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.
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, contacting your BASF AgSolutions® Retail Representative or by calling AgSolutions Customer Care at 1-877-371-BASF (2273).
Solutions for corn.

Crop Staging

PRE-PLANT

PRE-EMERGENCE

EMERGENCE

1st LEAF

2nd LEAF

3rd LEAF - V1

5th LEAF - V3

7th LEAF - V5

9th LEAF - V7

VEGETATIVE - V12

TASSEL - VT

SILKING - R1

MATURE - R6

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

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

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BASF lead recommendations.
Select the solution that’s right for your operation.

WEED MANAGEMENT

Integrity®
Herbicide

AND/OR

Zidua® SC
Herbicide

FOLLOWED BY

Marksman®
Herbicide

Armezon® PRO
Herbicide

DISEASE MANAGEMENT

Veltyma®
Fungicide

OR

Veltyma® DLX
Fungicide

POST-HARVEST

Distinct®
Herbicide

OR

Zidua® SC
Herbicide

Contact your BASF AgSolutions® Retail Representative for more information.

1 Can also be tank mixed with Integrity® herbicide or Zidua® SC herbicide if applied pre-emergence.
2 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

![Untreated vs. Integrity herbicide + glyphosate]
Source: Grower Applied Strip Trials, Middlesex County, ON, 2022, 5 weeks after treatment

Crop staging
- Pre-plant¹, pre-plant incorporated, pre-emergence

Weeds controlled²

**Broadleaf weeds**
- Common ragweed
- Eastern black nightshade³
- 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 nutsedge³

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

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

<table>
<thead>
<tr>
<th>Full rate⁴</th>
<th>Set-up rate⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity⁵</td>
<td>450 ml/ac (1.1 L/ha)</td>
</tr>
<tr>
<td>Integrity⁵</td>
<td>300 ml/ac (730 ml/ha)</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Integrity⁵</td>
<td>300 to 450 ml/ac (0.73 to 1.1 L/ha)</td>
</tr>
<tr>
<td>followed by</td>
<td>Glyphosate⁷ See label for rate</td>
</tr>
<tr>
<td>Marksman® herbicide</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
</tbody>
</table>

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

Active ingredients
- Saflufenacil – Group 14
- Dimethenamid-P – Group 15

Formulation
- Emulsifiable concentrate
- 2 x 9 L jugs
- Also available in 450 L tote

Notes:
- ¹ Apply in tank mix with glyphosate.
- ² Weeds listed are controlled when Integrity is applied at the full label rate of 450 ml/ac.
- ³ Pre-plant incorporated only.
- ⁴ Use full rate, tank mixed with glyphosate for early pre-plant.
- ⁵ Use full rate of Integrity alone for pre-plant incorporated and pre-emergent applications. ⁶ Integrity can be used with 28% UAN as a carrier for pre-plant incorporated and pre-emergent applications. ⁷ 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.
- ⁸ Glyphosate is sold separately.
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 PRO herbicide can also be applied in a tank mix with Marksman herbicide and glyphosate

**Crop staging**
Pre-emergence to 8 leaf
Emergence to 5 leaf (for tank mix)

**Weeds controlled**
- Broadleaf weeds
  - Common chickweed
  - Common ragweed
  - Eastern black nightshade
  - Green pigweed
  - Lady’s thumb
  - Lamb’s quarters
  - Redroot pigweed
  - Velvetleaf
  - Wild mustard
- Grasses
  - Barnyard grass
  - Crabgrass (large)
  - Fall panicum
  - 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.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armezon PRO</td>
<td>405 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Marksman</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
<tr>
<td>Armezon PRO</td>
<td>405 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Aatrex 480®</td>
<td>420 ml/ac (1.04 L/ha)</td>
</tr>
</tbody>
</table>

**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.

**Active ingredients**
- Dimethenamid-P – Group 15
- Topramezone – Group 27

**Formulation**
- Emulsifiable concentrate

**One case contains**
- 2 x 8.1 L jugs
- Also available in 121.5 L shuttle

1 Crop staging depends on labelled tank mix. 2 Weeds controlled when Armezon PRO is applied in a tank mix with atrazine (600 g ai/ha) and Merge® adjuvant or UAN plus Assist® adjuvant. 3 Suppression only. 4 Apply before fall panicum exceeds the 2 leaf growth stage. If applied later, this weed will only be suppressed. 5 Aatrex 480, glyphosate and Marksman are sold separately. 6 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.
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

**Crop staging**
Pre-plant\(^1\), pre-emergence, early post-emergence up to 4 leaf

**Weeds controlled**
**Broadleaf weeds**
Cleavers\(^2,3\), Common chickweed\(^2\), Eastern black nightshade\(^2,3\), Kochia\(^2,3\), Lamb’s quarters\(^2\), Palmer amaranth, Redroot pigweed, Shepherd’s-purse\(^2\), Waterhemp, Wild buckwheat\(^2\)

**Grasses**
Barnyard grass, Crabgrass (large), Downy brome\(^2\), Foxtail (giant, green, yellow), Japanese brome\(^2\), Ryegrass (Italian), Wild oats\(^2\)

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

<table>
<thead>
<tr>
<th>Rate by soil texture</th>
<th>Coarse</th>
<th>Medium-fine</th>
<th>Fine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organic matter ≤ 3%</td>
<td>3% &lt; Organic matter &lt; 7%</td>
<td></td>
</tr>
<tr>
<td>Zidua SC</td>
<td>101 ml/ac (250 ml/ha)</td>
<td>134 ml/ac (332 ml/ha)</td>
<td>169 ml/ac (417 ml/ha)</td>
</tr>
<tr>
<td></td>
<td>200 ml/ac (493 ml/ha)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tank mix**
Apply post-emergence up to 4 leaf

<table>
<thead>
<tr>
<th>Zidua SC</th>
<th>97 ml/ac (240 ml/ha)</th>
</tr>
</thead>
</table>

**Active ingredient**
Pyroxasulfone – Group 15

**Formulation**
Suspension concentrate

**One case contains**
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.

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

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

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

Weeds controlled
Buckwheat (tartary, wild), Canada thistle, Cleavers, Common cocklebur, Corn spurry, Cow cockle, Field bindweed, Green smartweed, Lady’s thumb, Lamb’s quarters, Mustard (hare’s-ear, Indian, tumble, wild, wormseed), Perennial sow thistle, Pigweed (redroot, Russian), Ragweed (common, false, giant), Spreading atriplex, Velvetleaf, Volunteer adzuki beans, Waterhemp

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.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marksman</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
<tr>
<td>Armezon PRO</td>
<td>405 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
<tr>
<td>Prowl H2O</td>
<td>890 ml/ac (2.2 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

Planned 2-pass
Marksman 1.0 L/ac (2.5 L/ha) Integrity 300 to 450 ml/ac (0.73 to 1.1 L/ha) followed by Marksman 1.0 L/ac (2.5 L/ha) Glyphosate 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 Marksmann herbicide to fields previously treated with atrazine can increase the risk of residue carryover to rotational crops. Follow cropping restrictions on atrazine label.

Active ingredients
Dicamba – Group 4
Atrazine – Group 5

Formulation
Suspension

One case contains
2 x 10 L jugs
Also available in 450 L tote

TECH TIP
Apply Marksmann 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.

1 Do not apply to sweet corn. 2 See label for rates. 3 Apply annually for three years at the flowering stage of bindweed and the budding stage of thistles. 4 Post-emergence only. Apply at cotyledon to 6 leaf stage of common cocklebur. 5 Including triazine-resistant biotypes. 6 Pre-emergence only. For post-emergent applications, apply at unifoliate to fourth trifoliate stage of weed. Suppression only when applied pre-emergence. 7 Post-emergence only. 8 Integrity® herbicide, Armezon PRO, Prowl® H2O herbicide and glyphosate are sold separately. 9 Use only glyphosate products present as isopropylamine salt or potassium salt. Glyphosate rate is 364 g a.e./ac (800 g a.e./ha), see glyphosate label for corresponding product use rate.

Source: BASF Small Plot Trials, Maryhill, ON, 2015
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®
- Proven Plant Health Benefits for increased growth efficiency, better management of minor stress and greater yield potential
- Delivers preventative and post-infection activity

Crop staging
V12 to silk browning

Diseases controlled
- 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.

Veltyma fungicide

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.

Active ingredients
- Mefentrifluconazole – Group 3
- Pyraclostrobin – Group 11

Formulation
Suspension concentrate

One case contains
2 x 8.1 L jugs

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.

Increased yield potential with Veltyma compared to untreated

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

Yield (bu/ac)
-10
-20
0
10
20
30
40
50

Increase in yield compared to untreated
Average

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

1 Plant Health Benefits refer to products that contain the active ingredient pyraclostrobin.
2 All comparisons are to untreated, unless otherwise stated.
3 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 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
- Multiple modes of effective action for improved disease control and resistance management
- Reduces deoxynivalenol (DON) contamination to preserve grade quality

**Crop staging**
Full silking to silk browning

**Diseases controlled**
- Common rust (Puccinia sorghi)
- Eyespot (Aureobasidium zeae)
- Fusarium ear rot (Fusarium graminearum)
- Gibberella ear rot (Gibberella zeae)
- Grey leaf spot (Cercospora zeae-maydis)
- Northern corn leaf blight (Setosphaeria turcica)
- Tar spot (Phyllachora maydis)

**Application rates**
One case treats 20 acres.

<table>
<thead>
<tr>
<th></th>
<th>Veltyma</th>
<th>Caramba</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Veltyma</strong></td>
<td>202 ml/ac (500 ml/ha)</td>
<td></td>
</tr>
<tr>
<td><strong>Caramba</strong></td>
<td>405 ml/ac (1.0 L/ha)</td>
<td></td>
</tr>
</tbody>
</table>

**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.

**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

**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.

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

1 All comparisons are to untreated, unless otherwise stated.
2 Suppression only.
## Identifying corn diseases.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Visual symptoms</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracnose leaf blight</td>
<td>• Oval lesions about 15 mm in length&lt;br&gt;• Centre is tan-brown with reddish, purplish, brownish or yellowish border&lt;br&gt;• Disease progresses from the bottom and moves upwards&lt;br&gt;• Top die-back can occur after silking</td>
<td><img src="589x86.jpg" alt="Image 1" /></td>
</tr>
<tr>
<td>Common rust</td>
<td>• Small, elliptical, reddish-brown pustules that can be seen on leaves, husks and stalks&lt;br&gt;• Spores become black as they mature&lt;br&gt;• In severe cases there can be some necrosis around the spores&lt;br&gt;• Spores can easily be rubbed off</td>
<td><img src="589x86.jpg" alt="Image 2" /></td>
</tr>
<tr>
<td>Eyespot</td>
<td>• Round lesions that are 2-5 mm in diameter&lt;br&gt;• Centre of the lesions are usually tan with a brown margin&lt;br&gt;• Lesions are surrounded by yellow halo</td>
<td><img src="589x86.jpg" alt="Image 3" /></td>
</tr>
<tr>
<td>Grey leaf spot</td>
<td>• Short and narrow rectangular lesions parallel to the leaf veins appear on lower leaves after tasseling&lt;br&gt;• Lesions range from tan to grey as the disease progresses</td>
<td><img src="589x86.jpg" alt="Image 4" /></td>
</tr>
<tr>
<td>Northern corn leaf blight</td>
<td>• Long, elliptical (cigar-shaped) lesions that are tan or grey&lt;br&gt;• Lesions tend to appear on lower leaves first&lt;br&gt;• Black spores can be found on the lesions when conditions are moist&lt;br&gt;• When severe infection occurs, the lesions can coalesce and lead to the death of the leaf</td>
<td><img src="589x86.jpg" alt="Image 5" /></td>
</tr>
<tr>
<td>Tar spot</td>
<td>• Small black spots that are raised and bumpy on both sides of the leaf&lt;br&gt;• Lesions can sometimes appear on the husks&lt;br&gt;• Spots can be surrounded by tan-brown lesions (halo) that have a darker outer border, which are referred to as fisheye lesions</td>
<td><img src="589x86.jpg" alt="Image 6" /></td>
</tr>
<tr>
<td>Gibberella ear rot</td>
<td>• The tip of the ear or an insect-caused wound are both entry points for the reddish-pink mold to grow&lt;br&gt;• The ear becomes spongy and can be covered in its entirety&lt;br&gt;• Husks become bleached and tightly bound to the cobs with some black fruiting bodies visible</td>
<td><img src="589x86.jpg" alt="Image 7" /></td>
</tr>
</tbody>
</table>

---

1 Source: Daren Mueller, Iowa State University, Bugwood.org. 2,3,4,5,6,7 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
Solutions for herbicide-tolerant soybeans.

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

1 Apply in tank mix with glyphosate and Merge® adjuvant.
2 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.
3 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.

SOYBEANS
Solutions for conventional/IP soybeans.

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

1 Apply in tank mix with glyphosate and Merge® adjuvant.
2 Frontier® Max herbicide can be applied at pre-plant incorporated to pre-emergence.
3 Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans.
BASF lead recommendations.

Select the solution that's right for your operation.

**CROP ESTABLISHMENT**

- Roundup Ready 2 Xtend® soybeans
- XtendFlex® soybeans
- Enlist E3™ soybeans
- Conventional/IP soybeans

**WEED MANAGEMENT**

- Integrity®
  - Powered by Kixor® Herbicide
  - **NEW**
- Eragon® Plus
  - Powered by Kixor® Herbicide
  - **NEW**
- Zidua® SC
- Engenia®

**FOLLOWED BY**

- Liberty® 200 SN
- Conquest LQ

Speak to your grain buyer first
Contact your BASF AgSolutions® Retail Representative for more information.
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**

**Active ingredient**
Fluopyram – Group 7

**Formulation**
Suspension

**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*)

**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

Talk to your seed treater about application.

**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.

**ILEVO yield benefit potential on soybeans**

- 84% positive, +4.7 bu/acre average with ILEVO

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
- 400 SU
  - 6.0 L inoculant bladder
  - 6.0 L conditioner bladder
  - 0.4 L Velondis Plus bottle

### 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.

| Nodulator IP Plus (inoculant + conditioner) | 130 ml
| Velondis Plus | 4.4 ml

### Improved nitrogen fixation

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.

1 Packaged separately.

2 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
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

**Crop staging**
Pre-plant, pre-emergence

**Weeds controlled**
Broadleaf plantain
Canada fleabane
Common ragweed
Dandelion
Giant ragweed
Lady's thumb
Lamb's quarters
Perennial sow thistle
Prickly lettuce
Redroot pigweed
Shepherd's-purse
Stinkweed
Wild buckwheat
Wild mustard

**Application rates**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>30 ml/ac (73 ml/ha)6</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

**Water volume**
Ground application
40 to 80 L/ac
(10 to 20 gal/ac)8

**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)

**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

1 Controlled with a tank mix of Eragon Plus and glyphosate for pre-plant and pre-emergent applications. 2 Includes glyphosate-resistant biotypes. 3 Suppression only. 4 Top growth burndown control only. 5 Top growth only. 6 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. 7 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. 8 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

Glyphosate

Integrity® herbicide + glyphosate + Merge® adjuvant

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

Active ingredients
- Saflufenacil – Group 14
- Dimethenamid-P – Group 15

Formulation
- Emulsifiable concentrate

One case contains
- 2 x 9 L jugs
- Also available in 450 L tote

Crop staging
Pre-plant¹, pre-emergence¹

Weeds controlled

Broadleaf weeds
- Broadleaf plantain
- Canada fleabane²
- Common ragweed²
- Dandelion³
- Giant ragweed
- Lady’s thumb
- Lamb’s quarters
- Perennial sow thistle⁴
- Prickly lettuce⁵
- Redroot pigweed
- Shepherd’s-purse
- Stinkweed
- Wild buckwheat
- Wild mustard

Grasses
- Barnyard grass⁶
- Crabgrass (large)⁶
- Foxtail (green, yellow)⁶

Application rates
One case treats 120 acres.
One tote treats 3,000 acres.

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity</td>
<td>150 ml/ac (370 ml/ha)</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

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.

¹ Apply in tank mix with glyphosate. Do not incorporate as injury may occur. ² Includes glyphosate-resistant biotypes. ³ Suppression only. ⁴ Top growth burndown control only. ⁵ Top growth only. ⁶ Early-season suppression. ⁷ Do not incorporate as injury may occur. ⁸ Glyphosate and Merge are not included in the case. See respective glyphosate label for application rate of glyphosate.
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

**Crop staging**
Pre-plant\(^2\), pre-emergence, early post-emergence up to 3\(^{rd}\) trifoliate

**Weeds controlled**

**Broadleaf weeds**
Cleavers\(^3,4\), Common chickweed\(^3\), Eastern black nightshade\(^3,4\), Kochia\(^3,4\), Lamb’s quarters\(^3\), Palmer amaranth, Redroot pigweed, Shepherd’s-purse\(^3\), Waterhemp, Wild buckwheat\(^3\)

**Grasses**
Barnyard grass, Crabgrass (large), Downy brome\(^3\), Foxtail (giant, green, yellow), Japanese brome\(^3\), Ryegrass (Italian), Wild oats\(^3\)

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

<table>
<thead>
<tr>
<th>Zidua SC</th>
<th>Rate by soil texture for residual control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coarse</td>
</tr>
<tr>
<td></td>
<td>Organic matter ≤ 3%</td>
</tr>
<tr>
<td>Pre-plant, pre-emergence</td>
<td>101 ml/ac (250 ml/ha)</td>
</tr>
<tr>
<td>Early post-emergence</td>
<td>73 to 97 ml/ac (180 to 240 ml/ha)</td>
</tr>
</tbody>
</table>

**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\(^6\), sunflowers\(^5\)

1 Talk to your grain buyer regarding maximum residue limits for markets around the world before applying to conventional or IP soybeans. 2 Up to 30 days before planting. 3 Early-season residual suppression only when the application rate is 120 to 180 ml/ha. 4 Including Group 2-resistant biotypes. 5 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.

- 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)

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

Weeds controlled
- Buckwheat (tartary, wild), Canada fleabane, Canada thistle, Cleavers, Common chickweed, Corn spurry, Cow cockle, Eastern black nightshade, Field bindweed, Green smartweed, Hairy nightshade, Kochia, Lady's thumb, Lamb's quarters, Mustards (including wild), Narrow-leaved hawk's beard, Perennial sow thistle, Ragweed (common, false, giant), Redroot pigweed, Russian pigweed, Velvetleaf, Volunteer canola

Application rates
- One case treats 40 to 80 acres.
- One shuttle treats 300 to 600 acres.

Water volume
- Ground application: Minimum 40 L/ac (10 gal/ac)
- Use a higher water volume to ensure adequate coverage.

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.

Active ingredient
- Dicamba – Group 4

Formulation
- Solution

One case contains
- 2 x 8.09 L jugs
- Also available in 121.2 L shuttle

For use on:
- Roundup Ready 2 Xtend® Soybeans
- XtendFlex® Soybeans
- All other soybean platforms

Engenia Application Rates

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate (ml/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engenia</td>
<td>200 to 400 (0.5 to 1.0 L/ha)</td>
</tr>
</tbody>
</table>

1 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. 2 For a complete list of proper weed staging, please refer to the product label. 3 Controlled by Engenia alone at 283 to 400 ml/ac (0.7 to 1.0 L/ha). 4 Post-emergence only. 5 Apply Engenia herbicide annually for three years at the flowering stage of bindweed and the budding stage of thistles. 6 Suppression only. 7 Including Group 2-resistant biotypes. 8 When Engenia is applied at 283 to 400 ml/ac (0.7 to 1.0 L/ha). 9 Including biotypes resistant to Group 2 and 9 chemistries. 10 Including conventional, Roundup Ready® and LibertyLink® cultivars, when Engenia is applied at 400 ml/ac (1.0 L/ha). 11 Engenia can be used alone or in tank mix with glyphosate for additional broadleaf and grassy weed control. See label for important details. 12 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. 13 For application to XtendFlex® and Roundup Ready 2 Xtend® soybeans, apply Engenia using nozzles that deliver extremely coarse to ultra-coarse spray droplets. 14 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. 15 793 ml/ac (1.96 L/ha) of Engenia is the maximum total to be applied in a single growing season. 16 See label for water application rate.
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.*
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.¹

1. Go to [www.engeniaspraytool.ca](http://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.

¹ 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.

### Summary

<table>
<thead>
<tr>
<th>Conditions Index</th>
<th>Conditions are favorable for an Engenia application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

### Hourly forecast - 2023-05-25

<table>
<thead>
<tr>
<th>Time</th>
<th>Conditions</th>
<th>Probability</th>
<th>Inversion Potential</th>
<th>Conditions Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>8am</td>
<td>Clear 15°C</td>
<td>60%</td>
<td>No Inversion Potential</td>
<td>Good</td>
</tr>
<tr>
<td>9am</td>
<td>Clear 10°C</td>
<td>60%</td>
<td>No Inversion Potential</td>
<td>Good</td>
</tr>
<tr>
<td>10am</td>
<td>Clear 12°C</td>
<td>60%</td>
<td>No Inversion Potential</td>
<td>Good</td>
</tr>
<tr>
<td>11am</td>
<td>Clear 12°C</td>
<td>60%</td>
<td>No Inversion Potential</td>
<td>Good</td>
</tr>
<tr>
<td>12pm</td>
<td>Clear 12°C</td>
<td>60%</td>
<td>No Inversion Potential</td>
<td>Good</td>
</tr>
</tbody>
</table>

Spraying not permitted from one hour before sunset until one hour after sunrise.
Untreated 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.**

**Active ingredient** Glufosinate ammonium – Group 10

**Concentration** 200 g/L

**Formulation** Solution

**One case contains** 2 x 10 L jugs

Also available in 400 L tote

Crop staging

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

**Weeds controlled**

**Broadleaf weeds**
Canada fleabane
Canada thistle
Chickweed
Cleavers
Cocklebur
Common ragweed
Eastern black nightshade
Field bindweed
Giant ragweed
Green pigweed
Jimsonweed
Kochia
Lady’s thumb
Lamb’s quarters
Perennial sow thistle
Redroot pigweed
Shepherd’s-purse
Stinkweed
Velvetleaf
Volunteer canola
Waterhemp
Wild buckwheat
Wild mustard
Wormseed mustard

**Grasses**
Barnyard grass
Bristly foxtail
Fall panicum
Giant foxtail
Green foxtail
Large crabgrass
Proso millet
Quackgrass
Wild oats
Witchgrass
Yellow foxtail

Application rates

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

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Application rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberty 200 SN</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
<tr>
<td>Ammonium sulfate</td>
<td>2.4 L/ac (6.0 L/ha)</td>
</tr>
</tbody>
</table>

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

1 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. 2 Including glyphosate-resistant biotypes. 3 Including Group 2-resistant biotypes. 4 Season long suppression. 5 Suppression only. 6 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%). 7 Including Group 4-resistant biotypes. 8 In corn and soybeans only. To control early flushes, an application of a registered pre-emergent herbicide, such as Zidua SC herbicide, is recommended. 9 In corn and soybeans only. To control early flushes, an application of a registered pre-emergent herbicide, such as Zidua SC herbicide, is recommended. 10 Add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%). 11 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.

### Choosing your best herbicide tank-mix option.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Roundup Ready&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Roundup Ready 2 Xtend&lt;sup&gt;®&lt;/sup&gt;</th>
<th>XtendFlex&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Enlist E3™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicide tolerance</td>
<td>Glyphosate</td>
<td>Glyphosate Dicamba</td>
<td>Glyphosate Dicamba Glufosinate</td>
<td>Glyphosate Glufosinate 2,4-D</td>
</tr>
<tr>
<td>BASF multiple mode of action program recommendation</td>
<td>Tank mix Zidua&lt;sup&gt;®&lt;/sup&gt; SC herbicide with a Kixor&lt;sup&gt;®&lt;/sup&gt; product pre-plant or pre-emergence followed by glyphosate</td>
<td>Tank mix Engenia&lt;sup&gt;®&lt;/sup&gt; herbicide with a Kixor product or Zidua SC pre-plant or pre-emergence followed by Engenia (low rate) in-crop up to the second trifoliate (if necessary)</td>
<td>Tank mix Engenia with a Kixor product or Zidua SC pre-plant or pre-emergence followed by an in-crop application of Liberty&lt;sup&gt;®&lt;/sup&gt; 200 SN herbicide before the start of flowering</td>
<td>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</td>
</tr>
</tbody>
</table>

| More information | Click here for Engenia best practices | Click here for Liberty 200 SN best practices |

### 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.

<table>
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<tr>
<th>Trait</th>
<th>Roundup Ready&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Roundup Ready 2 Xtend&lt;sup&gt;®&lt;/sup&gt;</th>
<th>XtendFlex&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Enlist E3™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicide tolerance</td>
<td>Glyphosate</td>
<td>Glyphosate Dicamba</td>
<td>Glyphosate Dicamba Glufosinate</td>
<td>Glyphosate Glufosinate 2,4-D</td>
</tr>
<tr>
<td>BASF multiple mode of action program recommendation</td>
<td>Tank mix Zidua&lt;sup&gt;®&lt;/sup&gt; SC herbicide with a Kixor&lt;sup&gt;®&lt;/sup&gt; product pre-plant or pre-emergence followed by glyphosate</td>
<td>Tank mix Engenia&lt;sup&gt;®&lt;/sup&gt; herbicide with a Kixor product or Zidua SC pre-plant or pre-emergence followed by Engenia (low rate) in-crop up to the second trifoliate (if necessary)</td>
<td>Tank mix Engenia with a Kixor product or Zidua SC pre-plant or pre-emergence followed by an in-crop application of Liberty&lt;sup&gt;®&lt;/sup&gt; 200 SN herbicide before the start of flowering</td>
<td>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</td>
</tr>
</tbody>
</table>

More information

- Click here for Engenia best practices
- Click here for Liberty 200 SN best practices

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

### Active ingredients

- Imazethapyr – Group 2
- Metribuzin – Group 5

### Formulation

- Imazethapyr – Solution
- Metribuzin – Suspension concentrate

### One case contains

- 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
- Lady’s thumb
- Lamb’s quarters
- Redroot pigweed
- Velvetleaf
- Wild mustard

**Grasses**

- Barnyard grass
- Foxtail (green, yellow)
- Old witchgrass

### Application rates

One case treats 30 to 40 acres.

<table>
<thead>
<tr>
<th></th>
<th>Pursuit</th>
<th>Conquest 480</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>126 to 168 ml/ac</td>
<td>348 to 445 ml/ac</td>
</tr>
<tr>
<td></td>
<td>(312 to 420 ml/ha)</td>
<td>(0.86 to 1.1 L/ha)</td>
</tr>
</tbody>
</table>

### 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

**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.*

---

1 Pre-emergence application. Partial control only.
2 Some velvetleaf plants that germinate deeper in the soil and emerge late may escape treatment.
3 Early pre-plant: medium soils only. Pre-emergence: coarse soils with more than 2% organic matter.
4 Winter wheat may be grown 100 days after the application of Conquest LQ 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

**Crop staging**

Pre-plant incorporated¹, pre-emergence¹

**Weeds controlled**

**Broadleaf weeds**
- Eastern black nightshade²
- Redroot pigweed³
- Waterhemp⁴

**Grasses**
- Barnyard grass
- Crabgrass (large, smooth)
- Fall panicum
- Foxtail (giant, green, yellow)
- Old witchgrass
- Yellow nutsedge⁵

**Application rates**

One case treats 45 to 60 acres.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frontier® Max</strong></td>
<td>305 to 390 ml/ac (756 to 963 ml/ha)⁶</td>
</tr>
</tbody>
</table>

**Water volume**

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

---

¹ Application stage is dependent on tank-mix partner.
² Pre-plant incorporated or pre-emergence only (390 ml/ac).
³ Pre-plant incorporated (350 to 390 ml/ac) or pre-emergence (390 ml/ac) only.
⁴ Suppression, pre-emergence only (390 ml/ac).
⁵ Pre-plant incorporated only (390 ml/ac). Lower rates provide suppression only.
⁶ Rate depends on soil texture and organic matter content, see label for more information.

---

**Active ingredient**

Dimethenamid-P – Group 15

**Formulation**

Emulsifiable concentrate

**One case contains**

2 x 9 L jugs
**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

**Crop staging**
Early pre-plant, pre-plant incorporated

**Weeds controlled**
1. Barnyard grass
2. Crabgrass (large, smooth)
3. Foxtail (green, yellow)
4. Lamb’s quarters
5. Redroot pigweed

**Application rate**
One case treats 20 acres. One tote treats 506 acres.

<table>
<thead>
<tr>
<th><strong>Prowl® H2O herbicide</strong></th>
<th>890 ml/ac (2.2 L/ha)</th>
</tr>
</thead>
</table>

**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

**Active ingredient**
Pendimethalin – Group 3

**Formulation**
Microcapsule suspension

**One case contains**
2 x 8.9 L jugs
Also available in 450 L tote

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**TECH TIP**

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

*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.*

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1. Applied in tank mix. See label for tank-mix partners. 2. In tank mix with glyphosate. 3. Suppression only. 4. Includes triazine-resistant biotypes. 5. Always read and follow label directions.
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

### Crop staging
Cotyledon to 3rd trifoliate

### 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.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit</td>
<td>126 ml/ac (312 ml/ha)</td>
</tr>
<tr>
<td>Basagran Forte</td>
<td>708 ml/ac (1.75 L/ha)</td>
</tr>
<tr>
<td>28% UAN&lt;sup&gt;5&lt;/sup&gt;</td>
<td>809 ml/ac (2.0 L/ha)</td>
</tr>
</tbody>
</table>

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

### Pre-harvest interval
100 days after application for soybeans.

---

### Active ingredients
- Bentazon – Group 6
- Imazethapyr – Group 2

### Formulation
- Bentazon – Liquid
- Imazethapyr – Solution

### One case contains
2 x dual chamber jugs
- Each jug contains: 1.26 L Pursuit<sup>®</sup> herbicide
- 7 L Basagran<sup>®</sup> Forte herbicide

---

**TECH TIP**

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

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<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.
# Match these herbicides with your IP soybeans.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Conquest® LQ</th>
<th>Prowl® H2O</th>
<th>Frontier® Max</th>
<th>Following by Clean Sweep®</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Prowl H2O</td>
<td>+ Frontier Max</td>
<td>+ Zidua® SC</td>
<td></td>
<td>Followed by Clean Sweep®</td>
</tr>
<tr>
<td>2, 3, 5</td>
<td>2, 5, 15</td>
<td>2, 5, 15</td>
<td>2, 3, 6</td>
<td>2, 6, 15</td>
</tr>
</tbody>
</table>

## Staging
- **Conquest LQ:**
  - Pursuit® 126-168 ml/ac
  - Conquest 480 348-445 ml/ac
  - Prowl H2O: 890 ml/ac

- **Prowl H2O:**
  - Pursuit 126-168 ml/ac
  - Conquest 480 348-445 ml/ac
  - Zidua SC: 101-200 ml/ac

- **Frontier Max:**
  - Pursuit 126 ml/ac
  - Basagran® Forte 708 ml/ac

## Rate
- **Conquest LQ:**
  - Pursuit 126-168 ml/ac
  - Conquest 480 348-445 ml/ac
  - Prowl H2O: 890 ml/ac

- **Frontier Max:**
  - Pursuit 126 ml/ac
  - Basagran® Forte 708 ml/ac

## Broadleaf weeds
- **Common ragweed**
- **Eastern black nightshade**
- **Lamb’s quarters**
- **Redroot pigweed**
- **Velvetleaf**

## Grasses
- **Barnyard grass**
- **Crabgrass (large)**
- **Fall panicum**
- **Foxtail (green, yellow)**
- **Ryegrass (Italian)**
- **Wild oats**
- **Wild mustard**
- **Waterhemp**
- **Wild buckwheat**

## Use when
- Best for heavy grass pressure including crabgrass, or additional activity on lamb’s quarters.
- Best for heavy grass or nightshade 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.
- 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.

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

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**PPI** = pre-plant incorporated  **PP** = pre-plant  **PRE** = pre-emergence
Lasting protection against aphids.

- Quickly halts aphid feeding, which reduces production losses
- Extended control of aphids
- Powered by Inscalis®, 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

### Crop staging
Emergence to full maturity

### Pest controlled
Soybean aphid (Aphis glycines)

### Application rate
One case treats 80 acres.

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Application Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sefina</td>
<td>81 ml/ac (200 ml/ha)</td>
</tr>
</tbody>
</table>

### 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.*

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**Active ingredient**
Afidopyropen – Group 9D

**Formulation**
Dispersion concentrate

**One case contains**
2 x 3.24 L jugs

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

<table>
<thead>
<tr>
<th>Disease</th>
<th>Visual symptoms</th>
<th>Picture</th>
</tr>
</thead>
</table>
| Anthracnose                         | - Irregular reddish/dark brown to black lesions (blotches) are found on the stems  
- Foliar symptoms include red/brown discoloration of veins, leaf rolling and premature leaf drop  
- Petiole infection can make the stem resemble a shepherd’s crook  
- Pods can produce smaller seeds or have missing seeds | 1       |
| Asian soybean rust                  | - Small grey/yellow water-soaked lesions that become tan/dark brown and increase in size  
- Symptoms start in the lower canopy before moving to the mid to upper canopy  
- Lesions are mostly found on the leaves but can also be on the petioles, stems and pods  
- High lesion density will cause leaves to drop and plants to mature early | 2       |
| Cercospora blight and purple seed stain | - Red to purple lesions; from needle tip size up to 1 cm  
- Lesions can coalesce to form larger irregular lesions  
- Symptoms can be found on the midrib, lateral veins, stems, petioles and pods  
- Develops during senescence | 3       |
| Frog eye leaf spot                  | - Round lesions that are 1 to 5 mm in diameter; lesions will coalesce over time  
- The centre of the lesions are usually tan with a brown or dark red margin  
- Grey spores can be seen on the lesions  
- Symptoms tend to appear during flowering and pod development | 4       |
| Phomopsis                           | - Affects the stems, petioles, pods and seeds mostly in the lower part of the plant  
- Black dots (pycnidia) placed in rows can be seen on parts of the stem  
- Infected seeds are dull, chalky white and look shriveled  
- Usually a late-season disease | 5       |
| Septoria brown spot                 | - Small irregular-shaped dark brown lesions that can coalesce  
- Lesions are on both sides of the leaves  
- Progresses from the bottom of the plant to the upper leaves  
- Infected leaves turn yellow and will drop | 6       |
| White mold                          | - White to grey/bleached lesions are present on stems, leaves and petioles  
- Fluffy white mycelium can be found on the lesions under humid temperatures  
- Lesions are mostly found in the lower half of the canopy  
- Once the plant is infected, it will start wilting, turn brown and die  
- Hard, black sclerotia can be found on or in the stem lesions and in infected pods | 7       |

1, 4, 6, 7: Source: BASF. 2: Source: Edward Sikora, Auburn University, Bugwood.org. 3, 5: 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.¹

<table>
<thead>
<tr>
<th>White mold risk level</th>
<th>R1 – Early flower</th>
<th>R2 – Full flower</th>
<th>R2.5</th>
<th>R3 – Early to mid-pod</th>
<th>R4 – Full pod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

1 Yang, Lundeen and Uphoff, 1999.
2 Low risk is defined by the following factors: below average moisture, no-till and tolerant varieties.
3 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.
Proven and consistent. A more advanced fungicide that enhances your soybean yield potential.¹

- More consistent² and continuous control of diseases including frog eye leaf spot and septoria brown spot
- Combines the active ingredient Xemium® with proven **Plant Health Benefits**³ including increased seed weight¹
- Multiple modes of action for increased performance and reduced risk for the onset of fungicide resistance

**Crop staging**¹
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*)⁵

**Application rates**
One case treats 107 to 160 acres.

| Priaxor⁵ | 120 to 180 ml/ac (300 to 450 ml/ha) |

**Water volume**
- Ground application: 40 to 80 L/ac (10 to 20 gal/ac)⁶
- Aerial application: 20 L/ac (5 gal/ac)

**Pre-harvest interval**
21 days after application for soybeans.

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

**Formulation**
Liquid suspension

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

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

Active ingredients
Boscalid – Group 7
Prothioconazole – Group 3

Formulation
Suspension concentrate

One case contains
2 x 9.8 L jugs

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)¹
White mold
(Sclerotinia sclerotiorum)¹

Application rate
One case treats 70 acres.

Cotegra
280 ml/ac
(700 ml/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 soybeans.

Increased soybean yield potential with Cotegra fungicide

<table>
<thead>
<tr>
<th>Yield (bu/ac)</th>
<th>Untreated</th>
<th>Cotegra</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>56.8</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

¹ Suppression only.
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

**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.

**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

**Application rates**

<table>
<thead>
<tr>
<th>Product</th>
<th>Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>30 to 59 ml/ac (73 to 146 ml/ha)</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Use Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>59 ml/ac (146 ml/ha)</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
</tbody>
</table>

**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.

1 Use higher rate for heavier weed pressure or if glyphosate-resistant weeds are present.
2 Glyphosate (required) is not included in the case.

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

Access the Eragon staging guide at agsolutions.ca/eragon-guide.
Solutions for wheat.

Crop Staging

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

1 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.

**CROP ESTABLISHMENT**
- **Insure® Cereal FX4**
  - Seed Treatment
- **Relenya®**
  - Seed Treatment
- **Teraxxa® F4**
  - Seed Treatment

**WEED MANAGEMENT**
- **Eragon Plus**
  - Powered by Kixor® Herbicide

**DISEASE MANAGEMENT**
- **Veltyma®**
  - Revysol® Fungicide

**HARVEST MANAGEMENT**
- **Eragon Plus**
  - Powered by Kixor® Herbicide

**POST-HARVEST**
- **Sphaerex®**
  - Fungicide
- **Zidua SC**
  - Herbicide
- **Engenia™**
  - Herbicide

Contact your BASF AgSolutions® Retail Representative for more information.
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** offer greater germination for improved emergence and enhanced seedling vigour, including better management of minor stress

**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

### Application rates

<table>
<thead>
<tr>
<th></th>
<th>Insure Cereal FX4</th>
<th>Relenya</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>300 ml/100 kg seed</td>
<td>12.5 ml/100 kg seed</td>
</tr>
</tbody>
</table>

### Increased emergence in wheat

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

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1. **Plant Health Benefits** refer to products that contain the active ingredient pyraclostrobin.
2. All comparisons are to untreated unless otherwise stated.
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

**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), seedling blight, root rot, crown rot and foot rot 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**

| 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 |

* Mixed with Insure® Cereal FX4 seed treatment at 300 ml/100 kg rate.
Source: BASF Small Plot Trials, Agassiz, BC, 2019, n=1

1 Except in Cochliobolus sativus (pre-emergent only).
2 Suppression only when caused by Cochliobolus sativus.
3 Only applies to Fusarium spp.; suppression only.

---

**Reduced wireworm populations**

<table>
<thead>
<tr>
<th></th>
<th>Wireworm count per four traps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check*</td>
<td>80</td>
</tr>
<tr>
<td>Teraxxa F4</td>
<td>60</td>
</tr>
<tr>
<td>Cruiser® Vibrance® Quattro</td>
<td>40</td>
</tr>
<tr>
<td>Diamide*</td>
<td>20</td>
</tr>
</tbody>
</table>

0 20 40 60 80

80 60 40 20 0

0 20 40 60 80

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

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

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

Weeds controlled
Broadleaf plantain\(^1\)
Canada fleabane\(^2\)
Common ragweed\(^2\)
Dandelion\(^3\)
Giant ragweed\(^1,2\)
Lady’s thumb\(^1\)
Lamb’s quarters
Perennial sow thistle\(^1,4\)
Prickly lettuce\(^1,5\)
Redroot pigweed
Shepherd’s-purse\(^1\)
Stinkweed\(^1\)
Wild buckwheat\(^1\)
Wild mustard

Application rates\(^6\)

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>59 ml/ac (146 ml/ha)</td>
</tr>
<tr>
<td>Merge</td>
<td>400 ml/ac (1 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

Water volume
Ground application
40 to 80 L/ac (10 to 20 gal/ac)\(^8\)

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)

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.

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

TECH TIP

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

<table>
<thead>
<tr>
<th>Disease</th>
<th>Visual symptoms</th>
<th>Picture</th>
</tr>
</thead>
</table>
| Leaf rust                | • Pustules are small, round and yellowish to red and become darker with time  
• They mainly occur on the leaves and occasionally on the leaf sheaths  
• Brown rust pustules appear in random scatter distribution  
• If there are a lot of pustules, the leaves may appear orange                                                                                       |         |
| Powdery mildew           | • White greyish mycelium colonies on the upper leaf surface  
• Over time, the whole plant can be covered by colonies which become more grey with black spots (fruiting bodies)  
• Leaves that are infected will shrivel                                                                                                                                 |         |
| Septoria leaf spot       | • Yellow flecking of the lower leaves at the start  
• Yellow, grey, white or brown blotches then appear on the plant  
• Tiny black dots (pycnidia) may appear within the lesions  
• On the leaves, the lesions create elongated blotches (up to 15 mm) that can coalesce                                                                 |         |
| Spot blotch              | • 2-4 mm dark brown lesions  
• Lesions can coalesce when infection is severe  
• A chlorotic area can form around the lesions                                                                                                                                                     |         |
| Stripe rust              | • Elongated yellow pustules that can occur on the leaves and the head  
• The pustules appear in parallel along leaf veins  
• As the infection progresses, the pustules become dark brown  
• Can cause defoliation or shrinking of the seeds                                                                                                                                               |         |
| Tan spot                 | • Lesions first appear on the lower leaves and spread upward via rain-splash  
• Brown/tan-coloured lesions appear with a distinct dark centre, surrounded by a yellow halo  
• Lesions expand to form 5-13 mm oval lesions that can coalesce to form irregular lesions                                                                                                         |         |
| Fusarium head blight     | • Causes bleaching of the spikelets  
• The grain of infected heads becomes shriveled, lightweight and chalky in appearance  
• Dark fruiting bodies and white mycelium (with tints of orange and pink) can be found on the bleached spikelets                                                                                   |         |

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.

<table>
<thead>
<tr>
<th>Timing</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application window</td>
<td>The first window to apply an in-crop fungicide is at herbicide timing when the wheat is in its vegetative stages. Tank mix the herbicide with the fungicide when tank mixes are permitted.</td>
<td>The second application window is also known as the flag-leaf application. Time the application when the flag leaf is unrolled and the tip is about to lose its upright position.</td>
<td>The last opportunity to protect your wheat against leaf diseases as well as the only opportunity to protect against head diseases is at fusarium head blight (FHB) 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. Click here for more details on this timing.</td>
</tr>
<tr>
<td>Why should I apply?</td>
<td>Manage early-season disease.</td>
<td>It's the most impactful timing for disease control and yield benefits since 75%(^1) 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.</td>
<td>Manage FHB to protect grain quality.</td>
</tr>
<tr>
<td>BASF solutions</td>
<td>Veltyma\textregistered fungicide</td>
<td>Veltyma fungicide</td>
<td>Sphaerex\textregistered fungicide</td>
</tr>
<tr>
<td>Groups</td>
<td>3, 11</td>
<td>3, 11</td>
<td>3</td>
</tr>
<tr>
<td>Rates</td>
<td>152 to 202 ml/ac (375 to 500 ml/ha)</td>
<td>152 to 202 ml/ac (375 to 500 ml/ha)</td>
<td>216 ml/ac (530 ml/ha)</td>
</tr>
</tbody>
</table>

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\(^1\) for increased growth efficiency, better management of minor stress and greater yield potential\(^2\)
- Delivers preventative and post-infection activity

### Crop staging
Stem elongation to flag leaf

### Diseases controlled\(^3\)
In wheat.
- Leaf rust (\textit{Puccinia recondita})
- Septoria leaf blotch (\textit{Septoria tritici} or \textit{Stagonospora nodorum})
- Stripe rust (\textit{Puccinia striiformis})
- Tan spot (\textit{Pyrenophora tritici-repentis})

### Application rates
One case treats 80 to 106 acres.

<table>
<thead>
<tr>
<th></th>
<th>Veltyma</th>
<th>152 to 202 ml/ac (375 to 500 ml/ha)</th>
</tr>
</thead>
</table>

### 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.

#### 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

### Active ingredients
Mefentrifluconazole – Group 3
Pyraclostrobin – Group 11

### Formulation
Suspension concentrate

### One case contains
2 x 8.1 L jugs

---
\(^1\) Plant Health Benefits refer to products that contain the active ingredient pyraclostrobin.
\(^2\) All comparisons are to untreated, unless otherwise stated.
\(^3\) 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.

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

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

---
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

**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*)
- Fusarium head blight (*Fusarium graminearum*)
- Net blotch (*Pyrenophora teres*)
- Powdery mildew (*Erysiphe graminis*)
- Scald (*Rhynchosporium secalis*)
- Spot blotch (*Cochliobolus sativus*)

In oats,
- Ergot (*Claviceps purpurea*)
- Fusarium head blight (*Fusarium graminearum*)
- Stagonospora (septoria) leaf blotch and black stem (*Stagonospora avenae* syn. *Septoria avenae*)

In rye and triticale,
- Ergot (*Claviceps purpurea*)
- Fusarium head blight (*Fusarium graminearum*)
- Leaf rust (*Puccinia recondita*)
- Powdery mildew (*Erysiphe graminis*)
- Stripe rust (*Puccinia striiformis*)

In wheat (all types),
- Ergot (*Claviceps purpurea*)
- Fusarium head blight (*Fusarium graminearum*)
- Leaf rust (*Puccinia recondita*)
- Powdery mildew (*Erysiphe graminis*)
- Septoria/stagonospora leaf blotch (*Septoria tritici* or *Stagonospora nodorum*)
- Spot blotch (*Cochliobolus sativus*)
- Stem rust (*Puccinia graminis*)
- Stripe rust (*Puccinia striiformis*)
- Tan spot (*Pyrenophora triticici-repentis*)

**Application rate**

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

**For fusarium head blight**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
<th>Water volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sphaerex</td>
<td>216 ml/ac</td>
<td>80 L/ac (20 gal/ac)</td>
</tr>
<tr>
<td></td>
<td>(530 ml/ha)</td>
<td>Aerial application 20 L/ac (5 gal/ac)</td>
</tr>
</tbody>
</table>

**Pre-harvest interval**

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

1 Suppression only. 2 Apply when 75-100% of main stem barley spikes are emerged or 3 days after. 3 Apply at anthesis stage or at early panicle stage when anthers are yellow to white. 4 Apply when at least 75% of mainstem cereals are fully emerged until the end of anthesis. 5 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.

**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

**Higher yield potential with Sphaerex® fungicide in cereals**

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

**Yield (bu/ac)**

- Untreated: 99.1
- Caramba® fungicide: 103.5
- Sphaerex: 104.7

**RESOURCES**

- POST-HARVEST
- POTATOES
- CANOLA
- SOYBEANS
- CORN
Optimal application timing for fusarium head blight (FHB) management in wheat.

<table>
<thead>
<tr>
<th>DAYS¹</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBCH</td>
<td>59</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>69</td>
</tr>
</tbody>
</table>

**SPRAY TIME FOR BEST RESULTS**

**APPLICATION WINDOW**

¹ 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
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

**Crop staging**
- **Oats, rye, triticale, wheat**: 20% flower
- **Barley**: Full head to 3 days after full emergence

**Diseases controlled**

### In barley.
- Fusarium head blight (*Fusarium graminearum*)
- Leaf rust (*Puccinia hordei*)
- Net blotch (*Pyrenophora teres*)
- Powdery mildew (*Erysiphe graminis*)
- Scald (*Rhynchosporium secalis*)
- Spot blotch (*Cochliobolus sativus*)
- Stripe rust (*Puccinia striiformis*)

### In oats.
- Crown rust (*Puccinia coronata*)
- Fusarium head blight (*Fusarium graminearum*)
- Septoria leaf blotch (*Septoria avenae*)

### In rye.
- Fusarium head blight (*Fusarium graminearum*)
- Leaf rust (*Puccinia recondita*)
- Powdery mildew (*Erysiphe graminis*)
- Stripe rust (*Puccinia striiformis*)

### In wheat (all types) and triticale.
- Fusarium head blight (*Fusarium graminearum*)
- 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*)
- Stem rust (*Puccinia graminis*)
- Stripe rust (*Puccinia striiformis*)
- Tan spot (*Pyrenophora tritici-repentis*)

**Application rate**
- One case treats 40 acres.

**For fusarium head blight**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caramba</td>
<td>405 ml/ac (1.0 L/ha)</td>
</tr>
</tbody>
</table>

**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.

---

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

**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**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>30 to 59 ml/ac (73 to 146 ml/ha)</td>
</tr>
<tr>
<td>Merge</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>59 ml/ac (146 ml/ha)</td>
</tr>
<tr>
<td>Merge</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
</tbody>
</table>

**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

**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

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1 Use higher rate for heavier weed pressure or if glyphosate-resistant weeds are present.
2 Glyphosate is not included in the case.
Solutions for canola.

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

1 For hybrids tolerant to Liberty® herbicide.
2 Apply when 75% of seeds have changed colour.
BASF lead recommendations.

Select the solution that’s right for your operation.

- **SEED**
  - InVigor®
- **WEED MANAGEMENT**
  - Liberty® 200 SN Herbicide
  - **SELECT®** Herbicide
- **DISEASE MANAGEMENT**
  - Priaxor® Xemium® Fungicide
  - **FOLLOWED BY** Cotegra® Fungicide
- **HARVEST MANAGEMENT**
  - Eragon® Plus NEW Powered by Kixor® Herbicide

POST-HARVEST
- Engenia® Herbicide
- Zidua® SC Herbicide

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

<table>
<thead>
<tr>
<th>InVigor® Hybrid</th>
<th>Description</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>L350PC</td>
<td>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(^1) and our patented Pod Shatter Reduction technology. It is a great fit for growers who irrigate or when lodging is a concern.</td>
<td>115.6% of the checks (InVigor L255PC and Pioneer® 45H33) in 2020 &amp; 2021 BASF internal trials.</td>
</tr>
<tr>
<td>L343PC</td>
<td>InVigor L343PC is a go-to choice when you need a high-yielding second-generation clubroot-resistant hybrid(^2). With patented Pod Shatter Reduction, this hybrid offers improved standability and yield potential over InVigor L234PC.</td>
<td>111.3% of the checks (InVigor L233P and Pioneer® 45H33) in 2019 &amp; 2020 WCC/RRC(^3) trials.</td>
</tr>
<tr>
<td>L340PC</td>
<td>InVigor L340PC has it all—high yield, Pod Shatter Reduction, first-generation clubroot resistance(^1) and strong standability. It is a great fit for growers who irrigate or when lodging is a concern.</td>
<td>108.9% of the checks (InVigor L233P and Pioneer® 45H33) in 2019 WCC/RRC(^3) trials.</td>
</tr>
<tr>
<td>L233P</td>
<td>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.</td>
<td>108.8% of the checks (InVigor 5440 and Pioneer® 45H29) in 2014 &amp; 2015 WCC/RRC(^3) trials.</td>
</tr>
</tbody>
</table>

\(^1\) 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.

\(^2\) InVigor L343PC has this resistance profile plus it contains second-generation multigenic clubroot resistance to additional clubroot pathotypes to help combat evolving clubroot pathotypes.

\(^3\) 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).

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](http://agsolutions.ca/LTA).
BASF solutions for canola.

MATURITY

<table>
<thead>
<tr>
<th>InVigor L233P</th>
<th>InVigor L340PC</th>
<th>InVigor L343PC</th>
<th>InVigor L350PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARLIER</td>
<td>EARLIER</td>
<td>EARLIER</td>
<td>LATER</td>
</tr>
</tbody>
</table>

STANDABILITY

<table>
<thead>
<tr>
<th>InVigor L233P</th>
<th>InVigor L340PC</th>
<th>InVigor L350PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD</td>
<td>GOOD</td>
<td>VERY STRONG</td>
</tr>
</tbody>
</table>

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

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 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.

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 or see our frequently asked questions at agsolutions.ca/InVigorFAQ.
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

**Crop staging**
For InVigor® hybrid canola with the LibertyLink® trait only
Apply from cotyledon to prior to bolting

**Weeds controlled**

**Broadleaf weeds**
Canada fleabane\(^2,3\), Canada thistle\(^4\), Chickweed, Cleavers\(^3,5\), Cocklebur, Common ragweed\(^3\), Eastern black nightshade, Field bindweed\(^4\), Giant ragweed\(^2,5\), Green pigweed, Jimsonweed\(^6\), Kochia\(^2,3,7\), Lady’s thumb, Lamb’s quarters, Perennial sow thistle, Redroot pigweed, Shepherd’s-purse, Stinkweed, Velvetleaf\(^6\), Volunteer canola\(^8\), Wild buckwheat, Wild mustard, Wormseed mustard

**Grasses**
Barnyard grass, Bristly foxtail, Fall panicum, Giant foxtail, Green foxtail, Large crabgrass, Proso millet, Quackgrass\(^4,9\), Wild oats, Witchgrass, Yellow foxtail

**Application rates**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberty 200 SN</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
<tr>
<td>Ammonium sulfate (recommended)</td>
<td>2.4 L/ac (6.0 L/ha)</td>
</tr>
</tbody>
</table>

**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

---

\(^1\) Apply when weeds are actively growing.  \(^2\) Including glyphosate-resistant biotypes.  \(^3\) Including Group 2-resistant biotypes.  \(^4\) Season long suppression.  \(^5\) Suppression only.  \(^6\) 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%).  \(^7\) Including Group 4-resistant biotypes.  \(^8\) Including conventional, Roundup Ready®, and Clearfield® biotypes.  \(^9\) Add ammonium sulphate to the tank at a rate of 6.0 L/ha (49% solution) or 3.0 kg/ha (99%).  \(^10\) See label for use rates on specific weeds and weed stages.
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

**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 darnel
- 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.

<table>
<thead>
<tr>
<th>Select</th>
<th>77 to 154 ml/ac (190 to 380 ml/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amigo adjuvant</td>
<td>0.5 to 1.0% v/v (5 to 10 L per 1000 L spray solution)</td>
</tr>
</tbody>
</table>

**Tank-mix recommendation and order**
When tank mixing Liberty 200 SN and Select for InVigor® canola hybrids

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

**Active ingredient**
Clethodim – Group 1

**Formulation**
Emulsifiable concentrate

**One case contains**
1 x 3 L jug of Select® herbicide
1 x 9 L jug of Amigo® adjuvant

1 Consult the label for rates to control specific weeds.
A more advanced fungicide that helps enhance your canola yield potential.

- Tank mixed with your canola system herbicide¹, Priaxor® fungicide combines the active ingredient Xemium® with proven Plant Health Benefits²
- Multiple modes of action for increased performance and reduced risk of developing fungicide resistance
- Increased growth efficiency and better management of minor stress³

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

**Formulation**
- Liquid suspension

**One case contains**
- 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.

<table>
<thead>
<tr>
<th></th>
<th>Priaxor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120 ml/ac (300 ml/ha)</td>
</tr>
</tbody>
</table>

**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

¹ See label for permitted herbicide tank mixes in canola. ² Plant Health Benefits refer to products that contain the active ingredient pyraclostrobin. ³ 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

Active ingredients
Boscalid – Group 7
Prothioconazole – Group 3

Formulation
Suspension concentrate

One case contains
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.

Cotegra® fungicide 240 to 280 ml/ac
(600 to 700 ml/ha)¹

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)

¹ The recommended application rate is 240 ml/ac. The 280 ml/ac rate is only recommended for severe disease conditions.
**Cut straight to an easier harvest.**

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

**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**

<table>
<thead>
<tr>
<th>Component</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon LQ</td>
<td>59 ml/ac (146 ml/ha)</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate¹</td>
<td>1.0 L/ac (2.5 L/ha)</td>
</tr>
</tbody>
</table>

**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

¹ Glyphosate (required) is not included in the case.

---

**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

---

Access the Eragon staging guide at agsolutions.ca/eragon-guide.
<table>
<thead>
<tr>
<th>Insect name</th>
<th>Economic threshold</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bertha armyworm</td>
<td>Provided by government websites and depends on insecticide cost and canola value.</td>
<td><img src="image1" alt="Bertha armyworm" /></td>
</tr>
<tr>
<td>Cabbage seedpod weevil</td>
<td>3 to 4 adults/sweep.</td>
<td><img src="image2" alt="Cabbage seedpod weevil" /></td>
</tr>
<tr>
<td>Diamondback moth</td>
<td>100 to 150 larvae/m² in immature and flowering canola. 200 to 300 larvae/m² in podded canola.</td>
<td><img src="image3" alt="Diamondback moth" /></td>
</tr>
<tr>
<td>Flea beetles</td>
<td>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.</td>
<td><img src="image4" alt="Flea beetles" /></td>
</tr>
<tr>
<td>Pollen beetle</td>
<td>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.</td>
<td><img src="image5" alt="Pollen beetle" /></td>
</tr>
<tr>
<td>Root maggot</td>
<td>No established thresholds.</td>
<td><img src="image6" alt="Root maggot" /></td>
</tr>
<tr>
<td>Swede midge</td>
<td>When 20 adults have been captured from the start of trapping (pheromone traps).</td>
<td><img src="image7" alt="Swede midge" /></td>
</tr>
</tbody>
</table>

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

Crop Staging

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

1. Darker areas reflect recommended application period for Cimegra® fungicide.
2. Darker areas reflect recommended application period for Veltyma® fungicide.
3. Darker areas reflect recommended application period.

1. Do not exceed the total number of sequential applications or total number of applications per season as stated by specific product labels.
2. 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.
3. To reduce the risk of the development of fungicide resistance, tank mix Forum® 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.

RESOURCES

POST-HARVEST

POTATOES

CORN

SOYBEANS

CEREALS

CANOLA
BASF lead recommendations.

Select the solution that’s right for your operation.

INSECT MANAGEMENT
- **Cimegra**
  - Insecticide
- **Titan**
  - Insecticide
- **Sefina**
  - Insecticide Powered by **InscaLi**

WEED MANAGEMENT
- **Zidua SC**
  - Herbicide
- **Frontier Max**
  - Herbicide

DISEASE MANAGEMENT
- **Veltyma**
  - Revysol Fungicide
- **Sercadis**
  - Xemium Fungicide
- **Cevya**
  - Revysol Fungicide
- **Serifel**
  - Fungicide
- **Forum**
  - Fungicide

Contact your BASF AgSolutions® Representative for more information.
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

**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 euphorbiae*), potato flea beetle (*Epitrix cucumeris*), potato leafhopper (*Empoasca fabae*), wireworm (*Agriotes obscurus, A. lineatus, Limonius aegonous, Melanotus spp., M. communis*)

**Application rates**

<table>
<thead>
<tr>
<th>Pest</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphids, Colorado potato beetle, potato flea beetle, potato leafhopper</td>
<td>10.4 to 20.8 ml per 100 kg potato seed pieces</td>
</tr>
<tr>
<td>Wireworms(^2)</td>
<td>20.8 ml per 100 kg potato seed pieces</td>
</tr>
</tbody>
</table>

**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.

**Active ingredient**
Clothianidin – Group 4

**Formulation**
Suspension

**One case contains**
2 x 3 L jugs

\(^1\) Control of overwintered adults and suppression of second generation.

\(^2\) Suppression only.

\(^3\) May reduce the damage caused by other wireworm species.
Cimegra<sup>®</sup> 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

**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).

<table>
<thead>
<tr>
<th>Cimegra&lt;sup&gt;3&lt;/sup&gt;</th>
<th>100 ml/ac (250 ml/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 90 cm (36&quot;) row spacing&lt;sup&gt;4&lt;/sup&gt;</td>
<td>2.3 ml per 100 metres of row</td>
</tr>
</tbody>
</table>

**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.

**Active ingredient**
Broflanilide – Group 30

**Formulation**
Suspension concentrate

**One case contains**
2 x 3 L jugs

---

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

<sup>2</sup> Including *Agriotes obscurus*, *Agriotes sputator*, *Conderus sp.*, *Hypnoides bicolor*, *Limonius californicus*, *Limonius infuscatus*, *Melanotus cribulosus*, *Melanotus 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.

---

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

---

Percent of unmarketable tubers by treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check</td>
<td>80</td>
</tr>
<tr>
<td>Cimegra</td>
<td>40</td>
</tr>
<tr>
<td>Clothianidin</td>
<td>60</td>
</tr>
<tr>
<td>Pyrethroid</td>
<td>40</td>
</tr>
<tr>
<td>Organophosphate</td>
<td>100</td>
</tr>
</tbody>
</table>

---
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.
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

**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 argentifoli*ii)*
Sweet potato whitefly (*Bemisia tabaci*)

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

<table>
<thead>
<tr>
<th>Pest</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green peach aphid and potato aphid</td>
<td>81 ml/ac (200 ml/ha)</td>
</tr>
<tr>
<td>Silverleaf whitefly and sweet potato whitefly</td>
<td>283 to 405 ml/ac (0.7 to 1.0 L/ha)</td>
</tr>
</tbody>
</table>

**Water volume**
- Minimum 40 to 80 L/ac (10 to 20 gal/ac)
- 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.

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>Afidopyropen – Group 9D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formulation</strong></td>
<td>Dispersion concentrate</td>
</tr>
<tr>
<td><strong>One case contains</strong></td>
<td>2 x 3.24 L</td>
</tr>
</tbody>
</table>

**Legend**

1. Allow a minimum of 7 days between applications.
2. 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.

<table>
<thead>
<tr>
<th>Pest</th>
<th>Identifying features</th>
<th>Adult</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphids</td>
<td><strong>Nymphs</strong>&lt;br&gt;- No bigger than a pen tip  &lt;br&gt;- Smaller version of adult aphid &lt;br&gt;- Egg hatched in spring, live birth in summer</td>
<td><strong>Adult</strong> &lt;br&gt;- Only a few millimetres in size &lt;br&gt;- Colour ranges from greens to yellows to red/pink depending on crop &lt;br&gt;- In summer, all aphids are female and reproduce asexually &lt;br&gt;- Females can produce both wingless and winged aphids</td>
<td><img src="1" alt="Image" /></td>
</tr>
<tr>
<td>Colorado potato beetle</td>
<td><strong>Eggs</strong>&lt;br&gt;- Yellow to orange, elongated and cylindrical  &lt;br&gt;- Found on the underside of leaves in masses of 25-40</td>
<td><strong>Larvae</strong>&lt;br&gt;- 4 instars (larvae stages) that all look similar but get progressively larger  &lt;br&gt;- Larvae are orange, red to pink in colour with two rows of black spots on each side of the body  &lt;br&gt;- Mature larvae drop to the ground to pupate</td>
<td><img src="2" alt="Image" /></td>
</tr>
<tr>
<td>Wireworm</td>
<td><strong>Eggs</strong>&lt;br&gt;- Hatch in the soil in spring</td>
<td><strong>Larvae</strong>&lt;br&gt;- Wireworms can live in soil for 3 to 5 years</td>
<td><img src="3" alt="Image" /></td>
</tr>
</tbody>
</table>

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

1, 2, 3 Source: BASF.
# Identify common potato diseases.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Visual symptoms</th>
<th>Picture</th>
</tr>
</thead>
</table>
| Black dot    | • Black dot-infected plants display pepper-black dots on stems and leaves  
• Often mistaken for verticilium wilt – verticillium-affected plants show yellowing leaves and brown discolouration in the cross-section of the roots or lower stem area  
• Brown to grey-blackish discolouration on tubers  
• Often confused with silver scurf, with pronounced micro-sclerotia dots on tubers | ![Image 1](image1.png) |
| Black scurf  | • A seed and soil-borne fungus  
• Hard black sclerotia of irregular shape develop on the tubers (often referred to as the dirt that won’t wash off)  
• Can also affect sprouts before plant emergence and cause cankers on young stems resulting in uneven or weaker stands  
• Long, deep sunken cankers can also form on the stems mid-season, and leaves can roll upwards and turn reddish | ![Image 2](image2.png) |
| Brown spot   | • 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  
• Elongated, superficial brown or black lesions on stems  
• Small black pits form on the tuber surface  
• Similar in appearance to pits caused by common scab, but usually deeper, narrower and darker | ![Image 3](image3.png) |
| Early blight | • Dark brown concentric lesions on mature foliage  
• Elongated brown and black lesions on the stems  
• Eventually spreads as brown-black sunken lesions on tubers | ![Image 4](image4.png) |
| Late blight  | • Small necrotic spots surrounded with pale green border on leaves  
• White mycelium on underside of leaf or on stems – visible when plants are moist  
• Dark green or black water-soaked lesions on stems  
• Irregular and shallow copper brown dry rot on tubers | ![Image 5](image5.png) |
| White mold   | • High humidity and dense canopies are ideal for white mold  
• White cottony mycelium develop on stems and leaves, typically lower in the canopy  
• Black sclerotia can form on old lesions  
• Can develop on both living and dead tissue | ![Image 6](image6.png) |

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.

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

### Weeds Suppressed

**Broadleaf weeds**
- Cleavers
- Common chickweed
- Eastern black nightshade
- Kochia
- 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).

| Zidua SC | 49 to 97 ml/ac (120 to 240 ml/ha)¹ |

### Water Volume
Ground application
Minimum 40 L/ac (10 gal/ac)

### Restricted Entry Interval
12 hours.

¹ Early-season residual suppression.
² Including Group 2-resistant biotypes.

---

Active ingredient: Pyroxasulfone – Group 15
Formulation: Suspension concentrate
One case contains: 2 x 4.05 L jugs
Frontier 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

![Untaxed vs. Treated Potato Field](source: BASF Small Plot Trials, PEI, 2012)

**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\(^1\),\(^2\), Fall panicum, Foxtail (giant, green, yellow), Old witchgrass, Redroot pigweed\(^1\),\(^2\), Yellow nutsedge\(^3\)

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

<table>
<thead>
<tr>
<th>Frontier Max</th>
<th>Application rates based on % organic matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil type</td>
<td>Organic matter &lt; 3%</td>
</tr>
<tr>
<td>Coarse textured soils</td>
<td>305 ml/ac (756 ml/ha)</td>
</tr>
<tr>
<td>Medium textured soils</td>
<td>305 ml/ac (756 ml/ha)</td>
</tr>
<tr>
<td>Fine textured soils</td>
<td>305 ml/ac (756 ml/ha)</td>
</tr>
</tbody>
</table>

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.

---

\(^1\) Includes Group 2-resistant and triazine-resistant biotypes.
\(^2\) Controlled at 390 ml/ac (963 ml/ha); lower rates provide suppression only.
\(^3\) Suppression only.

**Active ingredient**: Dimethenamid-P – Group 15
**Formulation**: Emulsifiable concentrate
**One case contains**: 2 x 9 L jugs
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®
- Proven Plant Health Benefits\(^1\) for increased growth efficiency, better management of minor stress and greater yield potential\(^2\)
- Delivers preventative and post-infection activity
- Liquid formulation for optimized usability

**Potential yield increase with Veltyma\(^{®}\) fungicide**

**Active ingredients**
- Mefentrifluconazole – Group 3
- Pyraclostrobin – Group 11

**Formulation**
- Suspension concentrate

**One case contains**
- 2 x 8.1 L jugs

---

### Timing
7 to 14 day application interval

### Diseases controlled
- Black dot (*Colletotrichum coccodes*)
- Brown spot (*Alternaria alternata*)\(^3\)
- Early blight (*Alternaria solani*)\(^4\)

### Application rate
One case treats 80 acres (32 hectares).

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veltyma</td>
<td>202 ml/ac (500 ml/ha)</td>
</tr>
</tbody>
</table>

### 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.

---

**Competitor**

**Veltyma**

<table>
<thead>
<tr>
<th>Field 1</th>
<th>Field 2</th>
<th>Field 3</th>
<th>Field 4</th>
<th>Field 5</th>
<th>Field 6</th>
<th>Average of all fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>298</td>
<td>334</td>
<td>385</td>
<td>472</td>
<td>450</td>
<td>425</td>
<td>398</td>
</tr>
</tbody>
</table>

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

---

1. Plant Health Benefits refer to products that contain the active ingredient pyraclostrobin.
2. All comparisons are to untreated, unless otherwise stated.
3. Suppression.
4. Includes control of Group 11-resistant biotypes.
Cevya® fungicide is powered by Revysol® 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

**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)¹ |

**Rainfastness**
1 hour.

**Active ingredient**
Mefentrifluconazole – Group 3

**Formulation**
Suspension concentrate

**One case contains**
2 x 4 L jugs

**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.

**POTATOES**

**RESOURCES**

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

### Active ingredient
Fluxapyroxad – Group 7

### Formulation
Suspension

### One case contains
2 x 1.35 L jugs

### Crop staging

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

### Diseases controlled

- **Rhizoctonia black scurf control**
  - **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
- **Rhizoctonia canker**
  - 135 ml/ac (333 ml/ha)
  - 36” rows: 30 ml per 1000 m of row

#### Foliar applications
- **Early blight**
  - 67 to 135 ml/ac (167 to 333 ml/ha)

- **White mold**
  - 135 ml/ac (333 ml/ha)

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

#### 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.
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

**Active ingredient**  
*Bacillus amyloliquefaciens* strain MBI 600 – Group BM02

**Formulation**  
Wettable powder

**One case contains**  
4 x 2 kg jugs

---

**Timing**  
7 to 10 day interval

**Diseases suppressed**  
Early blight (*Alternaria solani*)  
Rhizoctonia stem canker/black scurf (*Rhizoctonia solani*)

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

| Serumel fungicide | 0.1 to 0.2 kg/ac (0.25 to 0.5 kg/ha) |

**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.*
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

**Timing**
- 5 to 7 day interval under high disease pressure
- 7 to 10 day interval under low disease pressure

**Diseases controlled**
- Late blight (*Phytophthora infestans*)
- Tuber blight in storage (*Phytophthora infestans*)

**Application rate**
- One case treats 50 acres (20 hectares).
- **Forum** 182 ml/ac (450 ml/ha)

**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.

**Active ingredient**
- Dimethomorph – Group 40

**Formulation**
- Suspension concentrate

**One case contains**
- 2 x 4.5 L jugs

---

**Curative late blight control**

<table>
<thead>
<tr>
<th></th>
<th>% Late Blight control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cymoxanil + protectant</td>
<td>40%</td>
</tr>
<tr>
<td>Forum® fungicide + protectant</td>
<td>80%</td>
</tr>
</tbody>
</table>

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

**Control of tuber blight in storage with Forum**

<table>
<thead>
<tr>
<th></th>
<th>% Storage rot control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protectant only</td>
<td>20%</td>
</tr>
<tr>
<td>Forum® + protectant</td>
<td>80%</td>
</tr>
</tbody>
</table>

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

1 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.  
2 Suppression only.  
3 Applied pre-harvest.
Zampro® fungicide on leaf

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

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

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)\(^1\)

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

<table>
<thead>
<tr>
<th>Disease</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late blight</td>
<td>324 to 404 ml/ac (0.8 to 1.0 L/ha)(^2)</td>
</tr>
<tr>
<td>Tuber blight</td>
<td>404 ml/ac (1.0 L/ha)</td>
</tr>
</tbody>
</table>

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.

Active ingredients
- Dimethomorph – Group 40
- Ametoctradin – Group 45

Formulation
Suspension concentrate

One case contains
4 x 4.14 L jugs

\(^1\) When used in accordance to the label recommendations, Zampro also reduces tuber blight when applied immediately prior to or after vine kill.

\(^2\) 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
Distinct® Herbicide

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

Staging
Prior to first significant frost

Weeds controlled
- Biennial wormwood
- Canada thistle
- Common cocklebur
- Common ragweed
- Dandelion
- Lady’s thumb
- Lamb’s quarters
- Perennial sow thistle
- Redroot pigweed
- Velvetleaf
- Volunteer canola
- Waterhemp
- Wild buckwheat

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

Application rate
One case treats 40 acres.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Application Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinct</td>
<td>115 g/ac (285 g/ha)</td>
</tr>
<tr>
<td>Merge adjuvant</td>
<td>400 ml/ac (1.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

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

Active ingredients
- Dicamba – Group 4
- Diflufenzopyr – Group 19

Formulation
- Wettable granules

One case contains
- 2 x 2.32 kg jugs

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

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.
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)

**Staging**
Apply to actively growing weeds

**Weeds controlled**
- Canada fleabane
- Canada thistle
- Cleavers
- Corn spurry
- Cow cockle
- Curled dock
- 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

**Active ingredient**
- Dicamba – Group 4

**Formulation**
- Solution

**One case contains**
- 2 x 8.09 L jugs
- Also available in 121.2 L shuttle

**Application rate**
- One case treats 20 acres.
- One shuttle treats 150 acres.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engenia&lt;sup&gt;®&lt;/sup&gt; herbicide</td>
<td>808 ml/ac (2.0 L/ha)</td>
</tr>
<tr>
<td>Glyphosate&lt;sup&gt;4&lt;/sup&gt;</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

**Water volume**
Ground application
- 45 to 90 L/ac (12 to 24 gal/ac)
- Use a higher water volume to ensure adequate coverage.

---

1 Refer to product labels for specific weed staging.
2 Top growth only.
3 See label for a complete list of additional available tank mixes and their rates. Tank-mix options are not included in the case.
4 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.
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

![Untreated vs. Zidua SC herbicide + glyphosate](image)

Source: Grower Applied Strip Trials, Thamesville ON, 2021

**Active ingredient**  
Pyroxasulfone – Group 15

**Formulation**  
Suspension concentrate

**One case contains**  
2 x 4.05 L jugs

**Crop staging**  
Post-harvest

**Weeds controlled**

- 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidua SC</td>
<td>97 ml/ac (240 ml/ha)</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>See label for rate</td>
</tr>
</tbody>
</table>

**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.

1 Refer to product labels for specific weed staging.

2 Glyphosate is not included in the case. Only use glyphosate products registered for post-harvest use.
Resources are ready for you. (And your crops.)

**Other Crops**

Dry bean solutions
Eragon® Plus herbicide on dry beans

Priaxor® fungicide on alfalfa

**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

**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.

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

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. In addition to three modes of effective action on broadleaf weeds and grasses, this tank mix will provide extended residual weed control.
1 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.  
2 Make sure all components of the tank mix can be applied to your specific dry bean variety. 

### Fungicide

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Disease</th>
<th>Timing</th>
<th>Rate</th>
<th>Tips</th>
<th>Dry bean classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priaxor®</td>
<td>Anthracnose, Powdery mildew, Rust</td>
<td>Beginning of flower or the onset of symptoms.</td>
<td>120 ml/ac</td>
<td>Use 180 ml/ac for white mold suppression.³</td>
<td>All</td>
</tr>
<tr>
<td>Cotegra®</td>
<td>White mold⁴</td>
<td>20-50% flowering and again 7-14 days after the first application if disease persists or weather conditions are favourable for disease development.</td>
<td>400 ml/ac</td>
<td>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.</td>
<td>All</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Harvest aid⁵</th>
<th>Timing</th>
<th>Rate</th>
<th>Tips</th>
<th>Dry bean classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon® Plus⁶</td>
<td>Apply when stems are green to brown, pods are mature (yellow, brown) and 80-90% of leaves have dropped.</td>
<td>59 ml/ac of Eragon LQ + 400 ml/ac of Merge® adjuvant</td>
<td>Spray in the middle of a sunny day with a higher water volume. Avoid spraying on overcast days or at dawn and dusk.</td>
<td>Check with your grain buyer.</td>
</tr>
<tr>
<td>Ignite⁷</td>
<td>Apply when approximately 50-75% of the bean pods have naturally changed colour from green to yellow or brown.</td>
<td>1.2 L/ac</td>
<td>Use when lamb’s quarters are the predominant weed.</td>
<td></td>
</tr>
</tbody>
</table>

**TECH TIP**

<table>
<thead>
<tr>
<th>Eragon Plus or Ignite?</th>
<th>Activity on grasses?</th>
<th>Surfactant required?</th>
<th>Use on seed dry bean?</th>
<th>Use on soybean?</th>
<th>Spray on sunny days?</th>
<th>Pre-harvest interval?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eragon Plus</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2 days</td>
</tr>
<tr>
<td>Ignite</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>9 days</td>
</tr>
</tbody>
</table>

¹ 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. ⁴ Make sure all components of the tank mix can be applied to your specific dry bean variety. ³ Use Priaxor for white mold suppression on faba bean only. ⁴ Suppression only. ⁵ Check with your grain buyer before applying. ⁶ 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. ⁷ 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.¹

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.

![Field images](image1)

**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.

¹ 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.
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
- Second and third cut applications resulted in improved disease control and increased yield potential and protein levels for higher quality

**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.

**Disease controlled**
Common leaf spot
*Pseudopeziza medicaginis*

**Disease suppressed**
Blossom blight
*Sclerotinia sclerotiorum*

**Application rate**
One case treats 160 acres.

**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

**Increased alfalfa yield potential with Priaxor fungicide**

<table>
<thead>
<tr>
<th></th>
<th>Yield (tonne/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st cut</td>
<td>4.71</td>
</tr>
<tr>
<td>Priaxor</td>
<td>5.25</td>
</tr>
<tr>
<td>2nd and 3rd cuts</td>
<td>3.67</td>
</tr>
<tr>
<td>Priaxor</td>
<td>4.50</td>
</tr>
</tbody>
</table>

**Increased leaf retention**

<table>
<thead>
<tr>
<th></th>
<th>Untreated</th>
<th>Priaxor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st cut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priaxor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 3rd cuts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priaxor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

1 All comparisons are to untreated, unless otherwise stated. 2 For alfalfa not for seed production, a maximum of two applications per season is permitted. 3 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.

Frost events:
Include any damaged leaves on the bottom of the plant. If frost occurs at 2nd leaf, the next leaf emerged is counted as the 3rd leaf.

TECH TIP

RESOURCES
Identifying soybean stages.

R1: Beginning bloom.
The 1st 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.

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 (MMOEA) 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 with a minimum 20 gallons per acre for good contact and optimal coverage.

Add AMS for enhanced activity on tough weeds.¹

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.

¹ See label for specific weeds.

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

Control of velvetleaf, ragweed, lamb’s quarters, barnyard grass and green foxtail

6 AM | 9 AM | Noon | 3 PM | 6 PM | 9 PM | Midnight
---|---|---|---|---|---|---
84 | 93 | 96 | 97 | 96 | 86 | 65


Learn more about spraying Liberty 200 SN by visiting our online learning module at agsolutions.ca/liberty200sn-module.
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.

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

* 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 rinsate¹
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 rinsate¹
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 rinsate¹
5. Record spray cleanout procedure and date.

¹ 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 sunset.

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


Visit agsolutions.ca/applicationstewardship to learn more. Access the Engenia Spray Tool at engeniaspraytool.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. 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.

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).

How to control waterhemp.

<table>
<thead>
<tr>
<th>Glyphosate-tolerant corn</th>
<th>Roundup Ready 2 Xtend® soybeans</th>
<th>XtendFlex® soybeans</th>
<th>Enlist E3™ soybeans</th>
<th>Conventional/IP soybeans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-plant/Pre-emergence</td>
<td>Zidua® SC herbicide + Marksman® herbicide or followed by Integrity® herbicide</td>
<td>Zidua SC + Engenia® herbicide + Eragon® Plus herbicide/Integrity® herbicide</td>
<td>Zidua SC + Engenia + Eragon Plus/Integrity® herbicide</td>
<td>Zidua SC (Check with your grain buyer;)*</td>
</tr>
<tr>
<td>Post-emergence</td>
<td>Marksman® + Amazon® PRO herbicide/ Zidua SC</td>
<td>Engenia® (up to 2nd trifoliate) or Liberty® 200 SN herbicide</td>
<td>Liberty 200 SN or Zidua SC</td>
<td>Zidua SC (Check with your grain buyer;)*</td>
</tr>
<tr>
<td>Post-harvest</td>
<td>–</td>
<td>Distinct herbicide</td>
<td>Distinct</td>
<td>Distinct</td>
</tr>
</tbody>
</table>

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)

*Waterhemp: biology and control,* Field Crop News, https://fieldcropnews.com/2020/07/waterhemp-biology-and-control/. 2 Bulletin d’information malherbologie No 6 du RAP, 2022. 3 Biology and the management of waterhemp, 2017. 4 Sellers et al., 2017. 5 Can only be applied once per season. 6 Marksman can only be applied pre-emergence. 7 In a tank mix with glyphosate. 8 In a tank mix with glyphosate and Merge® adjuvant. 9 Talk to your grain buyer regarding maximum residue limits (MRLs) for markets around the world before applying to conventional or IP soybeans.
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.

<table>
<thead>
<tr>
<th>Weed</th>
<th>Helpful information</th>
<th>Picture</th>
</tr>
</thead>
</table>
| Annual or rough stalk bluegrass | • Emerges in fall and early spring  
• Propagates through seeds or rhizomes  
• Consider a fall or early spring herbicide application to reduce late-season development or further spring establishment |         |
| Common ragweed               | • Herbicide resistance to Group 2, 5, 9, 14 in Ontario and Quebec  
• Ability to emerge late in growing season (large seed)  
• Select a residual herbicide and scout for late-season escapes to control when small  
• Lookalike weeds include biennial wormwood and wild carrot | 2       |
| Lamb’s quarters              | • Waxy cuticle and mineral deposits prevent absorption of herbicide  
• Control at pre-emergence with an effective residual herbicide  
• Consider an adjuvant to increase herbicide penetration post-emergence  
• Can be confused with spreading atriplex and goosefoot species | 3       |
| Perennial sow thistle        | • Reproduces by seeds or underground roots  
• If left uncontrolled, becomes an extensive root system to manage  
• Consider a fall application for better herbicide uptake by the roots  
• Lookalike weeds are prickly lettuce and annual sow thistle |         |
| Velvetleaf                   | • Fine hairs on the leaves and stem can prevent absorption of herbicide  
• Manage velvetleaf when small and actively growing  
• Consider an adjuvant to increase post-emergent herbicide penetration | 4       |

1,2,3,4,5 Source: BASF.
Tar spot, is it in your field?

Tar spot can reduce corn yields by up to 50 bu/ac under high infestations. 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.

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® fungicide or Veltyma DLX. Click here to learn more about Veltyma and Veltyma DLX.

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**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.

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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**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mode of action</th>
<th>BASF products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acetyl CoA Carboxylase (ACCase) Inhibitors</td>
<td>Poast®, Ultra and Select®</td>
</tr>
<tr>
<td>2</td>
<td>ALS (Acetolactate Synthase) Inhibitors</td>
<td>Pursuit®, component in Clean Sweep®, Conquest® LQ</td>
</tr>
<tr>
<td>3</td>
<td>Mitosis (Microtubule Assembly) Inhibitors</td>
<td>Prowl® H2O</td>
</tr>
<tr>
<td>4</td>
<td>Synthetic Auxins</td>
<td>Engenia®, component in Distinct® and Marksman®</td>
</tr>
<tr>
<td>5</td>
<td>Photosystem II Inhibitors (different binding site than 6 &amp; 7)</td>
<td>Component in Conquest LQ and Marksmen</td>
</tr>
<tr>
<td>6</td>
<td>Photosystem II Inhibitors (different binding site than 5 &amp; 7)</td>
<td>Basagran® Forte, component in Clean Sweep</td>
</tr>
<tr>
<td>9</td>
<td>EPSP (5-enolpyruvylshikimate-3-phosphate) Synthase Inhibitor</td>
<td>Glyphosate¹</td>
</tr>
<tr>
<td>10</td>
<td>Glutamine Synthetase Inhibitors</td>
<td>Liberty® 200 SN and Ignite®</td>
</tr>
<tr>
<td>14</td>
<td>Protoporphyrinogen Oxidase (PPO) Inhibitors</td>
<td>Component in Eragon® Plus and Integrity®</td>
</tr>
<tr>
<td>15</td>
<td>Mitosis (Very Long Chain Fatty Acids Synthesis) Inhibitors</td>
<td>Frontier® Max, Zidua® SC, component in Armezon® PRO and Integrity</td>
</tr>
<tr>
<td>19</td>
<td>Inhibition of auxin transport</td>
<td>Component in Distinct</td>
</tr>
<tr>
<td>27</td>
<td>Carotenoid Biosynthesis (p-hydroxyphenyl pyruvate dioxygenase [HPPD]) Inhibitors</td>
<td>Armezon, component in Armezon PRO</td>
</tr>
</tbody>
</table>

**Fungicides**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mode of action</th>
<th>BASF products</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Sterol Biosynthesis (Demethylation) Inhibitors</td>
<td>Caramba®, Cevya®, Sphaerex®, component in Cotegra®, Veltyma® and Veltyma DLX</td>
</tr>
<tr>
<td>7</td>
<td>Respiration (Complex II: Succinate-dehydrogenase) Inhibitors</td>
<td>Sercadis®, component in Cotegra and Priaxor®</td>
</tr>
<tr>
<td>11</td>
<td>Respiration (Complex II: Quinone Outside) Inhibitors</td>
<td>Headline®, component in Priaxor, Veltyma and Veltyma DLX</td>
</tr>
<tr>
<td>40</td>
<td>Cell Wall Biosynthesis (Cellulose Synthase)</td>
<td>Forum® and component in Zampro®</td>
</tr>
<tr>
<td>45</td>
<td>Respiration (Complex III: Quinone outside, stagmatellin binding type) Inhibitors</td>
<td>Component in Zampro</td>
</tr>
<tr>
<td>BM02</td>
<td>Biological (Microbial)</td>
<td>Serifel®</td>
</tr>
</tbody>
</table>

**Insecticides**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mode of action</th>
<th>BASF products</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Nicotinic Acetylcholine Receptor Competitive Modulator</td>
<td>Titan®</td>
</tr>
<tr>
<td>9D</td>
<td>Chordotonal Organ TRPV Channel Modulator</td>
<td>Sefina®</td>
</tr>
<tr>
<td>30</td>
<td>GABA-Gated Chloride Channel Allosteric Modulator</td>
<td>Cimegra®</td>
</tr>
</tbody>
</table>

¹ Not a product of BASF.
Need product details? We’ve got them right here.

Key information to keep you moving.

<table>
<thead>
<tr>
<th>Product</th>
<th>Armezon®</th>
<th>Armezon PRO</th>
<th>Basgran® Forte</th>
<th>Caramba®</th>
<th>Cevya®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Topramezone</td>
<td>Dimethenamid-P, Topramezone</td>
<td>Bentazon</td>
<td>Metconazole</td>
<td>Mefentrifluconazole</td>
</tr>
<tr>
<td>Concentration</td>
<td>336 g/L</td>
<td>630 g/L, 12.5 g/L</td>
<td>480 g/L</td>
<td>90 g/L</td>
<td>400 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Group</td>
<td>27</td>
<td>15, 27</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Formulation</td>
<td>Liquid suspension</td>
<td>Emulsifiable concentrate</td>
<td>Liquid</td>
<td>Liquid</td>
<td>Suspension concentrate</td>
</tr>
<tr>
<td>WAMLEGS</td>
<td>L</td>
<td>E</td>
<td>L</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac&lt;sup&gt;a&lt;/sup&gt;</td>
<td>40-80, 10-20</td>
<td>Minimum 40, 10</td>
<td>Minimum 40, 10</td>
<td>Minimum 80, 20</td>
<td>Minimum 40, 10</td>
</tr>
<tr>
<td>Aerial application</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>Dependent on the glyphosate used</td>
<td>Dependent on the glyphosate used</td>
<td>6</td>
<td>1</td>
<td>Avoid application if heavy rain is forecast</td>
</tr>
<tr>
<td>REI (hours)</td>
<td>12</td>
<td>24</td>
<td>12</td>
<td>12&lt;sup&gt;b&lt;/sup&gt;</td>
<td>12</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>45 for corn harvest (silage, fodder or grain).</td>
<td>80 for corn; 45 for grazing or feeding treated corn forage, silage, fodder or grain to livestock.</td>
<td>Do not graze treated alfalfa or cut for hay within 20 days of application. See label for other crops.</td>
<td>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.</td>
<td>7 for potatoes.</td>
</tr>
<tr>
<td>Storage</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>1.12</td>
<td>1.12</td>
<td>1.19</td>
<td>1.05</td>
<td>1.15</td>
</tr>
</tbody>
</table>

---

<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).  

Information presented is for quick reference only. Always refer to product label.
<table>
<thead>
<tr>
<th>Product</th>
<th>Cimegra®</th>
<th>Clean Sweep®</th>
<th>Conquest® LQ</th>
<th>Cotegra®</th>
<th>Distinct®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Broflanilide</td>
<td>Imazethapyr, Bentazon</td>
<td>Imazethapyr, Metribuzin</td>
<td>Prothioconazole, Boscalid</td>
<td>Dicamba, Diflufenzopyr</td>
</tr>
<tr>
<td>Concentration</td>
<td>100 g/L</td>
<td>240 g/L, 480 g/L</td>
<td>240 g/L, 480 g/L</td>
<td>150 g/L, 250 g/L</td>
<td>50% a.e., 20% a.e.</td>
</tr>
<tr>
<td>Type</td>
<td>I</td>
<td>H</td>
<td>H</td>
<td>F</td>
<td>H</td>
</tr>
<tr>
<td>Group</td>
<td>30</td>
<td>2, 6</td>
<td>2, 5</td>
<td>3, 7</td>
<td>4, 19</td>
</tr>
<tr>
<td>Formulation</td>
<td>Suspension concentrate</td>
<td>Solution, Liquid</td>
<td>Solution, Suspension concentrate</td>
<td>Suspension concentrate</td>
<td>Wettable granule</td>
</tr>
<tr>
<td>WAMLEGS</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>W</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac^a</td>
<td>Minimum 20, 5 for in-furrow 40-80, 10-20 for foliar</td>
<td>80-120, 20-30</td>
<td>60-120, 15-32</td>
<td>Minimum 80, 20</td>
<td>40-80, 10-20</td>
</tr>
<tr>
<td>Aerial application</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>Avoid application if heavy rain is forecast</td>
<td>6</td>
<td>Avoid application if heavy rain is forecast</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>REI (hours)</td>
<td>N/A for in-furrow, 12 for foliar</td>
<td>12</td>
<td>12</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>N/A for in-furrow, 14 for foliar.</td>
<td>100 for soybeans.</td>
<td>100 for soybeans.</td>
<td>21 for dry beans and soybeans; 36 for canola.</td>
<td>See label.</td>
</tr>
<tr>
<td>Storage</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Store in a cool, dry area.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>1.06</td>
<td>1.11, 1.19</td>
<td>1.11, 1.16</td>
<td>1.15</td>
<td>0.61</td>
</tr>
</tbody>
</table>

* Use higher water volumes to ensure adequate coverage.
<table>
<thead>
<tr>
<th>Product</th>
<th>Engenia®</th>
<th>Eragon® LQ – pre-plant</th>
<th>Eragon LQ – pre-harvest</th>
<th>Forum®</th>
<th>Frontier® Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active ingredient(s)</strong></td>
<td>Dicamba</td>
<td>Saflufenacil</td>
<td>Saflufenacil</td>
<td>Dimethomorph</td>
<td>Dimethenamid-P</td>
</tr>
<tr>
<td><strong>Concentration</strong></td>
<td>600 g/L</td>
<td>342 g/L</td>
<td>342 g/L</td>
<td>500 g/L</td>
<td>720 g/L</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>F</td>
<td>H</td>
</tr>
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<td><strong>Group</strong></td>
<td>4</td>
<td>14</td>
<td>14</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td><strong>Formulation</strong></td>
<td>Solution</td>
<td>Water-based suspension concentrate</td>
<td>Water-based suspension concentrate</td>
<td>Suspension concentrate</td>
<td>Emulsifiable concentrate</td>
</tr>
<tr>
<td><strong>WAMLEGs</strong></td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>E</td>
</tr>
<tr>
<td><strong>Ground water volume L/ac, gal/aca</strong></td>
<td>Minimum 40, 10 for soybeans</td>
<td>40-80, 10-20</td>
<td>80, 20</td>
<td>20-40, 5-10 for concentrate, 90-650, 24-172 for dilute</td>
<td>Minimum 70, 17</td>
</tr>
<tr>
<td><strong>Aerial application</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Rainfast (hours)</strong></td>
<td>4</td>
<td>Dependent on the glyphosate used</td>
<td>Dependent on the glyphosate used</td>
<td>2</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>REI (hours)</strong></td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td><strong>Pre-harvest interval (days)</strong></td>
<td>See label.</td>
<td>60 for barley, corn (field, sweet), soybeans, oats and wheat (spring, winter, durum).</td>
<td>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.</td>
<td>4 for potatoes.</td>
<td>40 for potatoes. See label for other crops.</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Keep dry.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Store in a cool, dry area.</td>
</tr>
<tr>
<td><strong>Bulk density (g/cm³)</strong></td>
<td>1.24</td>
<td>1.15</td>
<td>1.15</td>
<td>1.15</td>
<td>1.13</td>
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</tbody>
</table>

* Use higher water volumes to ensure adequate coverage.
<table>
<thead>
<tr>
<th>Product</th>
<th>Headline®</th>
<th>Headline AMP</th>
<th>Ignite®</th>
<th>ILEVO®</th>
<th>Integrity®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Pyraclostrobin, Metconazole, Pyraclostrobin</td>
<td>Glufosinate ammonium</td>
<td>Fluopyram</td>
<td>Saflufenacil, Dimethenamid-P</td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td>250 g/L</td>
<td>55 g/L, 146 g/L</td>
<td>150 g/L</td>
<td>600 g/L</td>
<td>68 g/L, 600 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>F</td>
<td>F</td>
<td>H</td>
<td>ST</td>
<td>H</td>
</tr>
<tr>
<td>Group</td>
<td>11</td>
<td>3, 11</td>
<td>10</td>
<td>7</td>
<td>14, 15</td>
</tr>
<tr>
<td>Formulation</td>
<td>Emulsifiable concentrate</td>
<td>Liquid</td>
<td>Solution</td>
<td>Suspension</td>
<td>Emulsifiable concentrate</td>
</tr>
<tr>
<td>WAMLEGS</td>
<td>E</td>
<td>L</td>
<td>L</td>
<td>N/A</td>
<td>E</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac²</td>
<td>Minimum 40, 10 (For potatoes: minimum 80, 20)</td>
<td>40-80, 10-20</td>
<td>Minimum 45, 12</td>
<td>Uniform distribution on the seed</td>
<td>40-80, 10-20</td>
</tr>
<tr>
<td>Aerial application</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>1</td>
<td>4</td>
<td>N/A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>REI (hours)</td>
<td>12</td>
<td>12³</td>
<td>12</td>
<td>N/A</td>
<td>12</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>For potatoes. See label for other crops.</td>
<td>Barley, oats, 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.</td>
<td>9 for dry beans.</td>
<td>N/A</td>
<td>100 for field corn; 60 for sweet corn and soybeans.</td>
</tr>
<tr>
<td>Storage</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Store in a cool, dry area.</td>
<td>Store in an unheated, dry area.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>1.06</td>
<td>1.06</td>
<td>1.11</td>
<td>1.24</td>
<td>1.09</td>
</tr>
</tbody>
</table>

³ Use higher water volumes to ensure adequate coverage. ³ Except for hand harvesting or hand detasseling corn (13 days) and hand-set irrigation in corn (1 day).
<table>
<thead>
<tr>
<th>Product</th>
<th>Insure® Cereal FX4 + Relenya®</th>
<th>Liberty® 200 SN</th>
<th>Marksman®</th>
<th>Optill®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Triticonazole, Metalaxyl, Fluxapyroxad, Pyraclostrobin</td>
<td>Mefenflufonazole</td>
<td>Glufosinate ammonium</td>
<td>Dicamba, Atrazine, Imazethapyr, Saflufenacil</td>
</tr>
<tr>
<td>Concentration</td>
<td>16.7 g/L, 10 g/L, 8.35 g/L, 16.7 g/L</td>
<td>400 g/L</td>
<td>200 g/L</td>
<td>132 g/L, 261 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>ST</td>
<td>ST</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Group</td>
<td>3, 4, 7, 11</td>
<td>3</td>
<td>10</td>
<td>4, 5</td>
</tr>
<tr>
<td>Formulation</td>
<td>Water-based suspension</td>
<td>Water-based suspension</td>
<td>Solution</td>
<td>Suspension</td>
</tr>
<tr>
<td>WAMLEGs</td>
<td>N/A</td>
<td>N/A</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac</td>
<td>See label</td>
<td>See label</td>
<td>Minimum 80, 20</td>
<td>90-140, 25-35</td>
</tr>
<tr>
<td>Aerial application</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>Avoid application if heavy rain is forecast</td>
<td>N/A</td>
<td>4</td>
<td>Avoid application if heavy rain is forecast</td>
</tr>
<tr>
<td>REI (hours)</td>
<td>N/A</td>
<td>N/A</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>N/A</td>
<td>N/A</td>
<td>86 for corn; 70 for soybeans; 60 for canola. 20 for grazing treated corn or soybean fields.</td>
<td>60 for corn. Do not graze or cut for fodder before crop maturity (ear emergence).</td>
</tr>
<tr>
<td>Storage</td>
<td>Store in a cool, dry area. Avoid freezing and temperatures above 30°C.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Store in a cool, dry area.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>1.07</td>
<td>1.15</td>
<td>1.10</td>
<td>1.17</td>
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</tbody>
</table>

* Use higher water volumes to ensure adequate coverage.
<table>
<thead>
<tr>
<th>Product</th>
<th>Poast® Ultra</th>
<th>Priaxor®</th>
<th>Prowl® H20</th>
<th>Pursuit®</th>
<th>Sefina®</th>
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<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Sethoxydim</td>
<td>Fluxapyroxad, Pyraclostrobin</td>
<td>Pendimethalin</td>
<td>Imazethapyr</td>
<td>Afidopyropen</td>
</tr>
<tr>
<td>Concentration</td>
<td>450 g/L</td>
<td>167 g/L, 333 g/L</td>
<td>455 g/L</td>
<td>240 g/L</td>
<td>50 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>H</td>
<td>F</td>
<td>H</td>
<td>H</td>
<td>I</td>
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<td>7, 11</td>
<td>3</td>
<td>2</td>
<td>90</td>
</tr>
<tr>
<td>Formulation</td>
<td>Emulsifiable concentrate</td>
<td>Liquid suspension</td>
<td>Microcapsule suspension</td>
<td>Solution</td>
<td>Emulsifiable concentrate</td>
</tr>
<tr>
<td>WAMLEGS</td>
<td>E</td>
<td>L</td>
<td>M</td>
<td>L</td>
<td>E</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac</td>
<td>20-80, 5-20</td>
<td>40-80, 10-20</td>
<td>40-80, 10-20</td>
<td>40-160, 10-40</td>
<td>Minimum 40-80, 10-20 for potatoes and soybeans</td>
</tr>
<tr>
<td>Aerial application</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
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<td>1</td>
<td>N/A</td>
<td>12</td>
<td>Avoid application if heavy rain is forecast</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
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<td>12</td>
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<td>Avoid application if heavy rain is forecast</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>70 for alfalfa and canola; 80 for dry beans, potatoes and soybeans.</td>
<td>21 for canola, corn and soybeans; 7 for sweet corn; 14 for alfalfa. See label for other crops.</td>
<td>100 for soybeans. See label for other crops.</td>
<td>100 for dry beans, imazethapyr-tolerant corn and soybeans. Do not graze treated crops or cut for hay.</td>
<td>0 for Crop Group 17 &amp; 18 (alfalfa), 7 for potatoes and soybeans. See label for other crops.</td>
</tr>
<tr>
<td>Storage</td>
<td>Store in a cool, dry area.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Store in a cool, dry area.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>1.00</td>
<td>1.16</td>
<td>1.18</td>
<td>1.11</td>
<td>1.03</td>
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</tbody>
</table>

* Use higher water volumes to ensure adequate coverage.
<table>
<thead>
<tr>
<th>Product</th>
<th>Select®</th>
<th>Sercadis®</th>
<th>Serifel®</th>
<th>Sphaerex®</th>
<th>Teraxxa® F4</th>
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</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Clethodim</td>
<td>Fluxapyroxad</td>
<td><em>Bacillus amyloliquefaciens</em> strain MBI 600</td>
<td>Metconazole, Prothioconazole</td>
<td>Broflanilide, Trityconazole, Metalaxyl, Fluxapyroxad, Pyraclostrobin</td>
</tr>
<tr>
<td>Concentration</td>
<td>240 g/L</td>
<td>300 g/L</td>
<td>Not less than 5.5 x 10¹⁰ viable spores/g</td>
<td>112.5 g/L, 187.5 g/L</td>
<td>16.7 g/L, 16.7 g/L, 10 g/L, 8.35 g/L, 16.7 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>H</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>I, F</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>7</td>
<td>BM02</td>
<td>3</td>
<td>I: 30, F: 3, 4, 7, 11</td>
</tr>
<tr>
<td>Formulation</td>
<td>Emulsifiable concentrate</td>
<td>Suspension</td>
<td>Wettable powder</td>
<td>Emulsifiable concentrate</td>
<td>Water-based suspension</td>
</tr>
<tr>
<td>WAMLEGs</td>
<td>E</td>
<td>L</td>
<td>W</td>
<td>E</td>
<td>N/A</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/acre</td>
<td>Minimum 60, 15</td>
<td>Minimum 40, 10</td>
<td>Minimum 20, 5</td>
<td>80, 20</td>
<td>See label</td>
</tr>
<tr>
<td>Aerial application</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>1</td>
<td>1</td>
<td>Avoid application if heavy rain is forecast</td>
<td>Avoid application if heavy rain is forecast</td>
<td>N/A</td>
</tr>
<tr>
<td>REI (hours)</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>24</td>
<td>N/A</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>60 for canola. See label for other crops.</td>
<td>7 for potatoes.</td>
<td>0 for all crops.</td>
<td>30 for barley, oats, rye, triticale and wheat.</td>
<td>N/A</td>
</tr>
<tr>
<td>Storage</td>
<td>Store in a cool, dry area.</td>
<td>Protect from freezing.</td>
<td>Store between 5°C and 25°C.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
</tr>
<tr>
<td>Bulk density (g/cm³)</td>
<td>0.96</td>
<td>N/A</td>
<td>0.2-1.2</td>
<td>1.03</td>
<td>1.08</td>
</tr>
</tbody>
</table>

* Use higher water volumes to ensure adequate coverage.
<table>
<thead>
<tr>
<th>Product</th>
<th>Titan&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Veltyma&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Veltyma DLX</th>
<th>Zampro&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Zidua&lt;sup&gt;®&lt;/sup&gt; SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active ingredient(s)</td>
<td>Clothianidin, Mefentrifluconazole, Pyraclostrobin</td>
<td>Metconazole, Mefentrifluconazole, Pyraclostrobin</td>
<td>Metconazole, Mefentrifluconazole, Pyraclostrobin</td>
<td>Dimethomorph, Ametoctradin</td>
<td>Pyroxasulfone</td>
</tr>
<tr>
<td>Concentration</td>
<td>600 g/L</td>
<td>200 g/L, 200 g/L</td>
<td>90 g/L, 200 g/L, 200 g/L</td>
<td>225 g/L, 300 g/L</td>
<td>500 g/L</td>
</tr>
<tr>
<td>Type</td>
<td>I</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>H</td>
</tr>
<tr>
<td>Group</td>
<td>4</td>
<td>3, 11</td>
<td>3, 11</td>
<td>40, 45</td>
<td>15</td>
</tr>
<tr>
<td>Formulation</td>
<td>Suspension</td>
<td>Suspension concentrate</td>
<td>Liquid, Suspension concentrate</td>
<td>Suspension</td>
<td>Suspension concentrate</td>
</tr>
<tr>
<td>WAMLEGS</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Ground water volume L/ac, gal/ac&lt;sup&gt;a&lt;/sup&gt;</td>
<td>See label</td>
<td>40-80, 10-20</td>
<td>Minimum 80, 20</td>
<td>Minimum 80, 20</td>
<td>Minimum 40, 10</td>
</tr>
<tr>
<td>Aerial application</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rainfast (hours)</td>
<td>Avoid application if heavy rain is forecast</td>
<td>Avoid application if heavy rain is forecast</td>
<td>Avoid application if heavy rain is forecast</td>
<td>2</td>
<td>N/A</td>
</tr>
<tr>
<td>REI (hours)</td>
<td>12</td>
<td>12</td>
<td>12&lt;sup&gt;b&lt;/sup&gt;</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Pre-harvest interval (days)</td>
<td>N/A</td>
<td>7 for potatoes, 21 for canola, corn, soybeans, sugar beets and wheat. See label for other crops.</td>
<td>21 for corn.</td>
<td>4 for potatoes.</td>
<td>Not specified. Follow the application timing for the crop on the label. Harvest can occur at crop maturity.</td>
</tr>
<tr>
<td>Storage</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
<td>Protect from freezing.</td>
</tr>
<tr>
<td>Bulk density (g/cm&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>1.25</td>
<td>1.14</td>
<td>1.05, 1.14</td>
<td>1.11</td>
<td>1.21</td>
</tr>
</tbody>
</table>

<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.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Armonz®</th>
<th>Armonz PRO</th>
<th>Basagran® Forte</th>
<th>Clean Sweep®</th>
<th>Conquest® LQ</th>
<th>Distinct®</th>
<th>Engenia®</th>
<th>Eragon® Plus (fall application)</th>
<th>Eragon Plus (spring application)</th>
<th>Frontier® Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>FS¹</td>
<td>FS</td>
<td>0 D²</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>FS</td>
<td>FS</td>
<td>100 D¹⁵</td>
</tr>
<tr>
<td>Barley</td>
<td>B</td>
<td>B</td>
<td>&lt; 1 M³</td>
<td>FS¹</td>
<td>FS¹</td>
<td>30 D</td>
<td>FS</td>
<td>FS</td>
<td>FS</td>
<td>0 D</td>
</tr>
<tr>
<td>Beans (kidney)</td>
<td>FS¹</td>
<td>FS</td>
<td>0 D²</td>
<td>CF³/FS</td>
<td>CF²/FS</td>
<td>30 D</td>
<td>FS</td>
<td>FS</td>
<td>FS</td>
<td>0 D</td>
</tr>
<tr>
<td>Beans (white)</td>
<td>FS¹</td>
<td>FS</td>
<td>&lt; 1 M³</td>
<td>CF³/FS</td>
<td>CF²/FS</td>
<td>30 D</td>
<td>FS</td>
<td>FS</td>
<td>FS</td>
<td>0 D</td>
</tr>
<tr>
<td>Canola</td>
<td>FS</td>
<td>FS</td>
<td>&lt; 1 M³</td>
<td>CF³/FS®</td>
<td>CF³/FS®</td>
<td>30 D</td>
<td>FS</td>
<td>FS</td>
<td>FS</td>
<td></td>
</tr>
<tr>
<td>Corn (field)</td>
<td>CF/FS</td>
<td>CF/FS</td>
<td>0 D²</td>
<td>CF²/FS</td>
<td>CF²/FS</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>0 D</td>
<td></td>
</tr>
<tr>
<td>Corn (seed)</td>
<td>B</td>
<td>B</td>
<td>0 D²</td>
<td>CF²/FS</td>
<td>CF²/FS</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>0 D</td>
<td></td>
</tr>
<tr>
<td>Corn (sweet)</td>
<td>B</td>
<td>B</td>
<td>&lt; 1 M³</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>0 D</td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td>B</td>
<td>B</td>
<td>&lt; 1 M³</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>100 D¹⁵</td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td>FS¹</td>
<td>FS</td>
<td>&lt; 1 M³</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>FS</td>
<td></td>
</tr>
<tr>
<td>Rye</td>
<td>B</td>
<td>B</td>
<td>&lt; 1 M³</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>CF²/FS</td>
<td>100 D¹⁵</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td>FS¹</td>
<td>FS</td>
<td>0 D²</td>
<td>CF³/FS</td>
<td>CF³/FS</td>
<td>30 D</td>
<td>0 D¹¹</td>
<td>FS</td>
<td>CF³,5/FS</td>
<td>0 D</td>
</tr>
<tr>
<td>Sugar beets</td>
<td>B</td>
<td>B</td>
<td>&lt; 1 M³</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>FS</td>
<td>CF³,5/FS</td>
<td>0 D</td>
<td></td>
</tr>
<tr>
<td>Wheat (spring)</td>
<td>FS</td>
<td>FS</td>
<td>&lt; 1 M³</td>
<td>FS</td>
<td>FS³</td>
<td>30 D</td>
<td>FS</td>
<td>CF³,5/FS</td>
<td>100 D¹⁵</td>
<td></td>
</tr>
<tr>
<td>Wheat (winter)</td>
<td>4 M</td>
<td>4 M</td>
<td>&lt; 1 M³</td>
<td>100 D³/FS</td>
<td>100 D³,9/FS</td>
<td>30 D</td>
<td>FS</td>
<td>CF³,5/FS</td>
<td>100 D¹⁵</td>
<td></td>
</tr>
<tr>
<td>Other crops</td>
<td>B</td>
<td>B</td>
<td>0 D²</td>
<td>B</td>
<td>B</td>
<td>30 D</td>
<td>120 D</td>
<td>11 M¹³</td>
<td>11 M¹³</td>
<td></td>
</tr>
</tbody>
</table>

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

**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.
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Ignite&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Integrity&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Liberty&lt;sup&gt;®&lt;/sup&gt; 200 SN</th>
<th>Marksman&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Optill&lt;sup&gt;®&lt;/sup&gt; Ultra</th>
<th>Prowl&lt;sup&gt;®&lt;/sup&gt; H2O</th>
<th>Pursuit&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Select&lt;sup&gt;®&lt;/sup&gt;</th>
<th>Zidus&lt;sup&gt;®&lt;/sup&gt; SC (fall application)</th>
<th>Zidus SC (spring application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>0</td>
<td>0</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>B</td>
<td>0</td>
<td>B</td>
<td>B</td>
<td>0 D&lt;sup&gt;22&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Barley</td>
<td>70</td>
<td>100</td>
<td>70 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>FS&lt;sup&gt;4&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>0 D&lt;sup&gt;22&lt;/sup&gt;</td>
<td>B</td>
</tr>
<tr>
<td>Beans (kidney)</td>
<td>0 D&lt;sup&gt;17&lt;/sup&gt;</td>
<td>FS</td>
<td>CF&lt;sup&gt;13,21&lt;/sup&gt;/FS&lt;sup&gt;21&lt;/sup&gt;</td>
<td>CF/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>0 D</td>
<td>B</td>
<td>B</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Beans (white)</td>
<td>0 D&lt;sup&gt;17&lt;/sup&gt;</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>CF&lt;sup&gt;13,21&lt;/sup&gt;/FS&lt;sup&gt;21&lt;/sup&gt;</td>
<td>CF/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>0 D</td>
<td>B</td>
<td>B</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Canola</td>
<td>0</td>
<td>0</td>
<td>22 M&lt;sup&gt;2&lt;/sup&gt;</td>
<td>B</td>
<td>0 D</td>
<td>B</td>
<td>B</td>
<td>0 D</td>
<td>B</td>
<td>12 M&lt;sup&gt;22&lt;/sup&gt;</td>
</tr>
<tr>
<td>Corn (field)</td>
<td>0 D</td>
<td>0</td>
<td>0</td>
<td>FS</td>
<td>CF&lt;sup&gt;13,21&lt;/sup&gt;/FS&lt;sup&gt;21&lt;/sup&gt;</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn (seed)</td>
<td>0</td>
<td>4 M&lt;sup&gt;2&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Corn (sweet)</td>
<td>0 D</td>
<td>0</td>
<td>0</td>
<td>B</td>
<td>0 D</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td>70 D</td>
<td>100</td>
<td>70 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>11 M&lt;sup&gt;22&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td>0</td>
<td>100</td>
<td>0 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>0 D</td>
<td>FS</td>
<td></td>
</tr>
<tr>
<td>Rye</td>
<td>70 D</td>
<td>100</td>
<td>70 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td>0</td>
<td>0</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>CF&lt;sup&gt;3,21&lt;/sup&gt;/FS</td>
<td>0 D</td>
<td>CF&lt;sup&gt;13,21&lt;/sup&gt;/FS&lt;sup&gt;21&lt;/sup&gt;</td>
<td>CF/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td>FS/F&lt;sup&gt;22&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Sugar beets</td>
<td>22 M&lt;sup&gt;14&lt;/sup&gt;</td>
<td>0</td>
<td>22 M&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Wheat (spring)</td>
<td>70 D</td>
<td>100</td>
<td>70 D</td>
<td>22 M&lt;sup&gt;2&lt;/sup&gt;</td>
<td>FS</td>
<td>B</td>
<td>FS</td>
<td>B</td>
<td>FS&lt;sup&gt;22&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Wheat (winter)</td>
<td>70 D</td>
<td>100</td>
<td>70 D</td>
<td>12 M&lt;sup&gt;20&lt;/sup&gt;</td>
<td>100 D&lt;sup&gt;3,21&lt;/sup&gt;/FS</td>
<td>100 D&lt;sup&gt;3,21&lt;/sup&gt;/FS</td>
<td>100 D&lt;sup&gt;3,21&lt;/sup&gt;/FS</td>
<td>B</td>
<td>4 M</td>
<td></td>
</tr>
<tr>
<td>Other crops</td>
<td>120 D</td>
<td>11 M&lt;sup&gt;19&lt;/sup&gt;</td>
<td>120 D</td>
<td>B</td>
<td>30 D</td>
<td>30 D</td>
<td>30 D</td>
<td>30 D</td>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

1 If the maximum seasonal application rate was 37 ml/ha. 2 None listed on label. Information based on OMAFRA’s 2021 Publication 75A, Guide to Weed Control: Field Crops. 3 Applies to fall rye only. 4 Spring barley only.
5 Soil preparation for re-planting should be no deeper than 10 cm. 6 Imazethapyr-tolerant canola only. 7 Only imazethapyr-tolerant corn can be used in case of crop failure. 8 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. 9 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). 10 If using for perennial rosette control in summerfallow or perennial weed control in summerfallow and stubble, refer to the label for recropping restrictions. 11 Roundup Ready® 2 Xtend® soybeans and XtendFlex® soybeans only. 12 All crops can be planted the second spring after application. 13 A second application of the product cannot be made in the rescue crop. 14 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. 15 For mineral soil, if applied to muck soils, a field bioassay must be done. 16 Inbred lines grown in Southern Ontario only. 17 Not grown for seed. 18 22 months at the 1.1 L/ha rate, 11 months for lower rates. 19 22 months for peppers and onions at 1.1 L/ha and 0.73 L/ha rate. 20 Information obtained from labels of solo atrazine products available for purchase by growers as of the publication date of this guide. 21 See label for crop dependent restrictions. 22 Seedling alfalfa. 23 At the seasonal rate of 120-240 ml/ha.
Mixing order for tank mixes.

Ensure tank-mix compatibility by using the proper mixing order:

**W**ettable powders, flowable
Distinct® herbicide, Optill® herbicide, Serifel® fungicide

**A**gitate¹, **A**nti-foaming compounds, buffers
¹ Do not over-agitate at any point in the process.

**M**icrocapsule suspension
Prowl® H2O herbicide

**L**iquid and soluble

**E**mulsifiable concentrates
Armezon PRO herbicide, Frontier® Max herbicide, Headline fungicide, Integrity® herbicide, Poast® Ultra herbicide, Sefina® insecticide, Select® herbicide, Sphaerex® fungicide

**G**lyphosate
(high load, containing adjuvant)

**S**urfactants
Merge® adjuvant

---

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
2. Amigo® adjuvant
3. Liberty 200 SN
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:**

<table>
<thead>
<tr>
<th>Available products</th>
<th>Volume</th>
<th>Acres/tote</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrity</strong></td>
<td>450 L</td>
<td>1,010 to 1,525 (corn rate) 3,000 (soybean rate)</td>
</tr>
<tr>
<td><strong>Liberty® 200 SN</strong></td>
<td>400 L</td>
<td>400¹</td>
</tr>
<tr>
<td><strong>Marksman®</strong></td>
<td>450 L</td>
<td>247 to 444</td>
</tr>
<tr>
<td><strong>Merge®</strong></td>
<td>400 L</td>
<td>Rate will vary depending on tank mix</td>
</tr>
<tr>
<td><strong>Prowl® H2O</strong></td>
<td>450 L</td>
<td>506 (soybean rate)</td>
</tr>
</tbody>
</table>

**Shuttles:**

<table>
<thead>
<tr>
<th>Available products</th>
<th>Volume</th>
<th>Acres/shuttle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Armezon® PRO</strong></td>
<td>121.5 L</td>
<td>300</td>
</tr>
<tr>
<td><strong>Basagran® Forte</strong></td>
<td>130 L</td>
<td>145 to 185</td>
</tr>
<tr>
<td><strong>Engenia®</strong></td>
<td>121.2 L</td>
<td>150 to 600</td>
</tr>
<tr>
<td><strong>Sphaerex®</strong></td>
<td>138 L</td>
<td>640</td>
</tr>
</tbody>
</table>

**Drums:**

<table>
<thead>
<tr>
<th>Available products</th>
<th>Volume</th>
<th>Acres/drum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ignite®</strong></td>
<td>100 L</td>
<td>50 to 100</td>
</tr>
<tr>
<td><strong>Teraxxa F4</strong></td>
<td>120 L</td>
<td>300 ml per 100 kg seed</td>
</tr>
</tbody>
</table>

**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).

¹ At the 1.0 L/ac (2.5 L/ha) rate.
² 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.
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. Purchases must include products from at least two segments, with a minimum of 40 acres from each segment.

### Baseline Rewards

<table>
<thead>
<tr>
<th>Segment</th>
<th>Purchase from 4+ Segments</th>
<th>Purchase from 3 Segments</th>
<th>Purchase from 2 Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment 1</td>
<td>11%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Segment 2</td>
<td>11%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Segment 3</td>
<td>11%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Segment 4</td>
<td>11%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Segment 5</td>
<td>11%</td>
<td>5%</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Bonus Rewards

- **Multiple Modes of Effective Action Offer**
  - 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

- **Potato Protection Program**
  - Purchase a minimum of 116 matching acres of Titan and Cimegra insecticides

- **Fungicide Bonus**
  - Purchase a minimum of 200 acres from any product (or combination of products) in Segment 4 and/or Segment 5

- **Integrity Bonus**
  - Purchase a minimum of 160 acres of Integrity herbicide

**Maximum Total Savings**

<table>
<thead>
<tr>
<th></th>
<th>Segment 1</th>
<th>Segment 2</th>
<th>Segment 3</th>
<th>Segment 4</th>
<th>Segment 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elite Bonus</td>
<td>11%</td>
<td>22%</td>
<td>15%</td>
<td>14%</td>
<td>11%</td>
</tr>
</tbody>
</table>

**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)
1. Offer Period: The 2024 Grower Rewards Program ("Regional Canada") (the "Offer") is administered by BASF Canada Inc. ("BASF") and begins on October 1, 2023 at 12:00 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 including the Peace River Region of British Columbia and Quebec, (each, an "Eligible Territory"), (ii) are the owner, operator or owner/manager 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 Offer Terms and Conditions (the "Terms") govern the 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 groups) or any individual or entity other than an Eligible Participant as defined above.

3. 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

4. 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, purchase 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 BASF Product(s) (the "BASF Product(s)")

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, a Bonus Reward, as follows:

6. IMPORTANT NOTE REGARDING INVERSOL: 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 Liberty™ 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 the Liberty® and Trait Agreement (the "LTA") is not signed, have in full force and effect and continuously complied with.

7. To obtain information about the LTA, and/or to complete an LTA, Eligible Participants should call (2273) or email basf@basf-agolutions.ca. Signed LTAs Forms are to 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.

8. 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:

9. By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 160 acres of Liberty + 200 acres of Veltyma DLX, the Eligible Participant would be eligible for:

10. For Pursuit herbicide in Segment 2, a minimum purchase of 39 acres will satisfy the minimum purchase threshold of Qualifying Reward Products for the Offer in accordance with Section 3.
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 be eligible for:

- 24% Multiple of Effective Action Reward on Eragon Plus and 3% Multiple of Effective Action Reward on Erama.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 250 acres of Intensity, the Eligible Participant would not be eligible for a Baseline Reward, nor any Bonus Rewards.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 132 acres (3 times) of Titan 180 acres (3 times) of Ciremza 320 acres (4 times) of Geya, the Eligible Participant would be eligible for:

- 3% Baseline Reward on each of Eragon Plus and Erama; and
- 3% Multiple of Effective Action Reward on Eragon Plus and 3% Multiple of Effective Action Reward on Erama.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 300 acres of Integrity, the Eligible Participant would not be eligible for a Baseline Reward, nor any Bonus Rewards.

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 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), 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 the Offer, then such Participant may be disqualified from the Offer and/or be solely responsible for any losses or damages to the Eligible Participant, the Released Parties, BASF, the consumer, or BASF’s customers or their respective agents and/or representatives and/or indirect or direct beneficiaries of 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 and/or are returned due to any Elite Qualifying Reward Products/Qualifying Reward Products/Eligible Qualifying Reward Products/Eligible Qualifying Reward Products or/and/or at any time thereafter until one year from the date such Offer was made by BASF to an Eligible Participant (or any person or entity purporting to be an Eligible Participant).

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 on or before the applicable portion of the 180-day verification period (the “Applicable Period”). 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.

c. The value of the Total Reward on Elite Qualifying Products is calculated as 1% of the SRP (exclusive of fees and taxes) of the Elite Qualifying Products purchased by the Eligible Participant. The Eligible Participant is eligible for:

- 3% Elite Reward on each of CimaStik, Cerva, CervaPro, Forum, Headline, Headline AMP, Lance, PrimaX, Sercos, Sercel, Statichem, TWINLINE, Voltyna, Voltyna CLX and Zapetro.

13. Insects/Insecticides: Ciremza, Epin and Titan

14. 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 Erama and 100 acres of Integrity + 100 acres of Intensity, the Eligible Participant would be eligible for:

- 3% Baseline Reward on each of Eragon Plus and Erama; and
- 3% Multiple of Effective Action Reward on Eragon Plus and 3% Multiple of Effective Action Reward on Erama.

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 Rewards.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 132 acres (3 times) of Titan 180 acres (3 times) of Ciremza 320 acres (4 times) of Geya, the Eligible Participant would be eligible for:

- 3% Baseline Reward on each of Eragon Plus and Erama; and
- 3% Multiple of Effective Action Reward on Eragon Plus and 3% Multiple of Effective Action Reward on Erama.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 300 acres of Integrity, the Eligible Participant would not be eligible for a Baseline Reward, nor any Bonus Rewards.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 132 acres (3 times) of Titan 180 acres (3 times) of Ciremza 320 acres (4 times) of Geya, the Eligible Participant would be eligible for:

- 3% Baseline Reward on each of Eragon Plus and Erama; and
- 3% Multiple of Effective Action Reward on Eragon Plus and 3% Multiple of Effective Action Reward on Erama.

By way of example only: If an Eligible Participant qualifies for the Offer in accordance with Section 3 and purchased 300 acres of Integrity, the Eligible Participant would not be eligible for a Baseline Reward, nor any Bonus Rewards.
Always read and follow label directions.

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ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of 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 contain 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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