- Follow integrated pest management (IPM) principles and the economic thresholds for the insect pest
- Refer to the product label for guidance on required application buffer zones and/or vegetative filter strips to protect water, wetlands, wildlife habitats and other sensitive areas
- Follow the product label for application timing
- Avoid spraying when pollinators are present or crops and/or weeds are in bloom
- Use recommended spray pressure and nozzle selection to minimize drift
- Check the weather forecast before application and be mindful of current and changing weather conditions during application to minimize drift
- Follow resistance management recommendations on the product label



# Identify common potato diseases.

Disease	Visual symptoms	Picture
Black dot	<ul style="list-style-type: none"> <li>Black dot-infected plants display pepper-black dots on stems and leaves</li> <li>Often mistaken for verticillium wilt – verticillium-affected plants show yellowing leaves and brown discolouration in the cross-section of the roots or lower stem area</li> <li>Brown to grey-blackish discolouration on tubers</li> <li>Often confused with silver scurf, with pronounced micro-sclerotia dots on tubers</li> </ul>	
Black scurf	<ul style="list-style-type: none"> <li>A seed and soil-borne fungus</li> <li>Hard black sclerotia of irregular shape develop on the tubers (often referred to as the dirt that won't wash off)</li> <li>Can also affect sprouts before plant emergence and cause cankers on young stems resulting in uneven or weaker stands</li> <li>Long, deep sunken cankers can also form on the stems mid-season, and leaves can roll upwards and turn reddish</li> </ul>	
Brown spot	<ul style="list-style-type: none"> <li>Lesions on leaves are often mistaken for early blight, but can be differentiated because in the case of brown spot, they transform into large masses</li> <li>Elongated, superficial brown or black lesions on stems</li> <li>Small black pits form on the tuber surface</li> <li>Similar in appearance to pits caused by common scab, but usually deeper, narrower and darker</li> </ul>	
Early blight	<ul style="list-style-type: none"> <li>Dark brown concentric lesions on mature foliage</li> <li>Elongated brown and black lesions on the stems</li> <li>Eventually spreads as brown-black sunken lesions on tubers</li> </ul>	
Late blight	<ul style="list-style-type: none"> <li>Small necrotic spots surrounded with pale green border on leaves</li> <li>White mycelium on underside of leaf or on stems – visible when plants are moist</li> <li>Dark green or black water-soaked lesions on stems</li> <li>Irregular and shallow copper brown dry rot on tubers</li> </ul>	
White mold	<ul style="list-style-type: none"> <li>High humidity and dense canopies are ideal for white mold</li> <li>White cottony mycelium develop on stems and leaves, typically lower in the canopy</li> <li>Black sclerotia can form on old lesions</li> <li>Can develop on both living and dead tissue</li> </ul>	

<sup>1, 2, 3, 5</sup> Source: BASF. <sup>4</sup> Source: Howard F. Schwarz, Colorado State University, Bugwood.org. <sup>6</sup> Source: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org.

# Zidua® SC

Herbicide

Zidua® SC herbicide provides early-season residual suppression of key annual grasses and broadleaf weeds.

- Group 15 chemistry delivers residual management of tough weeds, including eastern black nightshade, lamb's quarters, redroot pigweed, waterhemp and wild oats
- Residual activity helps to stop germinating weed seedlings before weeds emerge
- Ideal tank-mix partner for pre-emergent weed control in potatoes



Source: Grower Applied Strip Trials, ON, 2020

<b>Active ingredient</b>	Pyroxasulfone – Group 15
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4.05 L jugs

## Crop staging

Pre-emergence to crop and weeds

Apply after planting and before potatoes emerge from the final hilling of the season

## Weeds suppressed<sup>1</sup>

### **Broadleaf weeds**

Cleavers<sup>2</sup>  
Common chickweed  
Eastern black nightshade<sup>2</sup>  
Kochia<sup>2</sup>  
Lamb's quarters  
Redroot pigweed  
Shepherd's-purse  
Waterhemp  
Wild buckwheat

### **Grasses**

Barnyard grass  
Downy brome  
Foxtail (green, yellow)  
Japanese brome  
Wild oats

## Application rates

One case treats 83 to 165 acres (34 to 67 hectares).

<b>Zidua SC</b>	49 to 97 ml/ac (120 to 240 ml/ha) <sup>1</sup>
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## Water volume

Ground application Minimum 40 L/ac (10 gal/ac)

**Restricted entry interval:** 12 hours.

<sup>1</sup> Early-season residual suppression.

<sup>2</sup> Including Group 2-resistant biotypes.

# Frontier<sup>®</sup> Max

Herbicide

Protect potato yields through the critical weed-free period.

- Pre-emergent control of annual grasses and key broadleaf weeds, including biotypes resistant to triazine and Group 2 herbicides
- Consistent performance in challenging weather conditions
- Residual activity for reduced weed pressure throughout crop development

## Consistent performance



Source: BASF Small Plot Trials, PEI, 2012

<sup>1</sup> Includes Group 2-resistant and triazine-resistant biotypes.

<sup>2</sup> Controlled at 390 ml/ac (963 ml/ha); lower rates provide suppression only.

<sup>3</sup> Suppression only.

<b>Active ingredient</b>	Dimethenamid-P – Group 15
<b>Formulation</b>	Emulsifiable concentrate
<b>One case contains</b>	2 x 9 L jugs

## Crop staging

Pre-emergence to crop and weeds. Apply after planting and before potatoes emerge from the final hilling of the season.

## Weeds controlled

Barnyard grass, Crabgrass (large, smooth), Eastern black nightshade<sup>1,2</sup>, Fall panicum, Foxtail (giant, green, yellow), Old witchgrass, Redroot pigweed<sup>1,2</sup>, Yellow nutsedge<sup>3</sup>

## Application rates

One case treats 46 to 59 acres (19 to 24 hectares).

Soil type	Application rates based on % organic matter		
	Organic matter < 3%	3% < Organic matter < 6%	7% < Organic matter < 10%
Coarse textured soils	305 ml/ac (756 ml/ha)	305 ml/ac (756 ml/ha)	348 ml/ac (860 ml/ha)
Medium textured soils	305 ml/ac (756 ml/ha)	348 ml/ac (860 ml/ha)	390 ml/ac (963 ml/ha)
Fine textured soils	305 ml/ac (756 ml/ha)	348 ml/ac (860 ml/ha)	390 ml/ac (963 ml/ha)

Apply at the higher rates in the table on fine textured or high organic soils and for heavier weed problems.

## Water volume

Ground application      Minimum 70 L/ac (17 gal/ac)

**Restricted entry interval:** 24 hours.

**Pre-harvest interval:** 40 days after application for potatoes.

**Resistance management:** Rotate Frontier Max or other Group 15 herbicides in a growing season (sequence) or among growing seasons, with different herbicide Groups that control the same weeds in a field. Use tank mixtures with herbicides from a different Group when such use is permitted.



**Veltyma**<sup>®</sup>Revysol<sup>®</sup> Fungicide

An optimal fungicide for protection against key foliar diseases in potatoes, including early blight, black dot and brown spot.

- Multiple modes of effective action on early blight, including enhanced performance provided by the unique binding activity of Revysol<sup>®</sup>
- Proven **Plant Health Benefits**<sup>1</sup> for increased growth efficiency, better management of minor stress and greater yield potential<sup>2</sup>
- Delivers preventative and post-infection activity
- Liquid formulation for optimized usability

#### Potential yield increase with Veltyma<sup>®</sup> fungicide



Source: Grower Applied Strip Trials, NB, 2021

<b>Active ingredients</b>	Mefentrifluconazole – Group 3 Pyraclostrobin – Group 11
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 8.1 L jugs

#### Timing

7 to 14 day application interval

#### Diseases controlled

Black dot (*Colletotrichum coccodes*)

Brown spot (*Alternaria alternata*)<sup>3</sup>

Early blight (*Alternaria solani*)<sup>4</sup>

#### Application rate

One case treats 80 acres (32 hectares).

<b>Veltyma</b>	202 ml/ac (500 ml/ha)
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#### Rainfastness

When product has dried on crop. Do not apply when heavy rain is forecast.

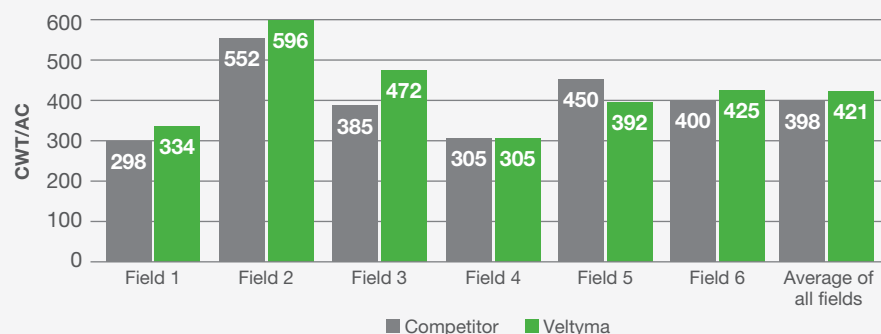
#### Restricted entry interval

12 hours.

#### Pre-harvest interval

7 days after application for potatoes.

Potato yield compared to competitor



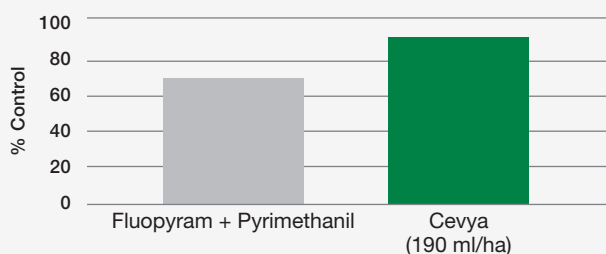
Source: Grower Applied Strip Trials, PEI, NB, ON, 2021, n=6

<sup>1</sup> Plant Health Benefits refer to products that contain the active ingredient pyraclostrobin. <sup>2</sup> All comparisons are to untreated, unless otherwise stated. <sup>3</sup> Suppression. <sup>4</sup> Includes control of Group 11-resistant biotypes.

Cevya<sup>®</sup> fungicide is powered by Revysol<sup>®</sup> to provide fast, systemic, continuous pre- and post-infection management of key diseases.

- Fast and continuous management of key diseases in potatoes, fruits and vegetables
- Preventative and post-infection management
- Unique, new binding activity to control biotypes that may have developed resistance to other Group 3, 7, 9 and 11 fungicides

**Early blight control with Cevya**



Source: BASF Small Plot Trials, MB & ON, 2016-2018, n=3

<b>Active ingredient</b>	Mefentrifluconazole – Group 3
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4 L jugs

#### Timing

7 to 14 day interval

#### Disease controlled

Early blight (*Alternaria solani*)

#### Diseases suppressed

Black dot (*Colletotrichum coccodes*)

Brown spot (*Alternaria alternata*)

#### Application rates

One case treats 80 to 107 acres (32 to 43 hectares).

#### Cevya

75 to 100 ml/ac  
(190 to 250 ml/ha)<sup>1</sup>

#### Rainfastness

1 hour.

#### Restricted entry interval

12 hours.

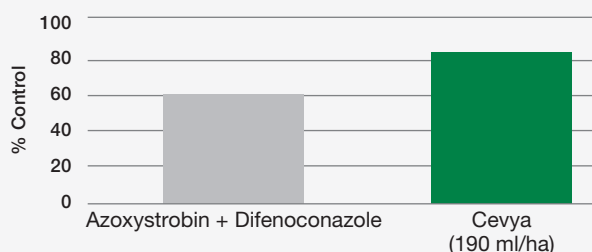
#### Pre-harvest interval

7 days after application for potatoes.

#### Resistance management

Cevya is an excellent resistance management tool to include in an IPM program. It can be used in combination or rotation with other chemistries to prevent the development of resistant strains. To limit the potential for development of resistance, rotate the use of Cevya or other Group 3 fungicides with different Groups that control the same pathogens.

**Early blight control with Cevya**



Source: BASF Small Plot Trials, MB & ON, 2016-2018, n=3

<sup>1</sup> Do not apply more than 455 ml/ac (1.125 L/ha) per year.

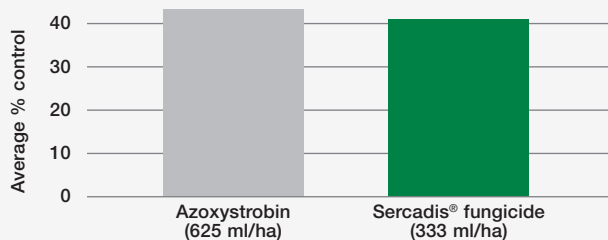
# Sercadis®

Xemium® Fungicide

Consistent, continuous control of key diseases.

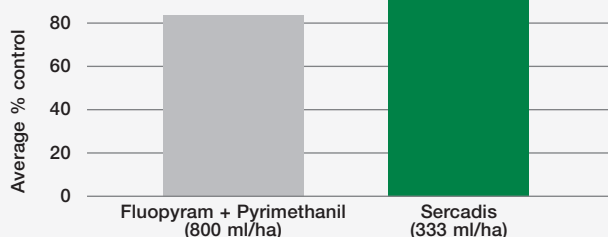
- Control of early blight, white mold and rhizoctonia canker
- Timing and tank-mix flexibility to adapt to the season's needs
- Highly systemic activity helps protect new growth

## Rhizoctonia/black scurf control



Source: BASF Small Plot Trials, 2010, n=2

## White mold control



Source: BASF Small Plot Trials, Oregon, USA, 2010, n=1

<b>Active ingredient</b>	Fluxapyroxad – Group 7
<b>Formulation</b>	Suspension
<b>One case contains</b>	2 x 1.35 L jugs

## Crop staging

<b>For rhizoctonia canker (soil-borne)</b>	At planting (in-furrow spray)
<b>For early blight</b>	Preventatively, from tuber initiation to row close as part of a regular early-blight control program
<b>For white mold</b>	Begin applications at flowering when there is a risk of disease

## Diseases controlled

**In-furrow applications:** Rhizoctonia canker (*Rhizoctonia* spp.)

**Foliar applications:** Early blight (*Alternaria solani*), white mold (*Sclerotinia sclerotiorum*)

## Application rates

One case treats 20 to 40 acres (8 to 16 hectares).

## In-furrow applications

<b>Rhizoctonia canker</b>	135 ml/ac (333 ml/ha) 36" rows: 30 ml per 1000 m of row
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## Foliar applications

<b>Early blight</b>	67 to 135 ml/ac (167 to 333 ml/ha)
<b>White mold</b>	135 ml/ac (333 ml/ha)

Using a non-ionic surfactant at 0.125% v/v is recommended for foliar applications.

Refer to the label for more information on product rates and row spacing.

## Rainfastness

1 hour.

## Restricted entry interval

12 hours.

## Pre-harvest interval

7 days after application for potatoes.

## Resistance management

May be tank mixed with a non-Group 7 fungicide when such use is permitted. Do not apply more than two sequential applications of Sercadis before alternating to a fungicide with a different mode of action that controls the same pathogens.



# Serifel®

Fungicide

An innovative biological fungicide with multiple modes of action that forms a shield of protection on plants' surfaces to protect against disease.

- Highly effective biological fungicide that targets early blight and rhizoctonia in potatoes
- Complements chemistry-based solutions, with multiple unique modes of action, to form a protective shield against disease
- Zero PHI, 4-hour REI and 36-month shelf life offer new flexibility and choice to address crop production challenges
- Sets the standard for purity, performance and quality



<b>Active ingredient</b>	<i>Bacillus amyloliquefaciens</i> strain MBI 600 – Group BM02
<b>Formulation</b>	Wettable powder
<b>One case contains</b>	4 x 2 kg jugs

## Timing

7 to 10 day interval

## Diseases suppressed

Early blight (*Alternaria solani*)

Rhizoctonia stem canker/black scurf (*Rhizoctonia solani*)<sup>1,2</sup>

## Application rates

One case treats 40 to 80 acres (16 to 32 hectares).

<b>Serifel® fungicide</b>	0.1 to 0.2 kg/ac (0.25 to 0.5 kg/ha)
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## Rainfastness

Avoid application if heavy rain is forecast.

## Restricted entry interval

4 hours.

## Pre-harvest interval

0 days after application for potatoes.

## Resistance management

Serifel is an excellent resistance management tool to include in an IPM program. It can be used in combination or rotation with other chemistries to prevent the development of resistant strains.

## TECH TIP

[Click here](#) to see more on integrated pest management strategies.

<sup>1</sup> Partial suppression.

<sup>2</sup> In-furrow. See label for application instructions.

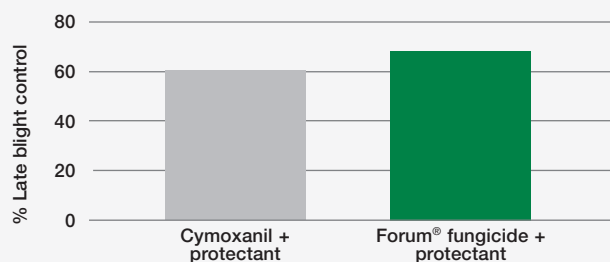
# Forum™

Fungicide

Excellent control of late blight in potatoes, both in the field and into storage.

- Highly systemic fungicide for control of late blight in potatoes
- Antisporulant activity controls spores and stops the spread of disease
- Easy-to-use liquid formulation

Curative late blight control



Source: BASF Small Plot Trials, average of 7 trials with ratings taken 1 to 4 months after harvest, 2001-2006

<b>Active ingredient</b>	Dimethomorph – Group 40
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4.5 L jugs

## Timing

5 to 7 day interval under high disease pressure

7 to 10 day interval under low disease pressure

## Diseases controlled<sup>1</sup>

Late blight (*Phytophthora infestans*)

Tuber blight in storage (*Phytophthora infestans*)<sup>2</sup>

## Application rate

One case treats 50 acres (20 hectares).

<b>Forum</b>	182 ml/ac (450 ml/ha)
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**Rainfastness:** 2 hours.

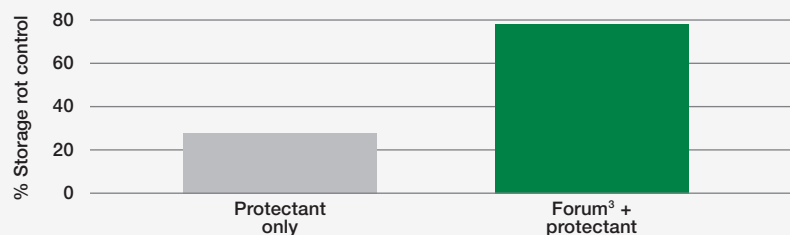
**Restricted entry interval:** 12 hours.

**Pre-harvest interval:** 4 days after application for potatoes.

## Resistance management

In order to reduce the risk of developing fungicide resistance, Forum fungicide should be used in a tank mix or in rotation with a fungicide from a different FRAC Group labelled for control of late blight when such use is permitted.

Control of tuber blight in storage with Forum



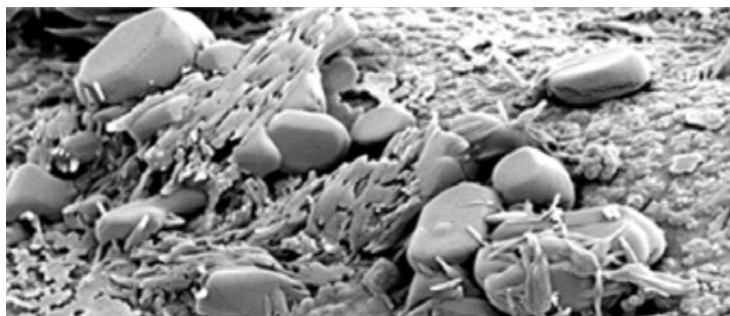
Source: BASF Small Plot Trials, average of 7 trials with ratings taken 1 to 4 months after harvest, 2001-2006

<sup>1</sup> To reduce the risk of the development of fungicide resistance, tank mix Forum fungicide with fungicides from a different Group effective on the target pathogen when such use is permitted. Do not apply more than three applications per season. <sup>2</sup> Suppression only. <sup>3</sup> Applied pre-harvest.

Powerful control of late blight that recharges with moisture.

- Multiple modes of action to control late blight
- Antisporulant, protectant and systemic disease control prevents initial infection and stops disease spread
- Recharges with moisture

## Zampro® fungicide on leaf



Ametoctradin is tightly bound to the waxy cuticle and rapidly absorbed.  
Magnification: 3.0 µm

<b>Active ingredients</b>	Dimethomorph – Group 40 Ametoctradin – Group 45
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	4 x 4.14 L jugs

## Timing

Apply preventatively (prior to disease development) on a 5 to 10 day interval  
During periods of high disease pressure, use a higher rate and shorter interval

## Diseases controlled

Late blight (*Phytophthora infestans*)  
Tuber blight (*Phytophthora infestans*)<sup>1</sup>

## Application rates

One case treats 41 to 51 acres (17 to 21 hectares).

<b>Late blight</b>	324 to 404 ml/ac (0.8 to 1.0 L/ha) <sup>2</sup>
<b>Tuber blight</b>	404 ml/ac (1.0 L/ha)

## Rainfastness

2 hours.

## Restricted entry interval

12 hours.

## Pre-harvest interval

4 days after application for potatoes.

## Resistance management

Do not make more than two sequential applications before alternating to another effective fungicide with a different mode of action.

<sup>1</sup> When used in accordance to the label recommendations, Zampro also reduces tuber blight when applied immediately prior to or after vine kill.

<sup>2</sup> Addition of spreading/penetrating adjuvants are recommended.



# Don't get caught up in weeds. Stay ahead of them.

Have you thought about post-harvest solutions? Fall is a busy time, but it's also the perfect time to control perennial and winter annual weeds.

## Challenges

Perennial and winter annual weeds including annual bluegrass, Canada fleabane, chickweed, dandelion, field bindweed, scentless chamomile and sow thistle present different challenges:

- Perennials are tough to control once they've established deep, extensive root systems
- Winter annuals germinate in the fall and continue to grow through early winter, bringing them back the following spring

## Benefits

The benefits of using a post-harvest herbicide can really make a difference in your field:

- Cleaner fields in the spring
- Faster soil warming
- Faster plant growth due to a warmer and drier seedbed
- Less disease and insect pressure
- Excellent weed control



Sow-thistle



Field bindweed



Chickweed



Annual bluegrass



Dandelion



Canada fleabane

# Distinct®

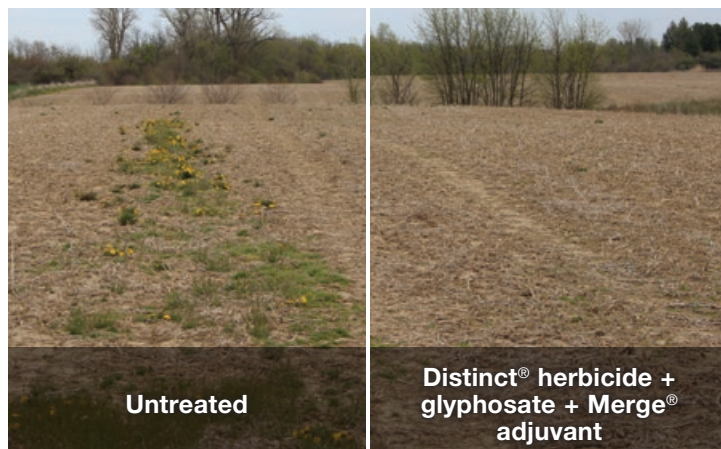
Herbicide

POST-HARVEST

Complements glyphosate for superior post-harvest weed control.

- Multiple modes of action with glyphosate to control resistant biotypes post-harvest
- Helps keep fields cleaner to set them up for success the next season
- Excellent follow-crop flexibility that includes canola, cereals, corn and soybeans

**Weed control in spring, following previous September application**



Source: Grower Applied Strip Trials, St-Joachim, ON, May 2020

<b>Active ingredients</b>	Dicamba – Group 4 Diflufenzopyr – Group 19
<b>Formulation</b>	Wettable granules
<b>One case contains</b>	2 x 2.32 kg jugs

## Staging

Prior to first significant frost

## Weeds controlled<sup>1</sup>

Biennial wormwood<sup>2</sup>  
Canada thistle<sup>3</sup>  
Common cocklebur  
Common ragweed  
Dandelion<sup>3</sup>  
Lady's thumb  
Lamb's quarters  
Perennial sow thistle<sup>4,5</sup>  
Redroot pigweed  
Velvetleaf  
Volunteer canola<sup>6</sup>  
Waterhemp  
Wild buckwheat

<sup>1</sup> Tank mixed with glyphosate at 115 g/ac.

<sup>2</sup> Apply at 2 to 8 leaf.

<sup>3</sup> Top growth.

<sup>4</sup> Suppression only.

<sup>5</sup> Apply at 2 to 10 leaf.

<sup>6</sup> Apply at cotyledon to 4 leaf.

<sup>7</sup> Glyphosate and Merge adjuvant (required for optimum activity) are not included in the case.

## Application rate

One case treats 40 acres.

<b>Distinct</b>	115 g/ac (285 g/ha)
<b>Merge adjuvant<sup>7</sup></b>	400 ml/ac (1.0 L/ha)
<b>Glyphosate<sup>7</sup></b>	See label for rate

## Water volume

Ground application only  
40 to 80 L/ac (10 to 20 gal/ac)

## TECH TIP

*Apply the preferred fall herbicide, Distinct, if you are not planting winter wheat.*

- *Select the correct rate of glyphosate based on weed species and size to mix with Distinct; it can take a few weeks to see symptomology in cooler temperatures.*
- *If a frost event occurs, wait 24 to 48 hours before applying and add Merge (400 ml/ac). Weeds such as perennial sow thistle are more effectively controlled AFTER the first frost, which triggers the movement of nutrients to the roots.*

POST HARVEST

Weed Management

CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES

**Engenia™**

Herbicide

POST-HARVEST

An advanced dicamba formulation with lower volatility properties.

- More highly concentrated liquid formulation for easier handling and a lower use rate
- Effective resistance management tool for resistant biotypes (including biotypes resistant to Group 2, Group 14, triazine and glyphosate)



<b>Active ingredient</b>	Dicamba – Group 4
<b>Formulation</b>	Solution
<b>One case contains</b>	2 x 8.09 L jugs Also available in 121.2 L shuttle

**Staging**

Apply to actively growing weeds<sup>1</sup>

**Weeds controlled**

Canada fleabane  
Canada thistle  
Cleavers  
Corn spurry  
Cow cockle  
Curled dock<sup>2</sup>  
English daisy  
Field bindweed  
Goldenrod  
Green smartweed  
Lady's thumb  
Lamb's quarters  
Perennial sow thistle  
Ragweed (common)  
Redroot pigweed  
Tansy ragwort  
Velvetleaf  
Wild buckwheat  
Wild mustard

**Application rate**

One case treats 20 acres.

One shuttle treats 150 acres.

<b>Engenia® herbicide<sup>3</sup></b>	808 ml/ac (2.0 L/ha)
<b>Glyphosate<sup>4</sup></b>	See label for rate

**Water volume**

Ground application

45 to 90 L/ac (12 to 24 gal/ac)

Use a higher water volume to ensure adequate coverage.

<sup>1</sup> Refer to product labels for specific weed staging.

<sup>2</sup> Top growth only.

<sup>3</sup> See label for a complete list of additional available tank mixes and their rates. Tank-mix options are not included in the case.

<sup>4</sup> Glyphosate is not included in the case. Only use glyphosate products registered for summerfallow and stubble, and refer to glyphosate label for adjuvant recommendations. Do not tank mix Engenia with glyphosate products where glyphosate is present as an ammonium salt.



# Zidua® SC

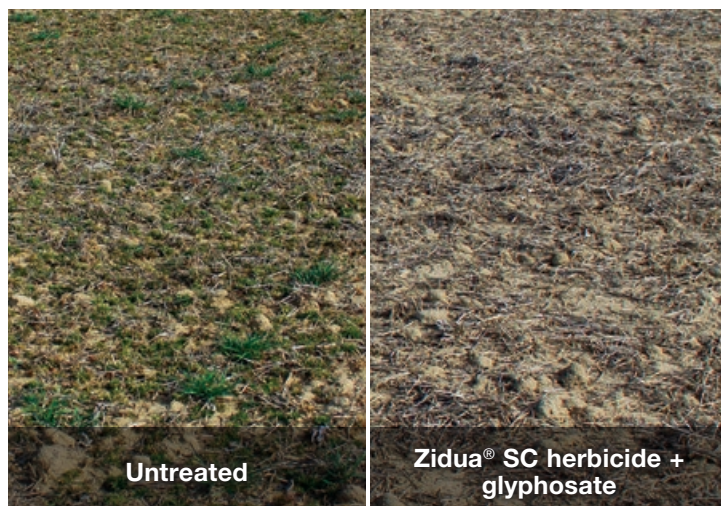
Herbicide

POST-HARVEST

## Residual control on annual bluegrass.

- Group 15 chemistry delivers control on annual bluegrass
- Residual activity on late-season germinating seedlings
- Convenient liquid formulation

### Bluegrass control in the spring following a fall application



Source: Grower Applied Strip Trials, Thamesville ON, 2021

<b>Active ingredient</b>	Pyroxasulfone – Group 15
<b>Formulation</b>	Suspension concentrate
<b>One case contains</b>	2 x 4.05 L jugs

### Crop staging

Post-harvest

### Weeds controlled<sup>1</sup>

#### *Broadleaf weeds*

Cleavers  
Common chickweed  
Eastern black nightshade  
Kochia  
Lamb's quarters  
Redroot pigweed  
Shepherd's-purse  
Waterhemp  
Wild buckwheat

#### *Grasses*

Annual bluegrass  
Barnyard grass  
Downy brome  
Foxtail (green, yellow)  
Japanese brome  
Wild oats

### Application rate

One case treats 83 acres.

<b>Zidua SC</b>	97 ml/ac (240 ml/ha)
<b>Glyphosate<sup>2</sup></b>	See label for rate

### Water volume

Ground application  
Minimum 40 L/ac (10 gal/ac)

### TECH TIP

*Annual bluegrass emerges both in the spring and the fall. Fall is a great time to apply Zidua SC to provide short-term residual activity on annual bluegrass and set up your field for a cleaner start the following spring.*

<sup>1</sup> Refer to product labels for specific weed staging.

<sup>2</sup> Glyphosate is not included in the case. Only use glyphosate products registered for post-harvest use.



CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES

# Resources are ready for you. (And your crops.)

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## Other Crops

Dry bean solutions  
Eragon® Plus herbicide on dry beans

Priaxor® fungicide on alfalfa

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## Agronomic Support Material

Identifying corn stages  
Identifying soybean stages  
Integrated pest management  
Spray your best with Liberty® 200 SN herbicide  
Spray system hygiene  
Temperature inversions  
Managing waterhemp

Problem weeds  
Tar spot  
Modes of action  
Product details  
Crop rotation  
WAMLEGS  
Bulk packaging

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## BASF Ag Rewards

BASF Ag Rewards



# Dry bean solutions you can depend on.

Dry beans are a high value crop that come with production challenges such as yield loss from weeds and diseases. That's why BASF offers a lineup of solutions to help manage these issues.

## Become familiar with all of your dry bean options.

Information presented is for quick reference only. Always refer to product label.

Herbicide <sup>1</sup>	Timing	Rate	Tips	Dry bean classes
Frontier <sup>®</sup> Max	PPI	350 to 390 ml/ac	Can incorporate up to 7 days after application. Strong on nightshade (use the high rate if nightshade is present).	<i>Phaseolus vulgaris</i>
Prowl <sup>®</sup> H2O	PPI	960 ml/ac	Good on sandy soil. Incorporate as part of a tank mix.	<i>Phaseolus vulgaris</i>
Pursuit <sup>®</sup>	PPI, PRE	126 ml/ac	For broad-spectrum control of grasses and broadleaf weeds, apply PPI as part of a tank mix.	<i>Phaseolus vulgaris</i> and adzuki beans
Basagran <sup>®</sup> Forte	POST	700 to 900 ml/ac	Use the high rate if the weeds have more than four leaves. Apply after the 1 <sup>st</sup> trifoliolate until the 3 <sup>rd</sup> trifoliolate. Spray in the middle of the day on small, actively growing weeds using a minimum of 20 gal/ac of water.	All except adzuki beans
Poast <sup>®</sup> Ultra	POST	445 ml/ac	Strong on grasses.	All

PPI = pre-plant incorporated   PRE = pre-emergence   POST = post-emergence



### TECH TIP

*For complete weed control in your dry beans, apply a pre-plant incorporated tank mix of Frontier Max + Prowl H2O + Pursuit.<sup>2</sup> In addition to three modes of effective action on broadleaf weeds and grasses, this tank mix will provide extended residual weed control.*

Fungicide	Disease	Timing	Rate	Tips	Dry bean classes
Priaxor®	Anthrachnose Powdery mildew Rust	Beginning of flower or the onset of symptoms.	120 ml/ac	Use 180 ml/ac for white mold suppression. <sup>3</sup>	All
Cotegra®	White mold <sup>4</sup>	20-50% flowering and again 7-14 days after the first application if disease persists or weather conditions are favourable for disease development.	400 ml/ac	Can be applied twice per season. Rotate to a fungicide with a mode of action other than a Group 3 or 7 before making a second application of Cotegra.	All

## TECH TIP

*Priaxor can be applied in a tank mix with Cotegra at the beginning of flowering as the 1st fungicide pass.*

**NOTE:** Always check with your buyer or processor prior to applying a harvest aid in dry beans to avoid limiting market access.

Harvest aid <sup>5</sup>	Timing	Rate	Tips	Dry bean classes
Eragon® Plus <sup>6</sup>	Apply when stems are green to brown, pods are mature (yellow, brown) and 80-90% of leaves have dropped.	59 ml/ac of Eragon LQ + 400 ml/ac of Merge® adjuvant	Spray in the middle of a sunny day with a higher water volume. Avoid spraying on overcast days or at dawn and dusk.	Check with your grain buyer.
Ignite® <sup>7</sup>	Apply when approximately 50-75% of the bean pods have naturally changed colour from green to yellow or brown.	1.2 L/ac	Use when lamb's quarters are the predominant weed.	

## TECH TIP

Eragon Plus or Ignite?	Activity on grasses?	Surfactant required?	Use on seed dry bean?	Use on soybean?	Spray on sunny days?	Pre-harvest interval?
Eragon Plus	No	Yes	Yes	Yes	Yes	2 days
Ignite	Yes	No	No	No	Yes	9 days

<sup>1</sup> Dry common bean varieties may vary in tolerance to herbicides. Since not all dry common bean varieties have been tested for tolerance to the listed herbicides, first use of any of the listed herbicides should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your seed supplier for information on the tolerance of specific varieties of dry common beans to the listed herbicides. <sup>2</sup> Make sure all components of the tank mix can be applied to your specific dry bean variety. <sup>3</sup> Use Priaxor for white mold suppression on faba bean only. <sup>4</sup> Suppression only. <sup>5</sup> Check with your grain buyer before applying. <sup>6</sup> When tank mixing with glyphosate, consult the glyphosate label or talk to your grain buyer for information regarding use on specific varieties of dry beans. <sup>7</sup> Do not apply to dry beans grown for seed.

# Is your dry bean field ready for Eragon Plus herbicide?

## Application timing for Eragon® Plus herbicide.<sup>1</sup>

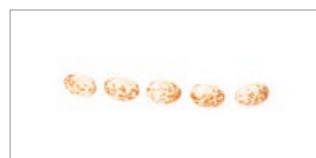
From a field perspective, the timing for individual dry bean varieties looks similar. Please look to the field images here for a general comparison of optimal and too early timing.

**NOTE: Always check with your buyer or processor prior to applying a harvest aid in dry beans to avoid limiting market access.**



### Too early for application

No pods have turned brown and green pods are found all through the canopy. Application at this stage may cause a reduction in seed size and have a negative effect on yield and quality.



### Optimal timing

Approximately 90% of the pods will have a colour change from green to yellow and/or light brown. 80% to 90% of the leaves will have dropped. The stems are green to brown in colour.

#### TECH TIP

**Optimize your coverage.**

1. Use 20 gal/ac of water.
2. Avoid spraying when dew is present, on an overcast day or before a cold front; apply during midday for a faster burndown.
3. It's better to apply too late than too early; a later application can reach growing points previously covered by leaves to mitigate regrowth.

<sup>1</sup> When tank mixed with glyphosate, consult the glyphosate label or talk to your grain buyer for information regarding use on specific varieties of dry beans.

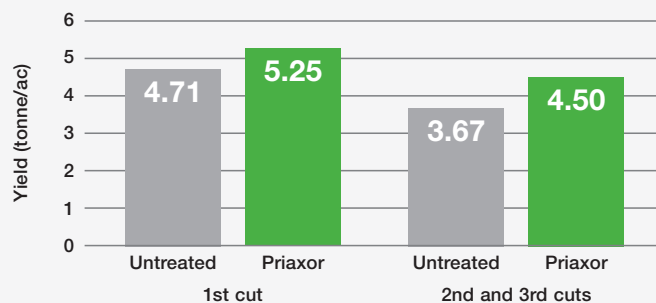
Learn more about herbicide timing for different varieties of dry beans in the staging guide at [agsolutions.ca/eragon-guide](https://agsolutions.ca/eragon-guide).



Provides proven disease control to increase yield and quality potential in alfalfa.

- First cut application resulted in improved disease control and an increase in yield due to increased leaf retention at the bottom of the plant<sup>1</sup>
- Second and third cut applications resulted in improved disease control and increased yield potential and protein levels for higher quality<sup>1</sup>

Increased alfalfa yield potential with Priaxor<sup>®</sup> fungicide



Source: Grower Applied Strip Trials, ON & QC, 2017-2019, 1st, 2nd & 3rd cuts had 8 and 13 observations respectively

**Active ingredients** Pyraclostrobin – Group 11  
Fluxapyroxad – Group 7

**Formulation** Liquid suspension

**One case contains** 2 x 9.6 L jugs

### Crop staging

4 to 8 inches in height. For best results, harvest a minimum of 21 days after Priaxor application.<sup>2</sup>

### Disease controlled

Common leaf spot  
(*Pseudopeziza medicaginis*)

### Disease suppressed

Blossom blight  
(*Sclerotinia sclerotiorum*)<sup>3</sup>

### Application rate

One case treats 160 acres.

<b>Priaxor</b>	120 ml/ac (300 ml/ha) <sup>3</sup>
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### Pre-harvest interval

14 days

### TECH TIP

**Target 4- to 8-inch tall alfalfa. Therefore, if targeting 2nd or 3rd cut, the alfalfa regrowth is at the ideal timing roughly 7 days after the previous cut. For best results, apply at least 21 days prior to harvest.**

### Better and faster regrowth 21 days after treatment



Source: Grower Applied Strip Trials, QC, 2017

### Increased leaf retention



Source: Grower Applied Strip Trials, ON, 2018

<sup>1</sup> All comparisons are to untreated, unless otherwise stated. <sup>2</sup> For alfalfa not for seed production, a maximum of two applications per season is permitted. <sup>3</sup> Apply Priaxor at the increased rate of 180 ml/ac for suppression of blossom blight.

# Identifying corn stages.

## 1. Leaf-over method

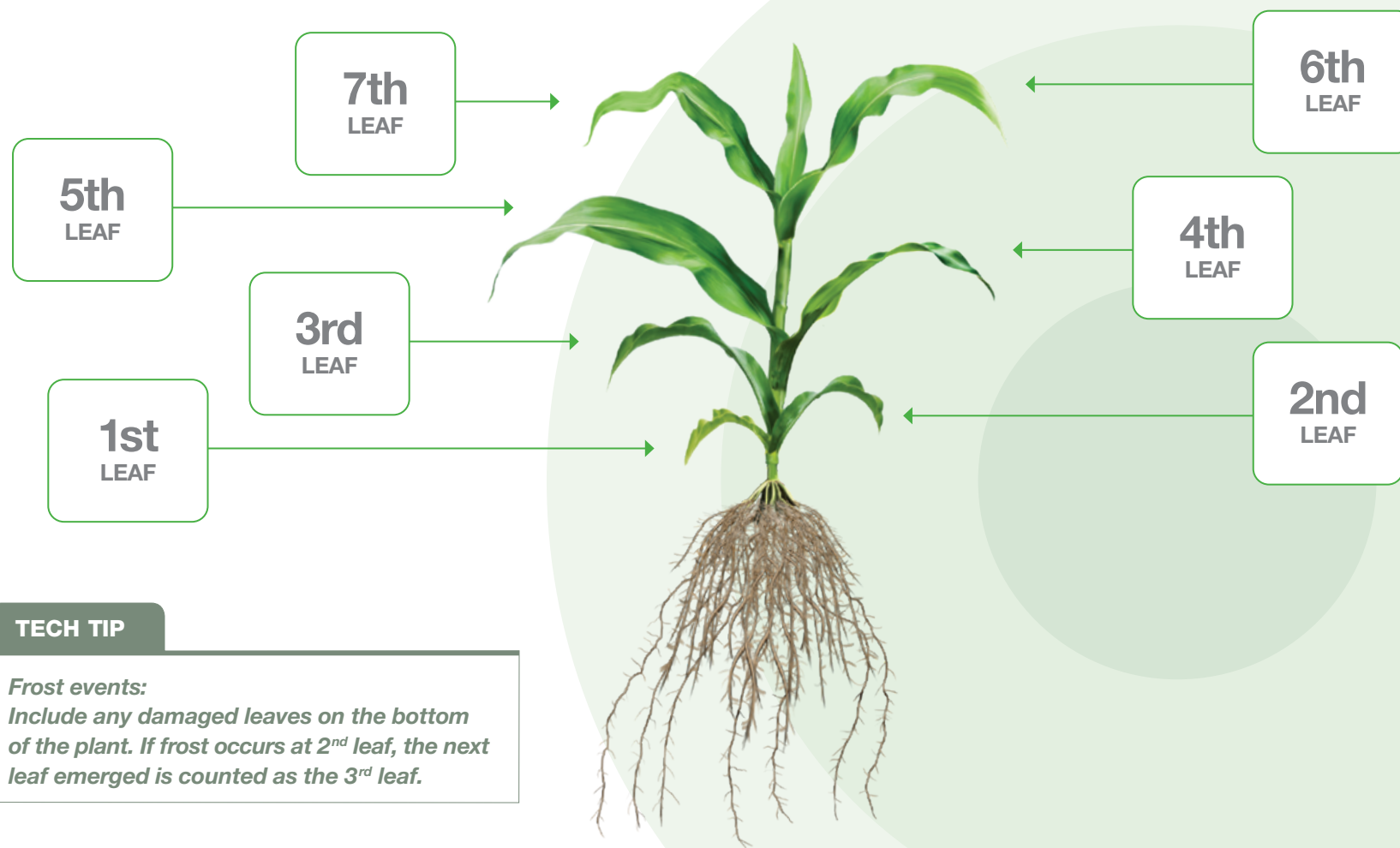
Count the number of leaves that hang over or become horizontal. Most herbicide labels in Canada use the leaf-over method to articulate staging. There are seven leaves hanging over in the image below, so it would be the 7 leaf stage.

## 2. Leaf-collar method

Count all visible leaf collars on the plant. The leaf-collar method is used primarily in the United States to identify the vegetative (V) stage of corn. There are six leaf collars in the image below, so it would be at the V6 stage.

## 3. Leaf-tip method

Count the number of leaf tips. In the plant below, there are eight leaf tips.



# Identifying soybean stages.

## R1: Beginning bloom.

The 1<sup>st</sup> open flower appears on any main stem node.

## R2: Full bloom.

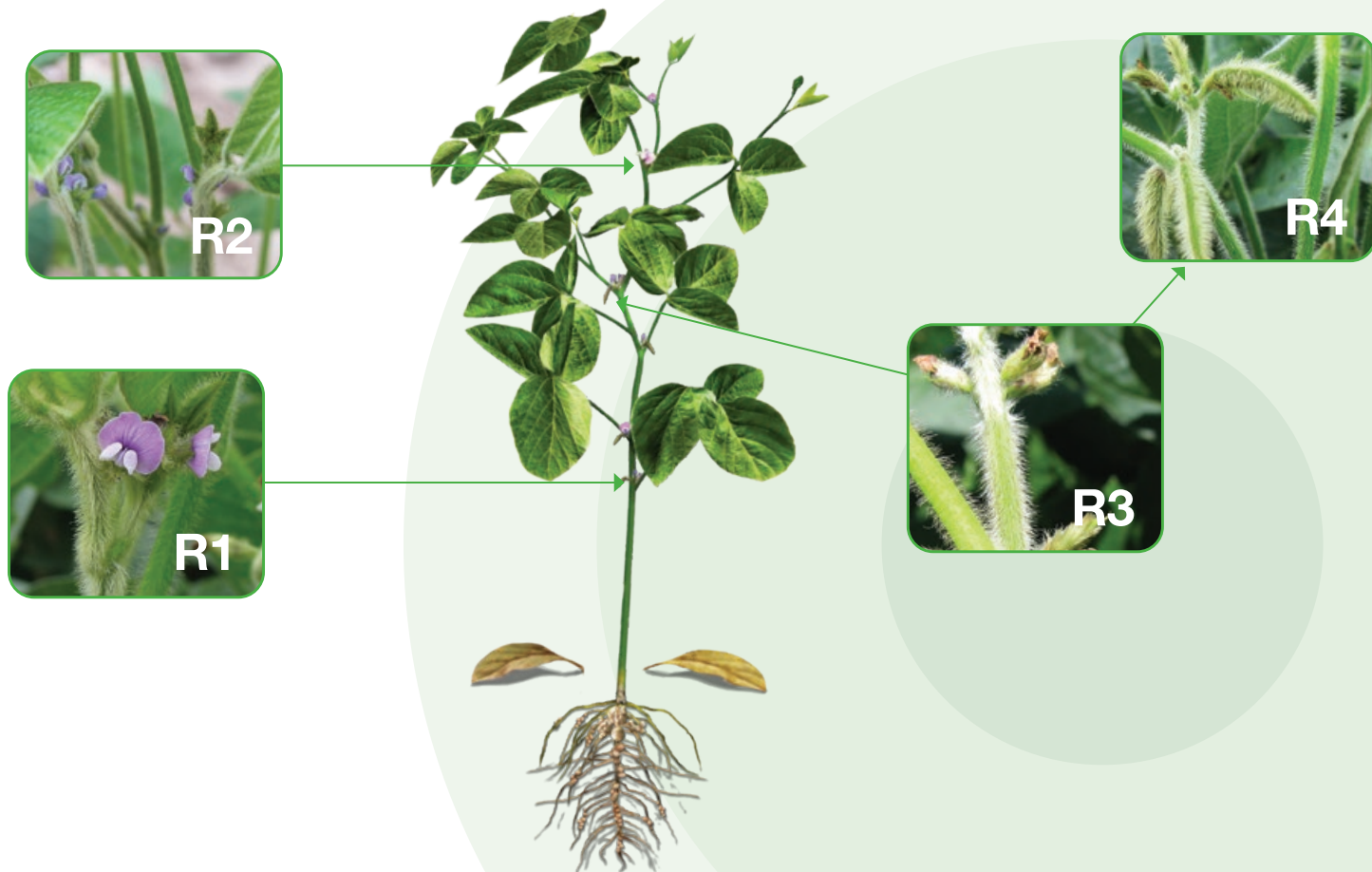
An open flower appears on one of the top two stem nodes.

## R3: Beginning pod.

A 3/16-inch pod appears on one of the four upper main stem nodes.

## R4: Full pod.

A 3/4-inch pod appears on one of the four upper main stem nodes.





# Jump into the cycle of integrated pest management.

Integrated pest management (IPM) is a comprehensive approach to help reduce pest populations using a 4-step cycle.

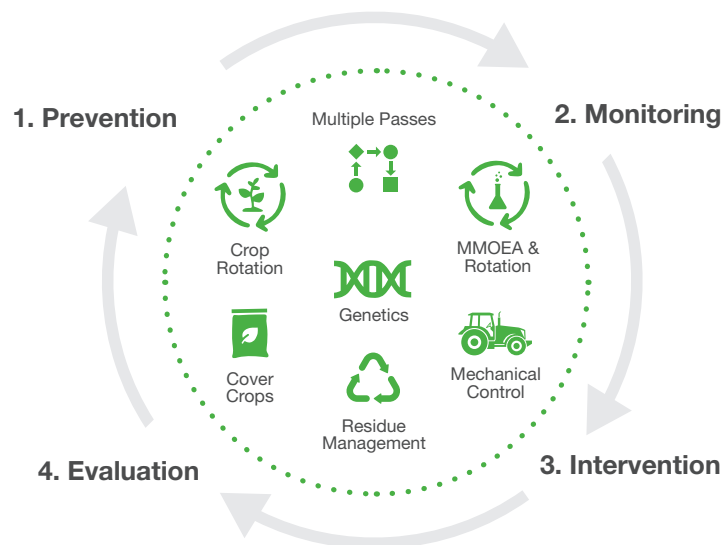
**1. Prevention** – Identify the potentially harmful organisms or causes of infestations and implement some preventative measures.

**2. Monitoring** – Scout and take notes. Determine if the intervention or economical threshold has been reached. If yes, it might be time to move to the next step. If no, keep monitoring the pest until action is needed.

**3. Intervention** – Apply control measures simultaneously or sequentially.

**4. Evaluation** – Evaluate your progress. Determine whether the intervention measures were the right ones, if they were efficient and what could be done better next time.

## Integrated Pest Management



### Plan your tactics.

As part of the IPM strategy, crop rotation and a multiple-pass approach are just two tactics that can be used during the prevention and intervention steps. Here are more examples:

- **Plant cover crops** – Suppress weeds, reduce erosion
- **Select genetics** – Choose hybrids/varieties with disease resistance genes, increased vigour and plant establishment
- **Utilize mechanical control** – Uproot weeds or remove infected plant material
- **Use multiple modes of effective action (MMOE) and chemistry rotation** – Ensure the chemistry used is effective on the target and rotate between modes of action to reduce selection pressure
- **Manage residue** – Reduce inoculum and pest buildup, and allow for better coverage during application

# Spray your best with Liberty 200 SN herbicide.

Liberty® 200 SN herbicide provides an additional mode of action to your field with its Group 10 chemistry. It has contact activity on weeds and that's why it must reach the targeted weeds in order to be effective (no contact = no activity).

## Optimize your mixing order.

If you are adding AMS to your Liberty 200 SN tank mix, it's important to remember that AMS must always go in the tank first. The order should be as follows:

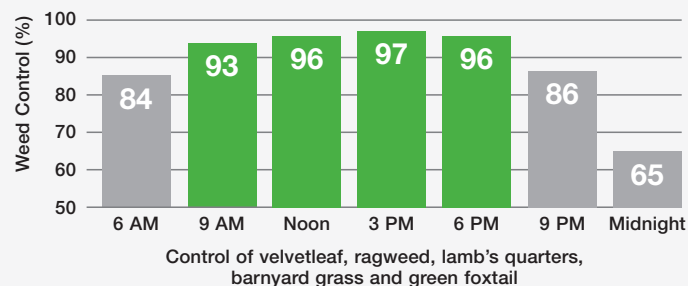
1. Ammonium sulfate (AMS)
2. Liberty 200 SN
3. Tank-mix partner (if required)

### TECH TIP

*If adding Select® herbicide to your tank mix, use the following mixing order:*

1. AMS
2. Amigo® adjuvant
3. Liberty 200 SN
4. Select

### Spray Liberty 200 SN between 9 AM and 6 PM for optimal activity



Source: Stopps, G.J., Nurse, R.E., Sikkema, P.H., "The effect of time of day on the activity of postemergence soybean herbicides," 2013, Weed Technology, [online] 27(4), 690-695



Spray Liberty 200 SN with a minimum 20 gallons per acre for good contact and optimal coverage.



Add AMS for enhanced activity on tough weeds.<sup>1</sup>



Tank mix Liberty 200 SN with Select and Amigo in canola for control of difficult grassy weeds, such as wild oats and volunteer barley.



Apply Liberty 200 SN on relatively warm (10°C or more) and sunny days, and in the middle of the day for better performance.



Aim for medium to coarse droplets of 250 to 350 microns.



Apply Liberty 200 SN in the same tracks, but in the reverse direction if you are doing a second pass in canola. Plan a post-application of Liberty 200 SN in Enlist E3™ or XtendFlex® soybeans as part of a two-pass program following a strong residual program.

<sup>1</sup> See label for specific weeds.

Learn more about spraying Liberty 200 SN by visiting our online learning module at [agsolutions.ca/liberty200sn-module](https://agsolutions.ca/liberty200sn-module).

# Spray system hygiene.

## Comprehensive cleaning is crucial.

Non-dicamba-tolerant soybeans are extremely sensitive to dicamba. Even with as **little as 3 ml of formulated product OR 355 ml of leftover spray solution** in a 1000-gallon spray tank sprayed at 10 gallons per acre.

**BEFORE** and **AFTER** using a herbicide, thoroughly clean the sprayer and spray system (including fill lines, nurse trucks, pumps, etc.) by performing a triple rinse procedure using a detergent-based commercial tank cleaner.

## Common contamination points.

Pesticide residue left in or on any container or equipment used to store, transfer or apply products can be a source of contamination. Everything that a herbicide has touched during the process of handling and mixing must be cleaned. While every mixing and loading setup is different, there are some common contamination points that need to be cleaned with a triple rinse prior to and after using a herbicide.

Prior to the sprayer*	On the sprayer**
Mini bulk lines	Tank
Transfer pumps	Hoses/fill line
Mixing vats	Inductor
Transfer hoses	Screens
Manifolds	Line filters
Overhead fill lines	Recirculation lines
Nurse truck tanks	End caps/dead zones
Agitation pumps	Pump
In-line filters/screens	Outside surfaces of the sprayer

\* Be sure to take extra care when re-filling water supply tanks. Using hoses that have not been rinsed to re-fill clean water tanks can hold enough dicamba to contaminate water supply tanks.

\*\* Be sure to actuate all valves and solenoids during each rinse to ensure all of the plumbing is rinsed thoroughly. Don't forget the inductor as a point of contamination if used to mix the load.

## Group 4 herbicide injury on non-herbicide-tolerant soybeans



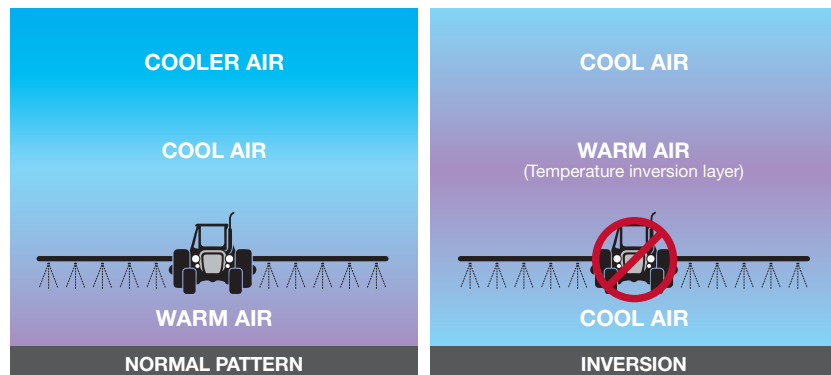
## Basic procedure for spray system cleanout.

1. Drain tank of all remaining spray solution.
2. Begin first rinse using water.
  - Rinse all parts of spray system plumbing thoroughly
  - Ensure all surfaces are visually clean
  - Clean all screens, pumps, hoses, end caps, recirculation lines, etc.
  - Actuate all solenoids and valves to ensure clean water flows through all lines
  - Drain all rinsate<sup>1</sup>
3. Begin second rinse using water and **a detergent-based commercial tank cleaner**.
  - Fill all lines, screens, strainers, plumbing, etc. with detergent and water solution
  - Allow cleaning agent to sit in all plumbing for at least 15 minutes or as advised by the label of the cleaner
  - Flush the solution through the entire system and drain excess rinsate<sup>1</sup>
4. Begin third rinse process using water.
  - Rinse tank walls and fill all plumbing
  - Allow water to flow through the entire system thoroughly prior to draining rinsate<sup>1</sup>
5. Record spray cleanout procedure and date.

<sup>1</sup> Dispose of rinsate according to label requirements.



# Recognizing temperature inversions.



## How temperature inversions form.

During daytime hours, solar radiation warms the earth's surface and, during days with little cloud cover, convection creates winds and gusts that transport air vertically. As sunset nears, the earth's surface is no longer heated by the sun. As a result, heat from the warmer air is transferred back to the soil, creating a layer of cooler, denser air near the soil surface. This process creates a temperature inversion, where the cool air at ground level has warmer air above it through the very lowest levels of the atmosphere.

Spraying pesticides during an inversion can result in the off-target movement of small droplets as physical drift which never reach their intended target. This is not to be confused with volatility, which is when a liquid droplet converts to a gas after it has reached its intended target.

## Impact of temperature inversions on pesticide applications.

Temperature inversions can negatively impact pesticide applications by trapping small droplets in the cool air of the inversion layer. These small droplets can then travel long distances, either downslope to low-lying areas or in an unpredictable manner with the light and variable winds. To avoid off-target movement of pesticides due to inversions, be mindful of inversions during the following spray timings.

**Mornings:** One of the worst times to spray is when overnight skies were clear and wind speeds are low. Inversions can persist for one to two hours after sunrise on a calm day.

**Late afternoon/early evening:** The lowest five feet closest to the ground can sometimes begin to form an inversion three to four hours before sunset. Evening inversions are riskier for off-target movement because they are very persistent and will intensify until after sunrise.

**Nighttime:** Inversions may have already been established and continue to intensify until after dawn.

## Conditions most likely to favour an inversion:

- Clear skies during late afternoon and during the night
- Dry soil surface
- Windspeeds < 4 mph (6 km/hr) that result in no air mixing
- Low areas, valleys or basins where cool air will sink and collect. Inversions will form in these areas sooner, persist longer and be more intense

## How to identify if an inversion exists:

- Morning dew
- Morning fog (indicates that an inversion existed prior to fog formation)
- Smoke or dust hanging in the air or moving laterally
- Overnight cloud cover is 25% or less
- Inversions can begin forming three to four hours before sunset and can persist until one to two hours after sunrise
- Measure air temperature 6 to 12 inches above the soil and 8 to 10 feet above the soil. An inversion exists if measured air temperature at 8 to 10 feet above the soil is higher than the measured air temperature at 6 to 12 inches above the soil. Be sure the instrument is shaded and not influenced by solar heating

Content adapted from: Enz, J.W., Hofman, V., and Thostenson, A., Air Temperature Inversions: Causes, Characteristics, and Potential Effects on Pesticide Spray Drift, NDSU Extension Service, Publication AE1705, 2014, <http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2014/13hrt14a2.htm>.

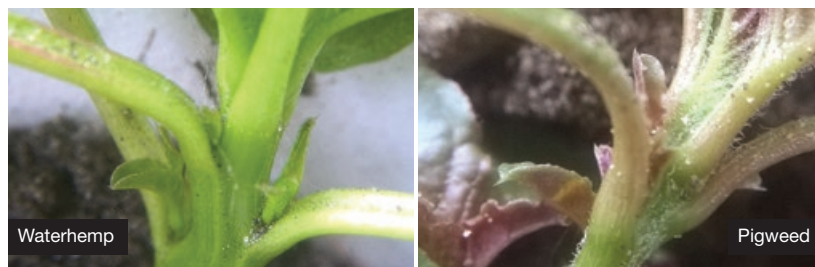
Visit [agsolutions.ca/applicationstewardship](https://agsolutions.ca/applicationstewardship) to learn more.  
Access the Engenia Spray Tool at [engenaspraytool.ca](https://engenaspraytool.ca).

# Waterhemp catching up to you? Here's how to stay ahead.

Waterhemp resistant to Group 2, 5, 9 (glyphosate) and post-applied Group 14 and 27, is found in Ontario and Quebec.<sup>1,2</sup> It's difficult to control once it passes four inches in height, requiring constant scouting. This weed can reach up to 12 feet in height while producing an average of almost 300,000 seeds per female plant.<sup>3,4</sup>

## How to identify waterhemp.

1. Often confused for pigweed, waterhemp has smooth, hairless stems (left) while pigweed has thick hairs (redroot) or thin hairs (smooth or green) on the stem (right).
2. The first true leaves of waterhemp are long, narrow and glossy (left). The other *Amaranthus* weeds (except Palmer amaranth) have hairy, egg-shaped leaves (right).



Source: BASF, ON, 2017



Source: BASF, ON, 2017

## How to control waterhemp.

Information presented is for quick reference only. Always refer to product label.

	Glyphosate-tolerant corn		Roundup Ready 2 Xtend® soybeans	XtendFlex® soybeans	Enlist E3™ soybeans	Conventional/IP soybeans
Pre-plant/ Pre-emergence	Zidua® SC herbicide + Marksman® herbicide <sup>5,6</sup>	Integrity® herbicide	Zidua SC + Engenia® herbicide + Eragon® Plus herbicide/ Integrity <sup>8</sup>	Zidua SC + Engenia + Eragon Plus/ Integrity <sup>8</sup>	Zidua SC	Zidua SC (Check with your grain buyer.) <sup>9</sup>
	or	followed by				
Post-emergence	Marksman <sup>5</sup> + Armezon® PRO herbicide <sup>7</sup> / Zidua SC	Marksman	Engenia <sup>7</sup> (up to 2 <sup>nd</sup> trifoliate)	Engenia <sup>7</sup> (up to 2 <sup>nd</sup> trifoliate) or Liberty® 200 SN herbicide	Liberty 200 SN or Zidua SC	Zidua SC (Check with your grain buyer.) <sup>9</sup>
Post-harvest	–	–	Distinct® herbicide	Distinct	Distinct	Distinct

<sup>1</sup> "Waterhemp: biology and control," Field Crop News, <https://fieldcropnews.com/2020/07/waterhemp-biology-and-control/>. <sup>2</sup> Bulletin d'information malherbiologie No 6 du RAP, 2022. <sup>3</sup> Biology and the management of waterhemp, 2017. <sup>4</sup> Sellers et al., 2017. <sup>5</sup> Can only be applied once per season.

<sup>6</sup> Marksman can only be applied pre-emergence. <sup>7</sup> In a tank mix with glyphosate. <sup>8</sup> In a tank mix with glyphosate and Merge® adjuvant.

<sup>9</sup> Talk to your grain buyer regarding maximum residue limits (MRLs) for markets around the world before applying to conventional or IP soybeans.

## TECH TIP

### Key management tips for waterhemp:

- Use at least two effective modes of action for consistent control
- Apply when small and actively growing
- Use a higher water volume to ensure adequate coverage
- Spray during the middle of the day
- Control in each crop, each year (including fall applications)

# Problem weeds: Consider these biological traits for weed management.

Scouting for problem weeds is vital, even late in the growing season. As soon as you've identified one, it's best to take action. Be sure to keep in mind that weeds are best controlled when small and actively growing. It's also good practice to apply the appropriate herbicide at the full rate with labelled adjuvants to improve absorption. Improve your coverage by increasing water volumes and selecting the proper nozzles.

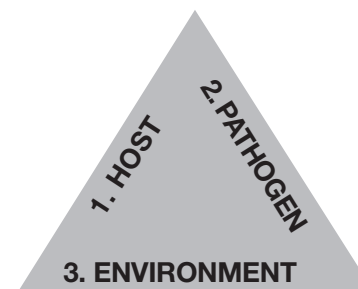
Weed	Helpful information	Picture
Annual or rough stalk bluegrass	<ul style="list-style-type: none"> <li>Emerges in fall and early spring</li> <li>Propagates through seeds or rhizomes</li> <li>Consider a fall or early spring herbicide application to reduce late-season development or further spring establishment</li> </ul>	
Common ragweed	<ul style="list-style-type: none"> <li>Herbicide resistance to Group 2, 5, 9, 14 in Ontario and Quebec</li> <li>Ability to emerge late in growing season (large seed)</li> <li>Select a residual herbicide and scout for late-season escapes to control when small</li> <li>Lookalike weeds include biennial wormwood and wild carrot</li> </ul>	
Lamb's quarters	<ul style="list-style-type: none"> <li>Waxy cuticle and mineral deposits prevent absorption of herbicide</li> <li>Control at pre-emergence with an effective residual herbicide</li> <li>Consider an adjuvant to increase herbicide penetration post-emergence</li> <li>Can be confused with spreading atriplex and goosefoot species</li> </ul>	
Perennial sow thistle	<ul style="list-style-type: none"> <li>Reproduces by seeds or underground roots</li> <li>If left uncontrolled, becomes an extensive root system to manage</li> <li>Consider a fall application for better herbicide uptake by the roots</li> <li>Lookalike weeds are prickly lettuce and annual sow thistle</li> </ul>	
Velvetleaf	<ul style="list-style-type: none"> <li>Fine hairs on the leaves and stem can prevent absorption of herbicide</li> <li>Manage velvetleaf when small and actively growing</li> <li>Consider an adjuvant to increase post-emergent herbicide penetration</li> </ul>	

<sup>1,2,3,4,5</sup> Source: BASF.



# Tar spot, is it in your field?

Tar spot can reduce corn yields by up to 50 bu/ac under high infestations.<sup>1</sup> First documented in Indiana and Illinois in 2015, the pathogen continues to spread into other corn growing regions, such as Ontario, and requires active management. The infection and dispersal in corn growing regions is dependent on **three interacting variables**.



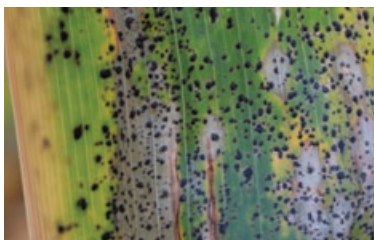
## 1. The prevalence of corn in crop production means the disease has a **HOST**.

- Select tolerant hybrids, there are currently no resistant hybrids
- Wind-dispersed spores allow the disease to spread in a region
- Disease can overwinter on corn residue

## 2. The second variable is the **PATHOGEN** you are managing. Here are a few tips to be able to identify tar spot:

- Raised, black spots spread across the leaf
- Cannot be scraped off
- Can be found on the husk

**Click here** for more on corn disease identification.



Tar spot can produce two types of lesions: black lesions (stroma) or fisheye lesions (tan to brown lesion with a dark border around the stroma).

## 3. The final variable is the **ENVIRONMENT** and whether it is favourable for disease development. The following three factors are key for the development of tar spot:

- Prolonged leaf wetness (>7 hours)
- Cool conditions (17-23°C)
- High humidity (>75%)

Scouting should occur in areas conducive to these conditions. A preventative fungicide application with adequate coverage can be done at the VT/R1 stage with a product such as Veltyma<sup>®</sup> fungicide or Veltyma DLX. **Click here** to learn more about Veltyma and Veltyma DLX.

<sup>1</sup> "An overview of tar spot," Crop Protection Network, <https://cropprotectionnetwork.org/publications/an-overview-of-tar-spot>.

### TECH TIP

*When scouting for tar spot, look for leaves on the plant that are sitting flat horizontally where water can persist and spores may land.*



# Get the mode of action that's right for your operation.

Knowing all of your mode-of-action options allows you to use multiple modes of effective action for resistance management in your operation.

## Herbicides

Group	Mode of action	BASF products
1	Acetyl CoA Carboxylase (ACCase) Inhibitors	Poast® Ultra and Select®
2	ALS (Acetolactate Synthase) Inhibitors	Pursuit®, component in Clean Sweep®, Conquest® LQ
3	Mitosis (Microtubule Assembly) Inhibitors	Prowl® H2O
4	Synthetic Auxins	Engenia®, component in Distinct® and Marksman®
5	Photosystem II Inhibitors (different binding site than 6 & 7)	Component in Conquest LQ and Marksman
6	Photosystem II Inhibitors (different binding site than 5 & 7)	Basagran® Forte, component in Clean Sweep
9	EPSP (5-enolpyruvylshikimate-3-phosphate) Synthase Inhibitor	Glyphosate <sup>1</sup>
10	Glutamine Synthetase Inhibitors	Liberty® 200 SN and Ignite®
14	Protoporphyrinogen Oxidase (PPO) Inhibitors	Component in Eragon® Plus and Integrity®
15	Mitosis (Very Long Chain Fatty Acids Synthesis) Inhibitors	Frontier® Max, Zidua® SC, component in Armezon® PRO and Integrity
19	Inhibition of auxin transport	Component in Distinct
27	Carotenoid Biosynthesis (p-hydroxyphenyl pyruvate dioxygenase [HPPD]) Inhibitors	Armezon, component in Armezon PRO

## Fungicides

Group	Mode of action	BASF products
3	Sterol Biosynthesis (Demethylation) Inhibitors	Caramba®, Cevya®, Sphaerex®, component in Cotegra®, Veltyma® and Veltyma DLX
7	Respiration (Complex II: Succinate-dehydrogenase) Inhibitors	Sercadis®, component in Cotegra and Priaxor®
11	Respiration (Complex III: Quinone Outside) Inhibitors	Headline®, component in Priaxor, Veltyma and Veltyma DLX
40	Cell Wall Biosynthesis (Cellulose Synthase)	Forum® and component in Zampro®
45	Respiration (Complex III: Quinone outside, stigmatellin binding type) Inhibitors	Component in Zampro
BM02	Biological (Microbial)	Serifel®

## Insecticides

Group	Mode of action	BASF products
4	Nicotinic Acetylcholine Receptor Competitive Modulator	Titan®
9D	Chordotonal Organ TRPV Channel Modulator	Sefina®
30	GABA-Gated Chloride Channel Allosteric Modulator	Cimegra®

<sup>1</sup> Not a product of BASF.

# Need product details? We've got them right here.

Key information to keep you moving.

ST = Seed treatment    H = Herbicide    F = Fungicide    I = Insecticide

Information presented is for quick reference only. Always refer to product label.

Product	Armezon®	Armezon PRO	Basagran® Forte	Caramba®	Cevya®
Active ingredient(s)	Topramezone	Dimethenamid-P, Topramezone	Bentazon	Metconazole	Mefentrifluconazole
Concentration	336 g/L	630 g/L, 12.5 g/L	480 g/L	90 g/L	400 g/L
Type	H	H	H	F	F
Group	27	15, 27	6	3	3
Formulation	Liquid suspension	Emulsifiable concentrate	Liquid	Liquid	Suspension concentrate
WAMLEGS	L	E	L	L	L
Ground water volume L/ac, gal/ac <sup>a</sup>	40-80, 10-20	Minimum 40, 10	Minimum 40, 10	Minimum 80, 20	Minimum 40, 10
Aerial application	No	No	No	Yes	Yes
Rainfast (hours)	Dependent on the glyphosate used	Dependent on the glyphosate used	6	1	Avoid application if heavy rain is forecast
REI (hours)	12	24	12	12 <sup>b</sup>	12
Pre-harvest interval (days)	45 for corn harvest (silage, fodder or grain).	80 for corn; 45 for grazing or feeding treated corn forage, silage, fodder or grain to livestock.	Do not graze treated alfalfa or cut for hay within 20 days of application. See label for other crops.	30 for barley, oats, rye, wheat, and soybeans; 20 for field corn and popcorn; 18 for hand harvesting sweet corn; 7 for mechanical harvesting sweet corn.	7 for potatoes.
Storage	Protect from freezing.	Protect from freezing.	Protect from freezing.	Protect from freezing.	Protect from freezing.
Bulk density (g/cm <sup>3</sup> )	1.12	1.12	1.19	1.05	1.15

<sup>a</sup> Use higher water volumes to ensure adequate coverage. <sup>b</sup> Except for hand harvesting corn (18 days) and hand-set irrigation in corn (3 days).



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Information presented is for quick reference only. Always refer to product label.

Product	Cimegra®	Clean Sweep®	Conquest® LQ	Cotegra®	Distinct®
Active ingredient(s)	Broflanilide	Imazethapyr, Bentazon	Imazethapyr, Metribuzin	Prothioconazole, Boscalid	Dicamba, Diflufenzopyr
Concentration	100 g/L	240 g/L, 480 g/L	240 g/L, 480 g/L	150 g/L, 250 g/L	50% a.e., 20% a.e.
Type	I	H	H	F	H
Group	30	2, 6	2, 5	3, 7	4, 19
Formulation	Suspension concentrate	Solution, Liquid	Solution, Suspension concentrate	Suspension concentrate	Wettable granule
WAMLEGS	L	L	L	L	W
Ground water volume L/ac, gal/ac <sup>a</sup>	Minimum 20, 5 for in-furrow 40-80, 10-20 for foliar	80-120, 20-30	60-120, 15-32	Minimum 80, 20	40-80, 10-20
Aerial application	No	No	No	Yes	No
Rainfast (hours)	Avoid application if heavy rain is forecast	6	Avoid application if heavy rain is forecast	3	4
REI (hours)	N/A for in-furrow, 12 for foliar	12	12	24	12
Pre-harvest interval (days)	N/A for in-furrow, 14 for foliar.	100 for soybeans.	100 for soybeans.	21 for dry beans and soybeans; 36 for canola.	See label.
Storage	Protect from freezing.	Protect from freezing.	Protect from freezing.	Protect from freezing.	Store in a cool, dry area.
Bulk density (g/cm <sup>3</sup> )	1.06	1.11, 1.19	1.11, 1.16	1.15	0.61

<sup>a</sup>Use higher water volumes to ensure adequate coverage.

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Information presented is for quick reference only. Always refer to product label.

Product	Engenia®	Eragon® LQ – pre-plant	Eragon LQ – pre-harvest	Forum®	Frontier® Max
		(component of Eragon Plus)			
Active ingredient(s)	Dicamba	Saflufenacil	Saflufenacil	Dimethomorph	Dimethenamid-P
Concentration	600 g/L	342 g/L	342 g/L	500 g/L	720 g/L
Type	H	H	H	F	H
Group	4	14	14	40	15
Formulation	Solution	Water-based suspension concentrate	Water-based suspension concentrate	Suspension concentrate	Emulsifiable concentrate
WAMLEGS	L	L	L	L	E
Ground water volume L/ac, gal/ac <sup>a</sup>	Minimum 40, 10 for soybeans	40-80, 10-20	80, 20	20-40, 5-10 for concentrate, 90-650, 24-172 for dilute	Minimum 70, 17
Aerial application	No	No	No	Yes	No
Rainfast (hours)	4	Dependent on the glyphosate used	Dependent on the glyphosate used	2	N/A
REI (hours)	12	12	12	12	24
Pre-harvest interval (days)	See label.	60 for barley, corn (field, sweet), soybeans, oats and wheat (spring, winter, durum).	2 for dry beans; 3 for soybeans. Do not graze or feed treated dry bean or soybean hay or straw to livestock. 3 for barley, canola, triticale and wheat. For barley, triticale and wheat, straw can be used as feed or grazed 3 days or more after a pre-harvest weed management application.	4 for potatoes.	40 for potatoes. See label for other crops.
Storage	Keep dry.	Protect from freezing.	Protect from freezing.	Protect from freezing.	Store in a cool, dry area.
Bulk density (g/cm³)	1.24	1.15	1.15	1.15	1.13

<sup>a</sup> Use higher water volumes to ensure adequate coverage.

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Information presented is for quick reference only. Always refer to product label.

Product	Headline®	Headline AMP	Ignite®	ILEVO®	Integrity®
Active ingredient(s)	Pyraclostrobin	Metconazole, Pyraclostrobin	Glufosinate ammonium	Fluopyram	Saflufenacil, Dimethenamid-P
Concentration	250 g/L	55 g/L, 146 g/L	150 g/L	600 g/L	68 g/L, 600 g/L
Type	F	F	H	ST	H
Group	11	3, 11	10	7	14, 15
Formulation	Emulsifiable concentrate	Liquid	Solution	Suspension	Emulsifiable concentrate
WAMLEGS	E	L	L	N/A	E
Ground water volume L/ac, gal/ac <sup>a</sup>	Minimum 40, 10 (For potatoes: minimum 80, 20)	40-80, 10-20	Minimum 45, 12	Uniform distribution on the seed	40-80, 10-20
Aerial application	Yes	Yes	No	No	No
Rainfast (hours)	Avoid application if heavy rain is forecast	1	4	N/A	1
REI (hours)	12	12 <sup>c</sup>	12	N/A	12
Pre-harvest interval (days)	3 for potatoes. See label for other crops.	Barley, oats, rye, triticale and wheat; do not apply later than end of flowering. 20 for field corn, popcorn and seed corn; 13 for hand harvesting sweet corn, 7 for mechanical harvesting sweet corn.	9 for dry beans.	N/A	100 for field corn; 60 for sweet corn and soybeans.
Storage	Protect from freezing.	Protect from freezing.	Protect from freezing.	Store in a cool, dry area.	Store in an unheated, dry area.
Bulk density (g/cm <sup>3</sup> )	1.06	1.06	1.11	1.24	1.09

<sup>a</sup>Use higher water volumes to ensure adequate coverage. <sup>c</sup> Except for hand harvesting or hand detasseling corn (13 days) and hand-set irrigation in corn (1 day).



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Information presented is for quick reference only. Always refer to product label.

Product	Insure® Cereal FX4 + Relenya®		Liberty® 200 SN	Marksman®	Optill®
	Insure Cereal FX4	Relenya			
Active ingredient(s)	Triticonazole, Metalaxyl, Fluxapyroxad, Pyraclostrobin	Mefentrifluconazole	Glufosinate ammonium	Dicamba, Atrazine	Imazethapyr, Saflufenacil
Concentration	16.7 g/L, 10 g/L, 8.35 g/L, 16.7 g/L	400 g/L	200 g/L	132 g/L, 261 g/L	50.2%, 17.8%
Type	ST	ST	H	H	H
Group	3, 4, 7, 11	3	10	4, 5	2, 14
Formulation	Water-based suspension	Water-based suspension	Solution	Suspension	Water dispersible granule
WAMLEGS	N/A	N/A	L	L	W
Ground water volume L/ac, gal/ac <sup>a</sup>	See label	See label	Minimum 80, 20	90-140, 25-35	40-80, 10-20
Aerial application	No	No	No	No	No
Rainfast (hours)	Avoid application if heavy rain is forecast	N/A	4	Avoid application if heavy rain is forecast	3
REI (hours)	N/A	N/A	24	12	12
Pre-harvest interval (days)	N/A	N/A	86 for corn; 70 for soybeans; 60 for canola. 20 for grazing treated corn or soybean fields.	60 for corn. Do not graze or cut for fodder before crop maturity (ear emergence).	100
Storage	Store in a cool, dry area. Avoid freezing and temperatures above 30°C.	Protect from freezing.	Protect from freezing.	Store in a cool, dry area.	Store in a cool, dry area.
Bulk density (g/cm <sup>3</sup> )	1.07	1.15	1.10	1.17	0.51

<sup>a</sup> Use higher water volumes to ensure adequate coverage.

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Information presented is for quick reference only. Always refer to product label.

Product	Poast® Ultra	Priaxor®	Prowl® H2O	Pursuit®	Sefina®
Active ingredient(s)	Sethoxydim	Fluxapyroxad, Pyraclostrobin	Pendimethalin	Imazethapyr	Afidopyropen
Concentration	450 g/L	167 g/L, 333 g/L	455 g/L	240 g/L	50 g/L
Type	H	F	H	H	I
Group	1	7, 11	3	2	9D
Formulation	Emulsifiable concentrate	Liquid suspension	Microcapsule suspension	Solution	Emulsifiable concentrate
WAMLEGS	E	L	M	L	E
Ground water volume L/ac, gal/ac <sup>a</sup>	20-80, 5-20	40-80, 10-20	40-80, 10-20	40-160, 10-40	Minimum 40-80, 10-20 for potatoes and soybeans
Aerial application	Yes	Yes	No	No	Yes
Rainfast (hours)	1	1	N/A	Avoid application if heavy rain is forecast	Avoid application if heavy rain is forecast
REI (hours)	12	12	12 for soybeans. See label for other crops.	12	12
Pre-harvest interval (days)	70 for alfalfa and canola; 80 for dry beans, potatoes and soybeans.	21 for canola, corn and soybeans; 7 for sweet corn; 14 for alfalfa. See label for other crops.	100 for soybeans. See label for other crops.	100 for dry beans, imazethapyr-tolerant corn and soybeans. Do not graze treated crops or cut for hay.	0 for Crop Group 17 & 18 (alfalfa), 7 for potatoes and soybeans. See label for other crops.
Storage	Store in a cool, dry area.	Protect from freezing.	Protect from freezing.	Protect from freezing.	Store in a cool, dry area.
Bulk density (g/cm <sup>3</sup> )	1.00	1.16	1.18	1.11	1.03

<sup>a</sup> Use higher water volumes to ensure adequate coverage.

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Information presented is for quick reference only. Always refer to product label.

Product	Select®	Sercadis®	Serifel®	Sphaerex®	Teraxxa® F4
Active ingredient(s)	Clethodim	Fluxapyroxad	<i>Bacillus amyloliquefaciens</i> strain MBI 600	Metconazole, Prothioconazole	Broflanilide, Triticonazole, Metalaxyl, Fluxapyroxad, Pyraclostrobin
Concentration	240 g/L	300 g/L	Not less than 5.5 x 10 <sup>10</sup> viable spores/g	112.5 g/L, 187.5 g/L	16.7 g/L, 16.7 g/L, 10 g/L, 8.35 g/L, 16.7 g/L
Type	H	F	F	F	I, F
Group	1	7	BM02	3	I: 30, F: 3, 4, 7, 11
Formulation	Emulsifiable concentrate	Suspension	Wettable powder	Emulsifiable concentrate	Water-based suspension
WAMLEGS	E	L	W	E	N/A
Ground water volume L/ac, gal/ac <sup>a</sup>	Minimum 60, 15	Minimum 40, 10	Minimum 20, 5	80, 20	See label
Aerial application	Yes	Yes	No	Yes	No
Rainfast (hours)	1	1	Avoid application if heavy rain is forecast	Avoid application if heavy rain is forecast	N/A
REI (hours)	12	12	4	24	N/A
Pre-harvest interval (days)	60 for canola. See label for other crops.	7 for potatoes.	0 for all crops.	30 for barley, oats, rye, triticale and wheat.	N/A
Storage	Store in a cool, dry area.	Protect from freezing.	Store between 5°C and 25°C.	Protect from freezing.	Protect from freezing.
Bulk density (g/cm <sup>3</sup> )	0.96	N/A	0.2-1.2	1.03	1.08

<sup>a</sup> Use higher water volumes to ensure adequate coverage.



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Information presented is for quick reference only. Always refer to product label.

Product	Titan <sup>®</sup>	Veltyma <sup>®</sup>	Veltyma DLX	Zampro <sup>®</sup>	Zidua <sup>®</sup> SC
Active ingredient(s)	Clothianidin	Mefenfluroconazole, Pyraclostrobin	Metconazole, Mefenfluroconazole, Pyraclostrobin	Dimethomorph, Ametoctradin	Pyroxasulfone
Concentration	600 g/L	200 g/L, 200 g/L	90 g/L, 200 g/L, 200 g/L	225 g/L, 300 g/L	500 g/L
Type	I	F	F	F	H
Group	4	3, 11	3, 11	40, 45	15
Formulation	Suspension	Suspension concentrate	Liquid, Suspension concentrate	Suspension	Suspension concentrate
WAMLEGS	L	L	L	L	L
Ground water volume L/ac, gal/ac <sup>a</sup>	See label	40-80, 10-20	Minimum 80, 20	Minimum 80, 20	Minimum 40, 10
Aerial application	No	Yes	Yes	Yes	No
Rainfast (hours)	Avoid application if heavy rain is forecast	Avoid application if heavy rain is forecast	Avoid application if heavy rain is forecast	2	N/A
REI (hours)	12	12	12 <sup>b</sup>	12	12
Pre-harvest interval (days)	N/A	7 for potatoes, 21 for canola, corn, soybeans, sugar beets and wheat. See label for other crops.	21 for corn.	4 for potatoes.	Not specified. Follow the application timing for the crop on the label. Harvest can occur at crop maturity.
Storage	Protect from freezing.	Protect from freezing.	Protect from freezing.	Protect from freezing.	Protect from freezing.
Bulk density (g/cm <sup>3</sup> )	1.25	1.14	1.05, 1.14	1.11	1.21

<sup>a</sup> Use higher water volumes to ensure adequate coverage. <sup>b</sup> Except for hand harvesting corn (18 days) and hand-set irrigation in corn (3 days).

# Quick reference guide for crop rotation.

Scan over your crop rotation options all in one place, so that you can be confident when planting next season.

Information presented is for quick reference only. Always refer to product label.

Herbicide	Armezon®	Armezon PRO	Basagran® Forte	Clean Sweep®	Conquest® LQ	Distinct®	Engenia® <sup>10</sup>	Eragon® Plus (fall application)	Eragon Plus (spring application)	Frontier® Max
Alfalfa	FS <sup>1</sup>	FS	0 D <sup>2</sup>	B	B	30 D				
Barley	B	B	< 1 M <sup>2</sup>	FS <sup>4</sup>	FS <sup>4</sup>	30 D		FS	CF <sup>13</sup> /FS	100 D <sup>15</sup>
Beans (kidney)	B	B		CF <sup>5</sup> /FS	CF <sup>5</sup> /FS	30 D			FS	0 D
Beans (white)	FS <sup>1</sup>	FS	0 D <sup>2</sup>	CF <sup>5</sup> /FS	CF <sup>5</sup> /FS	30 D			FS	0 D
Canola	FS	FS	< 1 M <sup>2</sup>	CF <sup>5,6</sup> /FS <sup>6</sup>	<sup>8</sup>	30 D		FS	FS	
Corn (field)	CF/FS	CF/FS	0 D <sup>2</sup>	CF <sup>5,7</sup> /FS	CF <sup>5,7</sup> /FS	30 D		FS	CF <sup>13</sup> /FS	0 D
Corn (seed)	B	B	0 D <sup>2</sup>	B	B	30 D				0 D <sup>16</sup>
Corn (sweet)	B	B		B	B	30 D		FS	CF <sup>13</sup> /FS	0 D
Oats	B	B	< 1 M <sup>2</sup>	B	<sup>9</sup>	30 D		FS	CF <sup>13</sup> /FS	100 D <sup>15</sup>
Potatoes	FS <sup>1</sup>	FS		B	B	30 D				FS
Rye	B	B	<1 M <sup>2,3</sup>	B	<sup>9</sup>	30 D				100 D <sup>15</sup>
Soybeans	FS <sup>1</sup>	FS	0 D <sup>2</sup>	CF <sup>5</sup> /FS	CF <sup>5</sup> /FS	30 D	0 D <sup>11</sup>	FS	CF <sup>13,14</sup> /FS	0 D
Sugar beets	B	B	< 1 M <sup>2</sup>	B	<sup>8</sup>	30 D				
Wheat (spring)	FS	FS	< 1 M <sup>2</sup>	FS	FS <sup>9</sup>	30 D		FS	CF <sup>13</sup> /FS	100 D <sup>15</sup>
Wheat (winter)	4 M	4 M	< 1 M <sup>2</sup>	100 D <sup>5</sup> /FS	100 D <sup>5,9</sup> /FS	30 D		FS	CF <sup>13</sup> /FS	100 D <sup>15</sup>
Other crops	B	B		B	B	30 D	120 D	<sup>12</sup>		11 M <sup>15</sup>

FS = Can be planted the following season. CF = Can be planted in case of crop failure. D = Days M = Months

B = Conduct a field bioassay (a test strip grown to maturity) to confirm crop safety prior to seeding any rotational crops.

Information presented is for quick reference only. Always refer to product label.

Herbicide	Ignite®	Integrity®	Liberty® 200 SN	Marksman®	Optill®	Poast® Ultra	Prowl® H2O	Pursuit®	Select®	Zidua® SC (fall application)	Zidua SC (spring application)
Alfalfa	0 D			12 M <sup>20</sup>	B	0 D	B	B	0 D <sup>22</sup>	B	B
Barley	70 D	100 D	70 D	12 M <sup>20</sup>	FS <sup>4</sup>		B	FS <sup>4</sup>		B	11 M <sup>23</sup>
Beans (kidney)	0 D <sup>17</sup>				FS		CF <sup>13,21</sup> /FS <sup>21</sup>	CF <sup>5</sup> /FS	0 D	B	B
Beans (white)	0 D <sup>17</sup>			12 M <sup>20</sup>	FS		CF <sup>13,21</sup> /FS <sup>21</sup>	CF <sup>5</sup> /FS	0 D	B	B
Canola	0 D		0 D	22 M <sup>2</sup>	B	0 D	B	B	0 D	B	12 M <sup>23</sup>
Corn (field)	0 D	0 D	0 D		FS		CF <sup>13,21</sup> /FS	CF <sup>5,7</sup> /FS		FS	CF <sup>13</sup> /FS
Corn (seed)				4 M <sup>2</sup>	B		B	B		B	B
Corn (sweet)		0 D			B		B	B		B	B
Oats	70 D	100 D	70 D	12 M <sup>20</sup>	B		B	B		B	11 M <sup>23</sup>
Potatoes	0 D				B	0 D	B	B	0 D	FS	FS
Rye	70 D	100 D	70 D	12 M <sup>3,20</sup>	B		B	B		B	B
Soybeans	0 D		0 D	12 M <sup>20</sup>	CF <sup>13</sup> /FS	0 D	CF <sup>13,21</sup> /FS	CF <sup>5</sup> /FS		FS	CF <sup>13</sup> /FS
Sugar beets		22 M <sup>18</sup>		22 M <sup>2</sup>	B	0 D	B	B		B	B
Wheat (spring)	70 D	100 D	70 D	12 M <sup>20</sup>	FS		B	FS		B	FS <sup>23</sup>
Wheat (winter)	70 D	100 D	70 D	12 M <sup>20</sup>	100 D <sup>5,13</sup> /FS			100 D <sup>5</sup> /FS		B	4 M
Other crops	120 D	11 M <sup>19</sup>	120 D		B	30 D	B	B	30 D	B	B

<sup>1</sup> If the maximum seasonal application rate was 37 ml/ha. <sup>2</sup> None listed on label. Information based on OMAFRA's 2021 Publication 75A, Guide to Weed Control: Field Crops. <sup>3</sup> Applies to fall rye only. <sup>4</sup> Spring barley only. <sup>5</sup> Soil preparation for re-planting should be no deeper than 10 cm. <sup>6</sup> Imazethapyr-tolerant canola only. <sup>7</sup> Only imazethapyr-tolerant corn can be used in case of crop failure. <sup>8</sup> Sensitive to a component of Conquest LQ (Conquest 480) and may be injured if planted in soil treated with Conquest LQ during the year of application or the following crop year. <sup>9</sup> Fall seeded or seeded as a cover crop can be injured when seeded within the same season as the application of a component of Conquest LQ (Conquest 480). <sup>10</sup> If using for perennial rosette control in summerfallow or perennial weed control in summerfallow and stubble, refer to the label for recropping restrictions. <sup>11</sup> Roundup Ready 2 Xtend® soybeans and XtendFlex® soybeans only. <sup>12</sup> All crops can be planted the second spring after application. <sup>13</sup> A second application of the product cannot be made in the rescue crop. <sup>14</sup> Rate restrictions apply. Soybeans can only be grown as plant back crops provided that a maximum use rate of 73 ml/ha was used in the previous crop. <sup>15</sup> For mineral soil, if applied to muck soils, a field bioassay must be done. <sup>16</sup> Inbred lines grown in Southern Ontario only. <sup>17</sup> Not grown for seed. <sup>18</sup> 22 months at the 1.1 L/ha rate, 11 months for lower rates. <sup>19</sup> 22 months for peppers and onions at 1.1 L/ha and 0.73 L/ha rate. <sup>20</sup> Information obtained from labels of solo atrazine products available for purchase by growers as of the publication date of this guide. <sup>21</sup> See label for crop dependent restrictions. <sup>22</sup> Seeding alfalfa. <sup>23</sup> At the total seasonal rate of 120-240 ml/ha.



# Mixing order for tank mixes.

Ensure tank-mix compatibility by using the proper mixing order:



## Wettable powders, flowable

Distinct® herbicide, Optill® herbicide, Serifel® fungicide



## Agitate<sup>1</sup>, Anti-foaming compounds, buffers

<sup>1</sup> Do not over-agitate at any point in the process.



## Microcapsule suspension

Prowl® H2O herbicide



## Liquid and soluble

Armezon® herbicide, Basagran® Forte herbicide, Caramba® fungicide, Cevya® fungicide, Cimegra® insecticide, Clean Sweep® herbicide, Conquest® LQ herbicide, Cotegra® fungicide, Engenia® herbicide, Eragon® LQ herbicide (component of Eragon Plus), Forum® fungicide, Headline® AMP fungicide, Ignite® herbicide, Liberty® 200 SN herbicide, Marksman® herbicide, Priaxor® fungicide, Pursuit® herbicide, Sercadis® fungicide, Titan® insecticide, Veltyma® fungicide, Veltyma DLX fungicide, Zampro® fungicide, Zidua® SC herbicide



## Emulsifiable concentrates

Armezon PRO herbicide, Frontier® Max herbicide, Headline fungicide, Integrity® herbicide, Poast® Ultra herbicide, Sefina® insecticide, Select® herbicide, Sphaerex® fungicide



## Glyphosate

(high load, containing adjuvant)



## Surfactants

Merge® adjuvant

Always remember:

# W.A.M.L.E.G.S.

Always consult the label prior to mixing.

### TECH TIP

*WAMLEGS does not apply when tank mixing Select herbicide with Liberty 200 SN herbicide in LibertyLink® canola. The following order should be used:*

- |                      |                   |
|----------------------|-------------------|
| 1. Ammonium sulphate | 3. Liberty 200 SN |
| 2. Amigo® adjuvant   | 4. Select         |

**Click here** for more details.

# Big operation? Get it in bulk.

Explore our bulk packaging options for select products this season. Designed for mobility and ease of storage, our totes, shuttles and drums are convenient solutions for high-volume users.

## Totes:

Available products	Volume	Acres/tote
<b>Integrity®</b> Powered by <b>Kixor®</b> Herbicide	450 L	1,010 to 1,525 (corn rate) 3,000 (soybean rate)
<b>Liberty® 200 SN</b> Herbicide	400 L	400 <sup>1</sup>
<b>Marksman®</b> Herbicide	450 L	247 to 444
<b>Merge®</b> Surfactant	400 L	Rate will vary depending on tank mix
<b>Prowl® H2O</b> Herbicide	450 L	506 (soybean rate)

## Shuttles:

Available products	Volume	Acres/shuttle
<b>Armezon® PRO</b> Herbicide	121.5 L	300
<b>Basagran® Forte</b> Herbicide	130 L	145 to 185
<b>Engenia™</b> Herbicide	121.2 L	150 to 600
<b>Sphaerex®</b> Fungicide	138 L	640



450 L Tote<sup>2</sup>



128 L Shuttle

## Drums:

Available products	Volume	Acres/drum
<b>Ignite®</b> Herbicide	100 L	50 to 100
<b>Teraxxa® F4</b> Seed Treatment	120 L	300 ml per 100 kg seed

## TECH TIP

*When using a pump with any bulk containers, ensure the pump is calibrated and properly agitate prior to use. Refer to product label or speak to your BASF AgSolutions® Retail Representative for more information.*

**Submit all bulk orders to BASF retailers by December 1, 2023.**

For more information about products available in totes, shuttles and drums, or if you have full/partial totes left over at the end of the season, contact your BASF **AgSolutions** Retail Representative or call **AgSolutions** Customer Care at 1-877-371-BASF (2273).

<sup>1</sup> At the 1.0 L/ac (2.5 L/ha) rate.

<sup>2</sup> Image shown is not representative of the totes for Liberty® 200 SN herbicide and Merge® surfactant.

# BASF Ag Rewards

## 2024 Eastern Canada Grower Program

For a quick way to calculate your possible rewards, visit our online rewards calculator at [agsolutions.ca/eastrewardscalculator](https://agsolutions.ca/eastrewardscalculator).



CORN

SOYBEANS

CEREALS

CANOLA

POTATOES

POST-HARVEST

RESOURCES

**Offer Period:**  
October 1, 2023 – September 30, 2024

To be eligible for the Baseline, Bonus and Elite Rewards, growers must purchase at least \$5,000 in BASF Crop Protection Products.<sup>1</sup> Purchases must include products from at least two segments, with a minimum of 40 acres from each segment.

1 Segment			2 Segment		3 Segment		4 Segment	5 Segment
Titan® insecticide	Integrity® herbicide	Eragon® Plus herbicide	Engenia®, Liberty® 200 SN and Marksman® herbicides	Basagran® Forte, Conquest® LQ and Pursuit® herbicides and Sefina® insecticide	Cimegra® insecticide	Armezon® PRO, Frontier® Max, Prowl® H2O and Zidua® SC herbicides and Forum® and Zampro® fungicides	Cevya®, Priaxor®, Veltyma® and Veltyma DLX fungicides	Cotegra®, Sercadis®, Serifel® and Sphaerex® fungicides

Baseline Rewards	Purchase from 4+ Segments	11%	11%	11%	11%	11%	11%	11%	11%
	Purchase from 3 Segments	5%	5%	5%	5%	5%	5%	5%	5%
	Purchase from 2 Segments	3%	3%	3%	3%	3%	3%	3%	3%

Bonus Rewards	Multiple Modes of Effective Action Offer <sup>2</sup> Purchase a minimum of 40 acres of any product or product combination from a minimum of two of the three segments. Segment 1 – Integrity / Eragon Plus Segment 2 – Engenia / Liberty 200 SN / Marksman Segment 3 – Armezon PRO, Frontier Max, Prowl H2O, Zidua SC, Forum and Zampro		Add 4%	Add 4%	Add 3%		Add 3%		
	Potato Protection Program <sup>2</sup> Purchase a minimum of 116 matching acres of Titan and Cimegra insecticides					Add 5%			
	Fungicide Bonus <sup>2</sup> Purchase a minimum of 200 acres from any product (or combination of products) in Segment 4 and/or Segment 5							Add 3%	Add 3%
	Integrity Bonus <sup>2</sup> Purchase a minimum of 160 acres of Integrity herbicide		Add 7%						

MAXIMUM TOTAL SAVINGS	11%	22%	15%	14%	11%	16%	14%	14%	14%
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Elite Bonus Purchase \$100,000 or more of BASF products (including InVigor hybrid canola) and receive a 1% reward on all BASF Products (excluding InVigor)									
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<sup>1</sup> Qualifying BASF Crop Protection Products includes InVigor hybrid canola. In order for InVigor and Liberty 200 SN herbicide to qualify as a BASF Product, growers are required to sign, or have already signed, a Liberty and Trait Agreement (LTA), and operate in full compliance as per the requirements outlined within the signed LTA (see Section 5 of the Official Terms and Conditions for more details).

<sup>2</sup> See Section 5 of the Official Terms and Conditions on the pages to follow for additional details on the Bonus Rewards.



1. **Offer Period:** The 2024 Grower Rewards Program [(Eastern Canada)] (the "**Offer**") is administered by BASF Canada Inc. o/a BASF Canada ("**BASF**") and begins on October 1, 2023 at 7:00 a.m. Eastern Time ("**ET**") and ends on September 30, 2024 at 11:59 p.m. ET (the "**Offer Period**").
2. **Eligibility:** The Offer is open to Canadian growers who: (i) reside in Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador, Prince Edward Island, British Columbia (excluding the Peace River Region of British Columbia) and Quebec (each, an "**Eligible Territory**"); (ii) are the owner, operator or designated representative of a farm located in an Eligible Territory (the "**Farm**"); and (iii) have reached the legal age of majority in their province of residence (each, an "**Eligible Participant**"). These Official Terms and Conditions (the "**Terms**") govern this Offer and must be followed by all Eligible Participants at all times. By agreeing to participate in the Offer, each Eligible Participant is signifying his/her agreement to unconditionally comply with, and be legally bound by, these Terms. This Offer is not available to buying groups, relationship groups (including but not limited to any BASF reward group) or any individual or entity other than an Eligible Participant as defined above.

Note: BASF will grandfather in any buying group that existed prior to October 1, 2020. BASF will consider family relationships going forward if the family relationship is a direct family relationship: immediate family member (spouse, mother, stepmother, father, step father, grandparent, step grandparent, sister, half-sister, step sister, brother, half-brother, step brother or children, step children, grandchildren, step grandchildren).

3. **How to Qualify for the Offer:** To qualify for the Offer, an Eligible Participant must fully comply with these Terms (as determined by BASF in its sole and absolute discretion) and must, during the Offer Period, make purchases from an authorized retailer located in an Eligible Territory that consists of \$5,000 CAD or more (exclusive of fees and taxes, calculated using the Suggested Retail Price ("**SRP**"), of the following BASF Products (the "**BASF Product(s)**"):
  - **Herbicides:** ARMEZON®, ARMEZON PRO, ASSIGNMENT®, BASAGRAN®, BASAGRAN FORTE, CLEAN SWEEP®, CONQUEST® LQ, DISTINCT®, ENGENIA®, ERAGON® LQ, ERAGON PLUS, FRONTIER® MAX, INTEGRITY®, LIBERTY® 200 SN, MARKSMAN®, OPTILL®, OUTLOOK®, POAST® ULTRA, PROWL® H2O, PURSUIT®, SELECT® and ZIDUA® SC
  - **Fungicides:** ACROBAT®, CARAMBA®, CEVYA®, COTEGRA®, FORUM®, HEADLINE®, HEADLINE AMP, LANCE®, PRIAXOR®, SERCADIS®, SERIFEL®, SPHAEREX®, TWINLINE®, VELTYMA®, VELTYMA DLX and ZAMPRO®
  - **Seed:** INVIGOR® HYBRID CANOLA
  - **Insecticides:** CIMEGRA®, SEFINA® and TITAN®

For information on the SRP of the BASF Products listed in these Terms, please contact your authorized retailer located in an Eligible Territory.

To confirm whether a retailer is an authorized retailer of BASF products, please call us toll-free at 1-877-371-BASF (2273).

All decisions regarding whether or not an Eligible Participant has qualified for the Offer will be made by BASF in its sole and absolute discretion and shall be considered to be final and binding without right of appeal.

Additionally, Eligible Participants must earn a minimum Total Reward (as defined by Section 8 below) of \$50 CAD to qualify for the Offer.

4. **How to Qualify for a Baseline Reward:** To be eligible to earn a Baseline Reward (a "**Baseline Reward**"), an Eligible Participant must: (i) qualify for the Offer in accordance with Section 3; and (ii) purchase (from an authorized retailer located in an Eligible Territory) a minimum of forty (40) acres (unless otherwise specified herein) of qualifying reward products (each a "**Qualifying Reward Product**") in any two (2) or more of the five (5) BASF segments (each, a "**Segment**") as set-out below. For the avoidance of any doubt: (i) there is a minimum purchase threshold of forty (40) acres (unless otherwise specified herein) Qualifying Reward Products per Segment; and (ii) an Eligible Participant must purchase Qualifying Reward Products from at least two (2) Segments. The percentage of the Baseline Reward that an Eligible Participant is eligible to receive off the SRP, exclusive of taxes, will be determined as follows:

(See details for minimum purchase threshold)	Segment 1			Segment 2		Segment 3		Segment 4	Segment 5
	Titan insecticide	Integrity herbicide	Eragon Plus herbicide	Engenia, Liberty 200SN and Marksman herbicides	Basagran Forte, Conquest LQ and Pursuit® herbicides and Sefina insecticide	Cimegra insecticide	Armezon PRO, Frontier Max, Prowl H2O and Zidua SC herbicides and Forum and Zampro fungicides	Cevya, Priaxor, Veltyma and Veltyma DLX fungicides	Cotegra, Sericadil Serifel and Sphaerex fungicides
Purchase from 4+ Segments	11%	11%	11%	11%	11%	11%	11%	11%	11%
Purchase from 3 Segments	5%	5%	5%	5%	5%	5%	5%	5%	5%
Purchase from 2 Segments	3%	3%	3%	3%	3%	3%	3%	3%	3%

\* For Pursuit herbicide in Segment 2, a minimum purchase of 39 acres will satisfy the minimum purchase threshold of Qualifying Reward Products for Segment 2.

The following table shows the BASF brand to which each Qualifying Reward Product belongs. Each Qualifying Reward Product shown in this table will each count as one (1) Qualifying Reward Product for the purposes of this Offer:

BASF Brands	Qualifying Reward Product	BASF Brands	Qualifying Reward Product
ACROBAT, FORUM	FORUM	FRONTIER MAX, OUTLOOK	FRONTIER MAX
LANCE, COTEGRA	COTEGRA	HEADLINE, HEADLINE AMP, TWINLINE	VELTYMA
ERAGON LQ, ERAGON, ERAGON PLUS, OPTILL	ERAGON PLUS	CARAMBA, SPHAEREX	SPHAEREX

5. **How to Qualify for a Bonus Reward:** An Eligible Participant who qualifies for the Offer in accordance with Section 3 and for a Baseline Reward in accordance with Section 4 is eligible to earn one (1) or more bonus rewards (each, a "**Bonus Reward**"), as follows:

Bonus Reward	Requirements to Qualify: NOTE: All orders/purchases outlined herein must be made through an authorized retailer located in an Eligible Territory. All Bonus Rewards are calculated using the SRP.	Bonus Reward	Requirements to Qualify: NOTE: All orders/purchases outlined herein must be made through an authorized retailer located in an Eligible Territory. All Bonus Rewards are calculated using the SRP.
Multiple Modes of Effective Action Reward	To qualify, during the Offer Period an Eligible Participant must purchase a minimum of forty (40) acres of any BASF Product or combination of BASF Products from a minimum of 2 segments in Segments 1, 2 & 3. See chart below for additional details.	Fungicide Reward	To qualify, during the Offer Period an Eligible Participant must purchase a minimum of two hundred (200) acres of BASF Products or a combination of any BASF Products within Segments 4 and/or 5
Potato Protection Reward	To qualify, during the Offer Period an Eligible Participant must purchase a minimum of one hundred and sixteen (116) matching acres of Titan and Cimegra insecticides	Integrity Reward	To qualify, during the Offer Period an Eligible Participant must purchase a minimum of one hundred and sixty (160) acres of Integrity herbicide

#### IMPORTANT NOTE REGARDING INVIGOR

In order for Invigor® hybrid canola to qualify as a BASF Product, the Eligible Participant must sign, have in full force and effect and continuously comply with the Liberty® and Trait Agreement (the "**LTA**") respecting the purchase and use of LibertyLink® Seed (as those terms are defined in the LTA). This Offer is void on all products if any products are used on seed, or plants grown from seed, derived from certified Invigor hybrid canola seed or if Invigor or Liberty 200 SN herbicide is used contrary to the LTA.

To obtain information about the LTA, and/or to complete an LTA, Eligible Participants should call **AgSolutions®** Customer Care at 1-877-371-BASF (2273) or email [bASF@bASF-agsolutions.ca](mailto:bASF@bASF-agsolutions.ca). Signed LTA Forms must be promptly submitted by the Eligible Participant's authorized retailer located in an Eligible Territory either by mail, fax or online via BASF's Secure Retail Website.

The percentage of the Bonus Reward(s), if any, that will be added to an Eligible Participant's Baseline Reward will be determined as follows:

	(See details for minimum purchase threshold)	Segment 1			Segment 2		Segment 3		Segment 4	Segment 5
		Titan insecticide	Integrity herbicide	Eragon Plus herbicide	Engenia, Liberty 200SN and Marksman herbicides	Basagran Forte, Conquest LQ and Pursuit® herbicides and Sefina insecticide	Cimegra insecticide	Armezon PRO, Frontier Max, Prowl H2O and Zidua SC herbicides and Forum and Zampro fungicides	Cevya, Priaxor, Veltyma and Veltyma DLX fungicides	Cotegra, Sercadis Serifel and Sphaerex fungicides
Baseline Rewards	Purchase from 4+ Segments	11%	11%	11%	11%	11%	11%	11%	11%	11%
	Purchase from 3 Segments	5%	5%	5%	5%	5%	5%	5%	5%	5%
	Purchase from 2 Segments	3%	3%	3%	3%	3%	3%	3%	3%	3%
Bonus Rewards	Multiple Modes of Effective Action Reward		4%	4%	3%			3%		
	Potato Protection Reward						5%			
	Fungicide Reward								3%	3%
	Integrity Reward		7%							
	Max Total Savings	11%	22%	15%	14%	11%	16%	14%	14%	14%

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 160 acres of Integrity + 100 acres of Marksman + 200 acres of Veltyma DLX, the Eligible Participant would be eligible for:

- 5% Baseline Reward on each of Integrity, Marksman and Veltyma DLX;
- 4% Multiple Mode of Effective Action Reward on Integrity and 3% Multiple Mode of Effective Action Reward on Marksman;
- 3% Fungicide Reward on Veltyma DLX; and
- 7% Integrity Reward on Integrity.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 100 acres of Eragon Plus + 100 acres of Engenia, the Eligible Participant would be eligible for:

- 3% Baseline Reward on each of Eragon Plus and Engenia; and
- 4% Multiple Mode of Effective Action Reward on Eragon Plus and 3% Multiple Mode of Effective Action Reward on Engenia.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 200 acres of Integrity, the Eligible Participant would not be eligible for a Baseline Reward, nor any Bonus Reward(s).

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 132 acres (3 cases) of Titan + 180 acres (3 cases) of Cimegra + 320 acres (4 cases) of Cevya, the Eligible Participant would be eligible for:

- 5% Baseline Reward on each of Titan, Cimegra and Cevya;
- 5% Potato Protection Reward on Cimegra; and
- 3% Fungicide Reward on Cevya.

6. **How to Qualify for an Elite Reward:** An Eligible Participant who (i) qualifies for the Offer in accordance with Section 3; (ii) qualifies for a Baseline Reward in accordance with Section 4; and (iii) makes purchases during the Offer Period from an authorized retailer located in an Eligible Territory that consist of \$100,000 CAD or more (exclusive of fees and taxes) of BASF Products is eligible to earn an additional reward related to all Elite Qualifying Products (as defined below) purchased by the Eligible Participant from an authorized retailer located in an Eligible Territory during the Offer Period (the **"Elite Reward"**). The value of the Elite Reward is calculated as 1% of the SRP (exclusive of fees and taxes) of the Elite Qualifying Products purchases which qualify for the Elite Reward (the **"Elite Reward Percentage Value"**). The following are each an Elite Qualifying Product (the **"Elite Qualifying Products"**):
- a. **Herbicides:** ARMEZON, ARMEZON PRO, ASSIGNMENT, BASAGRAN, BASAGRAN FORTE, CLEAN SWEEP, CONQUEST LQ, DISTINCT, ENGENIA, ERAGON PLUS, FRONTIER MAX, INTEGRITY, LIBERTY 200 SN, MARKSMAN, OPTILL, OUTLOOK, POAST ULTRA, PROWL H2O, PURSUIT, SELECT and ZIDUA SC
- b. **Fungicides:** ACROBAT, CANTUS®, CARAMBA, CEVYA, COTEGRA, FORUM, HEADLINE, HEADLINE AMP, LANCE, PRIAXOR, SERCADIS, SERIFEL, SPHAEREX, TWINLINE, VELTYMA, VELTYMA DLX and ZAMPRO
- c. **Insecticides:** CIMEGRA, SEFINA and TITAN
7. **Reward Percentage Value and Bonus Reward Calculation:** BASF will determine the reward percentage value (the **"Reward Percentage Value"**) that an Eligible Participant is eligible to receive pursuant to these Terms. The Reward Percentage Values outlined in Sections 4, 5 and 6 represent the percentage that BASF will use to calculate the amount of the Baseline Reward (and, as applicable, Bonus Reward(s) and Elite Reward) (collectively, the **"Total Reward on Qualifying Reward Products"**) that an Eligible Participant is eligible to receive as a reward, exclusive of taxes, on each case of the applicable Qualifying Reward Product(s) purchased in accordance with these Terms. The Elite Bonus Reward outlined in Section 6 represents the percentage that BASF will use to calculate the amount that an Eligible Participant is eligible to receive as a reward, exclusive of taxes, on each case of the applicable Elite Qualifying Products purchased in accordance with these Terms (the **"Total Reward on Elite Qualifying Products"**).
8. The calculation of Total Reward on Qualifying Reward Products and the Total Reward on Elite Qualifying Products (collectively, the **"Total Reward"**) will be based on SRP in the Eligible Territories multiplied by the corresponding Reward Percentage Values and Elite Reward Percentage Value for the applicable Qualifying Reward Products and Elite Qualifying Products, respectively. Retailers have complete autonomy to determine the resale pricing for the products described herein and may choose to sell such products at prices which are different from those suggested by BASF. Total Rewards will be calculated on a per acre basis, using all Qualifying Reward Products and Elite Qualifying Products purchased, including partial cases.
- Prior to qualifying for the Offer, the Eligible Participant will be required to accept and agree to be legally bound by these Terms. In addition, the Eligible Participant will have the opportunity to agree to the terms and conditions contained within the BASF Grower Privacy Consent and the BASF Commercial Electronic Messages Consent (collectively, the **"Consent Forms"**). Copies of the Consent Forms can be obtained by contacting AgSolutions Customer Care at 1-877-371-BASF (2273). An Eligible Participant may subsequently withdraw his/her consent to receive electronic communications at anytime without affecting their eligibility for this Offer.
- If an Eligible Participant completes all of the foregoing steps in accordance with these Terms (as determined by BASF in its sole and absolute discretion), then the Eligible Participant will be eligible to qualify for the Offer and to receive a Total Reward. **There is a limit of one (1) Total Reward per Farm.**
9. **Products and Related Conditions:** For the purposes of the Offer, the BASF Products will have the following label rates:

Qualifying Product	Application Rate <sup>†</sup>	Unit Size	Acres/ Unit	Qualifying Product	Application Rate <sup>†</sup>	Unit Size	Acres/ Unit	Qualifying Product	Application Rate <sup>†</sup>	Unit Size	Acres/ Unit
ACROBAT		Case	80	ERAGON		Case	120	PRIAXOR		Case	160
ARMEZON		Case	160	ERAGON LQ		Case	160	PROWL H2O		Case	20
ARMEZON PRO		Case	40	ERAGON PLUS		Case	40	PURSUIT		Case	39
BASAGRAN		Jug	13	FORUM		Case	50	SEFINA		Case	80
BASAGRAN FORTE		Case	29	FRONTIER MAX		Case	60	SELECT		Case	60
BANVEL II		Case	40	HEADLINE AMP		Case	40	SERCADIS		Case	20
CANTUS		Case	160	INTEGRITY		Case	60	SERIFEL		Case	60
CARAMBA		Case	40	INVIGOR HYBID CANOLA	10 acres	Bag	-	SPHAEREX		Case	80
CEVYA		Case	80	LANCE		Case	25	TITAN		Case	44
CIMEGRA		Case	60	LIBERTY 200 SN		Case	20	TWINLINE		Case	80
CLEAN SWEEP		Case	20	MARKSMAN		Case	20	VELTYMA		Case	80
CONQUEST LQ		Case	40	OPTILL		Case	120	VELTYMA DLX		Case	20
COTEGRA		Case	70	OUTLOOK		Case	52	ZAMPRO		Case	51
DISTINCT		Case	80	POAST ULTRA		Case	80	ZIDUA SC		Case	80
ENGENIA		Case	40								

† Seeding rate varies depending on variety and are subject to change, please visit [agsolutions.ca](https://www.basf.com/en/tools/legal/data-protection.html) for updates.

10. **Verification:** BASF reserves the right, in its sole and absolute discretion, to require proof of identity and/or eligibility (in a form acceptable to BASF): (i) for the purposes of verifying an Eligible Participant's eligibility to participate in this Offer; (ii) for the purposes of verifying the legitimacy of any Data (as defined below in Section 12b), BASF Products/Qualifying Reward Products/Elite Qualifying Products and/or other information; and/or (iii) for any other reason BASF deems necessary, in its sole and absolute discretion, for the purposes of administering this Offer in accordance with BASF's interpretation of the letter and spirit of these Terms. Failure of an Eligible Participant to provide such proof of compliance with these Terms in writing to the complete

satisfaction of BASF may result in disqualification in the sole and absolute discretion of BASF. All determinations regarding whether or not an Eligible Participant is eligible to earn a Total Reward in accordance with these Terms (and, if so, the amount of such Total Reward) will be made by BASF in its sole and absolute discretion. If it is discovered by BASF that any Eligible Participant (or any person or entity purporting to be an Eligible Participant) has attempted to use multiple names, multiple identities and/or any other means not expressly sanctioned by these Terms to participate in or disrupt this Offer, then he/she may be disqualified from the Offer in the sole and absolute discretion of BASF.

11. **Notification and Confirmation:** If an Eligible Participant has been deemed by BASF in its sole and absolute discretion, to be eligible to qualify for the Offer and to receive a Total Reward, then the Eligible Participant may be notified by a representative of BASF. If an Eligible Participant: (i) cannot accept (or is unwilling to accept) the Total Reward for any reason; and/or (ii) is determined to be in violation of BASF's interpretation of the letter and/or spirit of these Terms (all as determined by BASF in its sole and absolute discretion); then the Total Reward shall, in the sole and absolute discretion of BASF, be forfeited in its entirety and the Eligible Participant will be disqualified from participating in the Offer.
12. **Additional Conditions:**
- a. This Offer does not apply to any Elite Qualifying Products and/or Qualifying Reward Products and/or BASF Products that are returned for any reason whatsoever or for any Elite Qualifying Products and/or Qualifying Reward Products and/or BASF Products purchased for resale.
- b. Retailers are required to submit customer transactional data relating to orders and purchase transactions (the **"Data"**) on behalf of Eligible Participants to BASF. Offer eligibility will be determined by BASF, in its sole and absolute discretion, using this Data. All Data must be submitted by the retailer to BASF by no later than **October 9, 2024** in order for such Data to be eligible for the purposes of this Offer.
- c. If an Eligible Participant who has earned a Total Reward pursuant to this Offer returns any BASF Products/Qualifying Reward Products/Elite Qualifying Products to a retailer after September 30, 2024, then the Eligible Participant shall be required to promptly return or repay the value of the Total Reward (or the applicable portion of the Total Reward) by contacting **AgSolutions** Customer Care at 1-877-371-BASF (2273). Failure to do so will result in a deduction from the Eligible Participant's future year's program reward(s). BASF also reserves the right to seek remedies and damages to the fullest extent permitted by law.
13. **General Conditions:** Please allow a minimum of eight (8) weeks for the Total Reward to be received from the time the Data is sent to BASF by a retailer. All Data is subject to verification and will be considered void if it cannot be verified to the complete satisfaction of BASF. The Total Reward must be accepted as awarded and is not transferable or assignable. BASF reserves the right, in its sole and absolute discretion, to substitute the Total Reward or a component thereof with a reward of equal or greater retail value.
14. This Offer is subject to all applicable federal, provincial and municipal laws. This Offer is void where prohibited or restricted by law. The decisions of BASF with respect to all aspects of this Offer are final and binding on all Eligible Participants without right of appeal.
15. BASF, its parent companies, associated and affiliated companies, agent suppliers, advertising/promotion agencies and any other entity involved in the development, production, administration or fulfillment of the Offer, and each of their respective officers, directors, employees, agents, representatives, successors and assigns (collectively, the **"Released Parties"**) will not be liable for: (i) any late, lost, misdirected, delayed, incomplete, incompatible or misdirected Data and/or other information (all of which is void); (ii) any failure(s), malfunction(s) or other problem(s) of any nature whatsoever; (iii) the failure of any order, purchase transaction, Data and/or other element(s) of this Offer to be received, captured or recorded for any reason whatsoever; (iv) anyone being incorrectly and/or mistakenly identified as an Eligible Participant, a Total Reward recipient or eligible Total Reward recipient; and/or (v) any combination of the above.
16. BASF reserves the right, in its sole and absolute discretion, to withdraw, suspend or amend this Offer in any way, or to amend these Terms in any way, without prior notice or obligation, in the event of: (i) any cause beyond the reasonable control of BASF that interferes with the proper conduct of this Offer as contemplated by these Terms, including, without limitation, any error, problem, tampering, unauthorized intervention, fraud or failure of any kind whatsoever; (ii) any accident, printing, administrative, or other error of any kind; and/or (iii) for any other reason that BASF deems necessary, in its sole and absolute discretion, to ensure that this Offer is conducted in accordance with BASF's interpretation of the letter and spirit of these Terms. Any attempt to undermine the legitimate operation of this Offer in any way (as determined by BASF in its sole and absolute discretion) may be a violation of criminal and civil laws and should such an attempt be made, BASF reserves the right to seek remedies and damages to the fullest extent permitted by law.
17. BASF reserves the right to require that an Eligible Participant sign BASF's form of declaration and release form prior to being confirmed as the recipient of the Total Reward.
18. By participating in this Offer and accepting the Total Reward, each Eligible Participant (i) confirms compliance with these Terms; (ii) acknowledges acceptance of the Reward (as awarded); and (iii) releases the Released Parties from any and all liability in connection with this Offer, the Eligible Participant's participation herein and/or the awarding and use/misuse of the Total Reward or any portion thereof.
19. If an Eligible Participant who is eligible to receive a Total Reward is deemed to be in violation of these Terms (as determined by BASF in its sole and absolute discretion), then the Eligible Participant may, in the sole and absolute discretion of BASF, be disqualified (and, if disqualified, will forfeit all rights to the Total Reward).
20. BASF reserves the right, in its sole and absolute discretion, to adjust any of the dates, timeframes and/or other Offer mechanics stipulated in these Terms, to the extent deemed necessary by BASF, for purposes of verifying compliance by any Eligible Participant or other information with these Terms, or as a result of any problems, or in light of any other circumstances which, in the opinion of BASF, in its sole and absolute discretion, affect the proper administration of the Offer as contemplated in these Terms, or for any other reason.
21. In the event of any discrepancy or inconsistency between the terms and conditions of these Terms and disclosures or other statements contained in any Offer-related materials and/or any instructions or interpretations of these Terms given by any representative of BASF, the terms and conditions of these Terms shall prevail, govern and control to the fullest extent permitted by law.
22. By participating in this Offer, each Eligible Participant expressly consents to BASF, its agents and/or representatives, storing, collecting, sharing and using any personal information submitted for the purpose of administering the Offer, managing, fulfilling and improving the offer and in accordance with BASF's privacy policy (<https://www.basf.com/en/tools/legal/data-protection.html>). This section does not limit any other consent(s) that an individual may provide to BASF or others in relation to the collection, use and/or disclosure of their personal information.
23. BASF reserves the right, in its sole and absolute discretion, to take whatever measures or actions it deems necessary to help ensure that the Offer is administered in accordance with BASF's interpretation of the letter and spirit of these Terms. **ANY INDIVIDUAL OR ENTITY DEEMED BY BASF AT ANY TIME TO BE IN VIOLATION OF BASF'S INTERPRETATION OF THE LETTER AND/OR SPIRIT OF THESE TERMS FOR ANY REASON WHATSOEVER IS SUBJECT TO DISQUALIFICATION IN THE SOLE DISCRETION OF BASF.**
24. The invalidity or unenforceability of any provision of these Terms shall not affect the validity or enforceability of any other provision. In the event that any provision is determined to be invalid or otherwise unenforceable or illegal, these Terms shall otherwise remain in effect and shall be construed in accordance with the terms as if the invalid or illegal provision were not contained herein.
25. To the fullest extent permitted by applicable law, all issues and questions concerning the construction, validity, interpretation and enforceability of these Terms or the rights and obligations of Eligible Participants, BASF or any of the other Released Parties in connection with the Offer will be governed by and construed in accordance with the domestic laws of the Province of Ontario and the federal laws of Canada applicable therein, without giving effect to any choice of law or conflict of law rules or provisions that would cause the application of any other jurisdiction's laws. The parties hereby consent to the exclusive jurisdiction and venue of the courts located in Ontario in any action to enforce (or otherwise relating to) these Terms or relating to this Offer.
26. After having been presented with a French version of these Terms, and having had the opportunity to review same, the Parties affirm having expressly requested to receive, execute and be bound by the English version of these Terms and all ancillary documents relating thereto.

## Always read and follow label directions.

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**ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** It is a violation of federal law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba, glyphosate or glufosinate are approved for in-crop use with products with XtendFlex® Technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED AND APPROVED FOR SUCH USES. Contact the Pest Management Regulatory Agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or products with XtendFlex® Technology.

**Products with XtendFlex® Technology contains genes that confer tolerance to glyphosate, glufosinate and dicamba.** Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your Bayer retailer, refer to the Bayer Technology Use Guide, or call the technical support line at 1-888-283-6847 for recommended Roundup Ready® Xtend Crop System weed control programs.



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