To all our friends and customers,

We all know about the resilience of farmers and the challenges of dealing with weather, pests, and a host of other variables season-after-season. That resilience has never been more on display than in 2020 where we have also had to make changes to the way we live and work together. Whether it’s how we conducted our grower meetings to moving our summer field tours online with our Front Row Virtual Tour videos, we take pride in how we have all come together to ensure that the essential business of Canadian agriculture continues to move forward to feed the world.

This past year, we’ve been working hard at Bayer to bring you some innovative new solutions to help you manage your toughest production challenges and boost your return on investment. From new crop protection products, to new seed traits we’re proud of the innovations coming to your farm in 2021.

First up, for canola growers tired of flea beetles there’s new BUTEO™ start insecticide seed treatment with unmatched flea beetle control; an innovative seed trait called TruFlex™ canola with Roundup Ready® and LibertyLink® Technologies; and finally, there is Proline® GOLD fungicide, the ultimate in sclerotinia protection in high disease pressure situations.

Soybean growers can look forward to XtendFlex® soybeans, a triple-stack trait with glyphosate, dicamba and glufosinate tolerance. While cereal growers can welcome TilMOR™ fungicide into the It’s Grow Time™ family. TilMOR is a T2/T3 flex timing product and an excellent choice for barley growers where the fungicide application timing difference between a T2 and a T3 application can be as short as a few days. For corn and soybean growers, we’ll have exciting news to share with you soon about some new innovations in our product pipeline that we hope to have available in 2021.

From biology, biotechnology, crop protection and data science, combined with our groundbreaking Climate FieldView™ platform, we wake up every morning, committed to helping you maximize your ROI and improve the sustainability of your operation. Like you, our people live and breathe Canadian Ag, we will continue to leverage our strong R&D pipeline, to strive to continue to provide you the innovations that bring value to your farm.

Health, safety and food production have taken on even further importance these days. On behalf of everyone at Bayer, I’d like to thank you for your dedication and resilience in helping to put food on the table.

Have a safe and successful season in 2021.

Sincerely,

Shaun Cornillie
Bayer Crop Science Division
VP Customer Marketing, Canada
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W.A.M.L.E.G.S
WE KEEP GETTING BETTER, SO YOU KEEP GETTING BETTER

There aren’t many jobs in the world that are as challenging, or rewarding, as farming. That’s why we’re so proud to partner with Canadian growers to ensure you’re getting the new and innovative products you need, so the world gets the food it needs. Have a look at what’s new for Bayer heading into 2021.

**POWERFUL PROTECTION FROM THE START.**

Introducing BUTEO start, a powerful new seed treatment that helps protect your canola against early flea beetle pressure. With BUTEO start, you get immediate and effective protection from flea beetles, giving your canola outstanding defence during the all-important early canola stages. So, say hello to BUTEO start and goodbye to flea beetles.

**SUFFERING FROM SCLEROTINIA? GO FOR THE GOLD.**

Meet Proline GOLD. It offers our best level of protection in high disease pressure situations against the most serious canola disease, sclerotinia. Two modes of action work in synergy to help provide exceptional yields and excellent disease protection. Along with exceptional sclerotinia protection, Proline GOLD is an easy-to-use liquid formation that provides systemic and contact protection for both immediate and extended results.

**WORRY LESS. TILMOR.**

The newest addition to our fungicide family is here: Tilmor. It’s the perfect choice for cereal growers who want a little flexibility. That’s because Tilmor works great as both a flag leaf (T2) application for protecting against leaf diseases or as a head timing (T3) application against fusarium head blight. With Tilmor, it’s a win, win for your cereals.

**OUR NEWEST CANOLA SYSTEM.**

We have a message for hard to control weeds like kochia and cleavers across Western Canada. TruFlex Canola with Roundup Ready and Liberty Link Technologies is a canola system for farmers who want to use all of the tools available to them, with the ability to adjust their canola system as needed depending on their weed spectrum. It’s a great choice for managing tough to control weeds including herbicide resistant weeds.

**NEW XTENDFLEX SOYBEANS.**

More choice. More control. More flexibility. The Roundup Ready® Xtend Crop System is expanding, with XtendFlex soybeans, a triple-stack trait that has glyphosate, dicamba and glufosinate tolerance to give you the choice and flexibility to manage tough to control and resistant weeds.
SAVINGS THAT GROW FROM SEED TO HARVEST

The BayerValue Rewards Program lets you maximize your savings on every acre. With the largest selection of participating crop protection products ever, it’s never been easier to save.

QUICKLY CALCULATE YOUR SAVINGS

Try our new easy-to-use online calculator on GrowerPrograms.ca to get an estimate of your savings and guide you through all the qualifying products specific to your portfolio. Quickly save a PDF copy, print and email it to your retail, Bayer Sales Representative or keep it for your own records.

COMPLIMENTARY FIELDVIEW™ SUBSCRIPTION FOR BAYERVERUE GROWERS

Our groundbreaking Climate FieldView platform helps you uncover valuable insights year-round with tools that help you analyze crop performance at an operation, farm, field, and sub-field level. Climate FieldView allows you to get your data in one place, use that data to make operating decisions and optimize your inputs to help maximize yield potential and profitability on every acre. Now, growers who are enrolled in BayerValue can receive a complimentary one-year FieldView subscription. Visit ClimateFieldView.ca/BayerValue to activate your complimentary subscription today.

NOT A BAYERVERUE MEMBER YET?

It only takes a few minutes. Sign up today and save on the crop protection products you need all season long AND receive a complimentary 12 month subscription to Climate FieldView. Visit GrowerPrograms.ca or call 1 888-283-6847 to join BayerValue today. Terms and conditions apply.
BOOST YOUR YIELD POTENTIAL

As soon as your seed goes in the ground, it needs to cope with adverse conditions, protect itself from dangerous diseases and defend itself from feeding insects. But more importantly, it has to have enough energy to successfully emerge.

SEEDGROWTH IS HERE TO HELP

The Bayer SeedGrowth team brings expertise to Canadian growers like no other. The team is solely dedicated to understanding the application process so that treaters, retailers and growers can effectively apply their seed treatment and ensure crops get the best possible start.

Regardless of the crop or seed treatment product, your SeedGrowth representative can help you with your equipment needs, modifications and service.

The best protection comes from the best innovations in seed coatings. Our enhanced coverage, seed adhesion and colouring lets you know you’re covered.

Receive technical support, seed testing, training and advice from our SeedGrowth experts. Call 1 888-283-6847 to set up an appointment with your local representative.

When it comes to seed treatments, you can’t match the proven protection of Bayer innovations.

For more information on Bayer SeedGrowth visit cropscience.bayer.ca/SeedGrowth, or to find the SeedGrowth representative nearest you call 1 888-283-6847.
Roundup

Roundup Transorb HC

Roundup WeatherMAX with Transorb 2 Technology
KNOW YOUR GROUPS

GROUP 9 HERBICIDE

Features and Benefits
// Excellent consistency and weed control
// Trusted performance
// 60-minute rainfast guarantee
// Product service and support you can rely on
// All weather warranty (details and conditions apply)
// Support through RiskShield® Protection Package. Visit roundup.ca for more information.

Application Tips
// Where possible, rotate the use of Roundup Transorb HC liquid herbicide or other Group 9 herbicides within 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. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
// Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application methods and timing that favours crops and not weeds), biological (weed-competitive crops or varieties) and other management practices.

CROPS FOR USE

Barley
Canola
Corn
Oats
Soybeans
Wheat

ACTIVE INGREDIENT
Glyphosate - Group 9

Present as: Potassium salt of N-(phosphonomethyl) glycine
(Potassium salt of glyphosate)

FORMULATION
Liquid concentrate herbicide
Water soluble 540 g/L formulation

PACKAGING
10 L jug = 8 to 30 ac.

RATE | TREATMENT
--- | ---
0.33 L/ac. | 30 ac.
0.50 L/ac. | 20 ac.
0.67 L/ac. | 15 ac.
0.83 L/ac. | 12 ac.
1.00 L/ac. | 10 ac.
1.17 L/ac. | 9 ac.
1.33 L/ac. | 8 ac.

115 L Drum
450 L Tote
800 L Tote

WEEDS CONTROLLED

ANNUAL GRASS WEEDS
Barnyard grass
Bluegrass (annual)
Crabgrass (large)
Crabgrass (smooth)
Dodder
Downy brome grass
Fall panicum

ANNUAL BROADLEAF WEEDS
Canada fleabane
Chickweed
Cleavers
Cocklebur
Corn spurry
Cow cockle
Eastern black nightshade
Flixweed
Green smartweed
Hemp-nettle
Kochia
Lady’s-thumb
Lamb’s-quarters
Narrow-leaved hawk’s beard
Narrow-leaved vetch
Night-flowering catchfly
Pennsylvania smartweed
Prickly lettuce

PERENNIAL GRASS WEEDS
Bluegrass (Canada)
Bluegrass (Kentucky)
Brome grass (smooth)
Cattail (common)
Cottongrass
Foxtail barley
Quackgrass

PERENNIAL BROADLEAF WEEDS
Absinth wormwood
Canada thistle
Curled dock
Dandelion
Field bindweed
Hemp dogbane
Hoary cress
Knotweed (Japanese)
Milkweed (common)
Perennial sow thistle
Poison ivy
Purple loosestrife
Toad flax
Volunteer alfalfa

Packaging

115 L Drum
450 L Tote
800 L Tote

Herbicides

Giant foxtail
Green foxtail
Persian darnel
Volunteer barley
Volunteer corn
Volunteer wheat
Wild oats
Wild proso millet
Yellow foxtail

For full details, please reference product label.
Application Tips continued

// Monitor weed populations after herbicide application for signs of resistance development (for example, determine if one weed species on the herbicide label is not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by using an alternative herbicide from a different Group.

// Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment before moving fields. Always plant clean seed.

// Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options

// Contact your local extension specialist, certified crop advisor, or Bayer at 1 888-283-6847 for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes

Application Guidelines and Timing, Pre-harvest Application

<table>
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<td>Less than 30%</td>
<td>Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80% to 90% leaf drop (original leaves)</td>
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<td>Flax</td>
<td>Less than 30%</td>
<td>Majority (75% to 80%) of bolls are brown</td>
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<td>Forages</td>
<td>Not Applicable</td>
<td>3 to 7 days before last cut in final year of stand</td>
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<tr>
<td>Lentils</td>
<td>Less than 30%</td>
<td>Lowermost pods (bottom 15%) are brown and seeds rattle</td>
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<tr>
<td>Peas</td>
<td>Less than 30%</td>
<td>Majority (75% to 80%) of pods are brown</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Less than 30%</td>
<td>Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80% to 90% leaf drop</td>
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</tbody>
</table>

Apply 7 to 14 days before harvest to ensure best weed control and to maximize harvest management benefits.

Water Volumes

For control of perennial weeds

// Apply Roundup Transorb HC in 20 to 120 L/ac. of clean water as a broadcast spray, use no more than 275 kPa of pressure

For control of annual weeds

// Apply Roundup Transorb HC in 20 to 40 L/ac. of clean water as a broadcast spray (except as otherwise stated on the label), use no more than 275 kPa of pressure

// Unless otherwise directed, use a 0.67% solution in water – 0.67 L of Roundup Transorb HC per 100 L of water. For best results on harder to control perennials (such as bindweed, Canada thistle, hemp dogbane and milkweed), use a 1.34% solution – 1.34 L per 100 L of water.

Rainfastness

// Rainfast 1 hour after application

Tank-Mix Procedures

// Fill spray tank three-quarters full of water

// Start agitation and run for the entire mixing and spraying operation

// Add required amount of the tank-mix partner

// Flush herbicide loading tank and herbicide containers with water

// If using a herbicide loading system, ensure that the loading tank and lines to the pump are empty and flushed out with water before adding the tank-mix partner

// Add required amount of Roundup Transorb HC

// Flush herbicide loading tank and herbicide containers with water

// If using a herbicide loading system, ensure that the loading tank and lines to the pump are flushed with water and are empty before starting the spray operation

// Always start and end the mixing and spraying operation with a clean system

// For a list of off-label tank mixes supported by Bayer, visit cropscience.bayer.ca/TankMixList
KNOW YOUR GROUPS

GROUP 9

HERBICIDE

CROPS FOR USE
Barley, Canola, Corn, Oats, Soybeans, Wheat

ACTIVE INGREDIENT
Glyphosate - Group 9

Present as: Potassium salt of N-(phosphonomethyl) glycine
(Potassium salt of glyphosate)

FORMULATION
Liquid concentrate herbicide
Water soluble
540 g/L formulation

PACKAGING
10 L jug = 8 to 30 ac.

RATE | TREATMENT
--- | ---
0.33 L/ac. | 30 ac.
0.50 L/ac. | 20 ac.
0.67 L/ac. | 15 ac.
0.83 L/ac. | 12 ac.
1.00 L/ac. | 10 ac.
1.17 L/ac. | 9 ac.
1.33 L/ac. | 8 ac.

115 L Drum
450 L Tote
800 L Tote

WEEDS CONTROLLED
ANNUAL AND PERENNIAL GRASS WEEDS

Barnyard grass
Bluegrass (annual)
Crabgrass (large)
Crabgrass (smooth)
Dodder
Downy brome grass
Fall panicum
Giant foxtail
Green foxtail
Persian darnel
Volunteer barley
Volunteer corn

Volunteer wheat
Wild oats
Wild proso millet
Yellow foxtail

ANNUAL BROADLEAF WEEDS
Canada fleabane
Chickweed
Cleavers
Cocklebur
Corn spurry
Cow cockle
Eastern black nightshade
Flixweed
Green smartweed
Hemp-nettle
Kochia
Lady’s-thumb
Lamb’s-quarters
Narrow-leaved hawk’s beard
Narrow-leaved vetch
Night-flowering catchfly
Pennsylvania smartweed
Prickly lettuce
Ragweed
Redroot pigweed
Round-leaved mallow
Russian thistle
Shepherd’s purse
Smooth pigweed
Sowthistle (annual)
Stinkweed
Storksbill

Velvetleaf
Volunteer canola
Volunteer flax
Wild buckwheat
Wild mustard
Wild tomato

PERENNIAL GRASS WEEDS
Blue grass (Canada)
Blue grass (Kentucky)
Brome grass (smooth)
Cattail (common)
Common reed
Cottontop
Foxtail barley
Quackgrass
Wire-stemmed muhly
Yellow nutsedge

PERENNIAL BROADLEAF WEEDS
Absinth wormwood
Canada thistle
Cursed dock
Dandelion
Field bindweed
Hemp dogbane
Hoary cress
Knotweed (Japanese)
Milkweed (common)
Perennial sow thistle
Poison ivy
Purple loosestrife
Toad flax
Volunteer alfalfa

For full details, please reference product label.

Features and Benefits

// Proven crop safety
// Excellent and consistent weed control under ideal and tough conditions
// 30-minute rainfast guarantee
// Enhanced efficiency with a 540 g/L formulation
// Support through RiskShield Protection Package.
Visit roundup.ca for more information.
// All weather warranty (details and conditions apply)
// Roundup brand service plan

Application Tips

// Where possible, rotate the use of Roundup WeatherMAX liquid herbicide with Transorb 2 Technology or other Group 9 herbicides within 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. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
Application Tips continued

Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates, precision fertilizer application methods and timing that favours crops and not weeds, biological (weed-competitive crops or varieties) and other management practices. Weed size should also be considered, as the product is more effective on smaller weeds.

Monitor weed populations after a herbicide application for signs of resistance development (for example, determine if one weed species on the herbicide label is not being controlled). If resistance is suspected, prevent weed seed production in the affected area if possible and use an alternative herbicide from a different Group.

Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment before moving fields. Always plant clean seed.

Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.

Contact your local extension specialist, certified crop advisor, or Bayer at 1 888-283-6847 for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

Application Guidelines and Timing, Pre-harvest Application

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Apply 7 to 14 days before harvest to ensure best weed control and to maximize harvest management benefits.
Water Volumes

For control of perennial weeds
// Apply Roundup WeatherMAX with Transorb 2 Technology in 20 to 120 L/ac. of clean water as a broadcast spray, use no more than 275 kPa of pressure

For control of annual weeds
// Apply Roundup WeatherMAX with Transorb 2 Technology in 20 to 40 L/ac. of clean water as a broadcast spray (except as otherwise stated on the label), use no more than 275 kPa of pressure
// Unless otherwise specified, use 0.67 L of Roundup WeatherMAX with Transorb 2 Technology per 100 L of water. For best results on harder to control perennials (such as bindweed, Canada thistle, hemp dogbane, milkweed), use 1.34 L per 100 L of water.

Rainfastness
// Rainfast 30 minutes after application

Tank-Mix Procedures
// Fill spray tank three-quarters full of water
// Start agitation and run for the entire mixing and spraying operation
// Add required amount of the tank-mix partner
// Flush herbicide loading tank and herbicide containers with water
// If using a herbicide loading system, ensure that the loading tank and lines to the pump are empty and flushed out with water before adding the tank-mix partner
// Add required amount of Roundup WeatherMAX with Transorb 2 Technology
// Flush herbicide loading tank and herbicide containers with water
// If using a herbicide loading system, ensure that the loading tank and lines to the pump are flushed with water and are empty before starting the spray operation
// Always start and end the mixing and spraying operation with a clean system
// For a list of off-label tank mixes supported by Bayer, visit cropscience.bayer.ca/TankMixList
# Canola

## Crop Staging Guide

### Traits
- TruFlex Canola with Roundup Ready Technology
- TruFlex Canola with Roundup Ready and LibertyLink® Technologies

### Seed Treatments
- BUTEO start
- Prosper EverGol

### Herbicides
- Pardner
- Roundup Transorb HC
- Roundup WeatherMAX with Transorb 2 Technology

### Fungicides
- Proline
- Proline GOLD

### Insecticide
- Decis
CANOLA CROP STAGING GUIDE

**GROWTH STAGE**
- Pre-seed
- Cotyledon
- 4 leaf
- 6 leaf
- Bud stage
- 1st Flower
- 50% Flower
- Pod
- Mature

**SEED TREATMENT**
- Buteo
- JumpStart™ XL
- Prosper® EverGo

**APPLICATION TIMING**
- Pardner
- Roundup Ready
- Roundup WeatherMax
- Roundup Transorb HC
- Truflex
- Proline
- Proline Gold
- Decis

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
READY WHEN YOU ARE

A new generation of farming is here with TruFlex Canola with Roundup Ready Technology.

From seeding to harvest, there are only 106 days* to maximize yield potential. By growing TruFlex canola with Roundup Ready Technology, you can make the most of your season.

The average number of days for canola to reach maturity is based on the 2010 Canola Glossy from the Manitoba Canola Growers Association. Maturity varies considerably depending on location, growing season and date of seeding.

Flexibility in Spray Rates and Timing

TruFlex canola has a wider application window than our Roundup Ready technology. The TruFlex canola system also enables flexibility with Roundup WeatherMAX. To maximize your results, spray the first application of 0.67 L/ac. between the cotyledon and two leaf stage. This sets your crop up for the best start possible and helps it achieve its maximum yield potential. If another treatment is required, you have the flexibility to apply another application of 0.67 L/ac. up to first flower*. If spring weather doesn’t cooperate or you experience delays, use one application of 1.33 L/ac. up to the six leaf stage.

*First flower is when 50% of the plants in the field have no more than one flower.

The rates referenced above are for Roundup WeatherMAX.

---

OPTIMAL SPRAY TIMING FOR MAXIMUM YIELD POTENTIAL* (0.67 L/ac.)
SECOND APPLICATION TIMING (IF REQUIRED)* (0.67 L/ac.)

Pre-seed  Cotyledon  2 leaf  4 leaf  6 leaf  Bud stage  1st flower

*Bayer’s recommendation for ideal application timing.
Improved Control of Tough Weeds

The TruFlex canola with Roundup Ready Technology system controls annual weeds, including harder-to-kill weeds such as cleavers, foxtail barley and wild buckwheat; and tough-to-control perennials such as dandelion.

System Comparison

// **Dandelion**: helps to enable season-long control
// **Foxtail barley**: allows for 99% control
// **Wild buckwheat**: allows for control of large plants past the 6 leaf stage with Roundup WeatherMAX herbicide at a rate of approximately 1 L/ac. and large buckwheat (past 6 leaf) at a rate of 1.33 L/ac.

Controls 24 Additional Weed Species

Being able to apply Roundup WeatherMAX in-crop as two applications of 0.67 L/ac. or as a single application of 1.33 L/ac. allows for the control of 24 additional weed species when compared to the Roundup Ready canola system. These additional weed species include biennial wormwood, common milkweed and yellow foxtail.

Higher Yield Potential Through Genetics and Crop Safety

New genetics have packed a lot of yield potential into each TruFlex canola seed. New advances in trait technology help to enable better weed control and crop safety when compared to Roundup Ready canola. It’s a winning combination that can lead to more yield potential at harvest time.
TRUFLEX CANOLA WITH ROUNDUP READY AND LIBERTYLINK® TECHNOLOGIES

A canola system for farmers who want to use all of the tools available to them, with the ability to adjust their canola system as needed depending on their weed spectrum

// Provides an effective tool for managing and delaying herbicide resistant weeds
// Allows for customized management techniques for each individual field to maximize weed control without giving up crop safety or application management
// Recommended use is to start with a Roundup branded product pre-seed burndown with a pre-seed tank-mix partner, then spray 0.67 L/ac. of Roundup WeatherMAX, followed by 1.6 L/ac. of Liberty® herbicide

Controlling volunteer canola with TruFlex canola with Roundup Ready and LibertyLink® Technologies

// Best management practices are exactly the same as they exist today for controlling volunteer canola
// Practicing other cultural methods will reduce the amount of volunteers (i.e., crop rotation, managing harvest losses)
// Relying on glyphosate alone to control volunteer canola, regardless of the canola herbicide system, can lead to other issues, including an increased chance of developing resistance
// Always include an effective tank-mix partner with Roundup where possible
// Numerous herbicides with different modes of actions are available to control volunteers

Each block received three different sequential applications that were spaced 17 days apart.

The following photos simulate a typical window to apply in-crop herbicide, and some of the herbicide combinations that can be applied when using the TruFlex canola with Roundup Ready and LibertyLink technologies system.
Features and Benefits

- Provides superior protection against crucifer and striped flea beetles, setting your crop up for the strongest start possible
- Powerful Group 4D insecticide (flupyradifurone)
- Rapid uptake and systemic translocation from cotyledon to leaf margins. This allows for a strong start, even in dry conditions.
- Stronger plant development leads to quicker canopy, more uniform flowering and better maturity
- Works great in combination with leading base canola seed treatments
Pest and Application Timing

<table>
<thead>
<tr>
<th>CROP</th>
<th>PESTS CONTROLLED</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola</td>
<td><strong>CRUCIFER FLEA BEETLES</strong>&lt;br&gt;• Bluish-black&lt;br&gt;• 2 to 3 mm (1/10 in.) long&lt;br&gt;• Most prevalent in grassland areas of the northern prairies</td>
<td>Commercially applied</td>
</tr>
<tr>
<td></td>
<td><strong>STRIPED FLEA BEETLES</strong>&lt;br&gt;• Striped – black with two wavy yellow stripes along the back&lt;br&gt;• 2 to 3 mm (1/10 in.) long&lt;br&gt;• Most prevalent in parkland areas of the northern prairies</td>
<td></td>
</tr>
</tbody>
</table>

**SYSTEMIC TRANSLOCATION**

BUTEO start seed treatment protects canola from the cotyledon to the 3 leaf stage – the time when seedlings are the most susceptible to flea beetle feeding damage. The power of BUTEO start’s Group 4D insecticide, flupyradifurone, is its rapid uptake and ability to translocate into the cotyledon immediately. From there, it moves into the new leaves with the highest level of concentration travelling to the leaf margins. This early distribution thoroughly protects the plant, thereby allowing it to grow and develop a stronger plant stand even in dry conditions and in areas of high flea beetle pressure.

**BUTEO start ADVANTAGE**

Recent trials demonstrated the superior flea beetle protection that BUTEO start provides. These plots were seeded the same day. The plot treated with BUTEO start at the flowering stage showed a larger and fuller canopy, while the other plot treatments were behind with fewer plants stands.

Source: Bayer systemicity studies: Uptake and translocation of [14C]-flupyradifurone after seed treatment in oilseed rape.

Source: Bayer field solutions trials (photos taken July 8, 2019, Rosthern, SK). Treated seeds were seeded the same day. Your results may vary according to agronomic, environmental, pest and disease pressure variables.
Prosper EverGol is a systemic seed treatment that is registered for canola and mustard. In addition to the highly effective insecticide clothianidin, which controls against flea beetles; Prosper EverGol also contains three fungicidal active ingredients that control the most damaging diseases.
Features and Benefits

- Disease protection with outstanding control of fusarium, pythium, rhizoctonia and other yield-robbing diseases
- Higher yield potential through healthier plant stands
- Strong seed safety
- Prosper EverGol protects your canola against the most damaging diseases and insects, including:
  - Damping-off and early-season root rot caused by fusarium, pythium and rhizoctonia; seed rot and seedling blight
  - Seed-borne diseases
  - Flea beetles, up to the 4 leaf stage of canola

Flea beetles

Flea beetles can do a lot of harm in a short period of time. They locate and defoliate seedlings, as well as feed directly on the stems of plants shortly after crop emergence to create significant crop damage. In North America, flea beetles cost growers an estimated $300 million in damage every year, with typical yield losses of about 10%. Feeding damage from flea beetles can result in defoliation, plant injury, delayed maturity and early stress on crop and/or death – all of which lead to yield loss.


WHAT IS EVERGOL?

With its high performing Group 7 active ingredient penflufen, EverGol offers your crop outstanding defence against diseases such as Rhizoctonia solani. As a testament to its efficacy, penflufen represents the first fungicidal active from Bayer specifically engineered for use in seed treatments.

WHAT IS JUMPSTART XL?

JumpStart® XL liquid inoculant delivers a fast start and strong finish by improving phosphate availability to the crop. This is because JumpStart XL contains Penicillium biliae (P. biliae), which grows along plant roots releasing phosphate bound in the soil. The availability of enhanced phosphate results in increased root growth and surface area, earlier flowering, an increased number of pods, more uniform maturity, early-season vigour and a higher yield potential.
**CROPS FOR USE**

<table>
<thead>
<tr>
<th>CROP</th>
<th>BC, AB, SK, MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>Seedling and established</td>
</tr>
<tr>
<td>Barley</td>
<td></td>
</tr>
<tr>
<td>Canary seed</td>
<td>Pre-seed up to 24 hours before seeding</td>
</tr>
<tr>
<td>Fall rye</td>
<td></td>
</tr>
<tr>
<td>Field corn</td>
<td></td>
</tr>
<tr>
<td>Flax</td>
<td></td>
</tr>
<tr>
<td>Grain sorghum</td>
<td></td>
</tr>
<tr>
<td>Millet</td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td></td>
</tr>
<tr>
<td>Seedling grasses</td>
<td></td>
</tr>
<tr>
<td>Sweet corn</td>
<td></td>
</tr>
<tr>
<td>Triticale</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
</tr>
</tbody>
</table>

**ACTIVE INGREDIENT**

Bromoxynil - Group 6

**FORMULATION**

Liquid-emulsifiable concentrate

**PACKAGING**

- 8 L jug = 20 ac. (one 2 x 8 L case treats 40 ac.)
- 128 L bulk shuttle = 320 ac. (BC, AB, SK, MB)

**WEEDS CONTROLLED**

<table>
<thead>
<tr>
<th>Weed</th>
<th>Seedlings up to</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>American nightshade</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Bluebur</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Cocklebur</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common groundsel</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common ragweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Cow cockle</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Green smartweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Kochia (including glyphosate-resistant)</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Lady’s-thumb</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Lamb’s-quarters</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Pale smartweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Pigweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Russian thistle</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Stinkweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Tartary buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Velvetleaf</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Volunteer canola (including herbicide-tolerant varieties, seedlings up to 4 leaf stage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild buckwheat (seedlings up to 8 leaf stage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild mustard</td>
<td>4 leaf stage</td>
<td></td>
</tr>
</tbody>
</table>

1 In normal conditions, will control up to the 4 leaf stage. Plants beyond this stage are unlikely to be controlled.

For full details, please reference product label.

---

**Features and Benefits**

- Wide window of application
- No re-cropping restrictions
- Excellent crop safety
- Excellent tool to manage Group 2-resistant weeds
- Registered for use on various crops and forage grasses (consult label for application timing and rates)

**Application Guidelines**

**Rate**

- Registered application rate: 0.4 to 0.48 L/acre, or 16.5 to 20 acres/jug

**Application Tips**

- Spray coverage on weeds is very important
- Always travel at the proper speed
- Since Pardner is a contact herbicide, use nozzles designed to achieve a medium to coarse droplet size (approximately 250 to 350 microns). Avoid larger, higher-output nozzles that increase the droplet size (greater than 350 microns) because it can potentially reduce weed control from inadequate weed coverage.

**Application Timing**

- Alfalfa (AB, SK, MB) 2 to 6 trifoliate stage
- Barley, fall rye, oats and triticale
  - Spring application: 2 leaf to early flag leaf stage

**Water Volumes**

<table>
<thead>
<tr>
<th>Region</th>
<th>Minimum of 10 gal./acre (94 L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC, AB, SK, MB</td>
<td>For volunteer canola control in early season: 5 to 10 gal./acre (47 to 94 L/ha) of water</td>
</tr>
</tbody>
</table>

**Rainfastness**

- Rainfast 1 hour after application

**Tank Mixes**

- Tank mix with Roundup in pre-seed applications to control herbicide-tolerant volunteer canola
- Many tank-mix options available for grass weed control and enhanced broadleaf weed control
- For a list of off-label tank mixes supported by Bayer, visit cropscience.bayer.ca/TankMixList
In-Crop Application on TruFlex Roundup Ready Canola
Rate and specific application instructions for weed control in TruFlex Roundup Ready canola varieties.

<table>
<thead>
<tr>
<th>RATE (L/AC.)</th>
<th>GROWTH STAGE OF CROP</th>
<th>WEEDS CONTROLLED</th>
<th>COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.22 to 0.33 Single application</td>
<td>Emergence to first flower*</td>
<td>Annual Grass Weeds Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats Annual Broadleaf Weeds Chickweed, cleavers, corn spurry, cow cockle¹, flixweed, hemp-nettle, kochia, lady’s-thumb, lamb’s-quarters, narrow-leaved hawk’s beard, night-flowering catchfly¹, non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, Russian thistle, shepherd’s purse¹, smartweed¹, strikweed, stork’s-bill, wild buckwheat, wild mustard, wild tomato Perennials (suppression) Canada thistle, dandelion, perennial sow thistle Perennials (season-long control) Quackgrass</td>
<td>The 0.22 L/ac. rate can be used for control of cow cockle, night-flowering catchfly and shepherd’s purse, at the 1 to 3 leaf stage of the crop or for control of smartweed at the 4 to 6 leaf stage. Repeat applications may be required if a second flush of weeds germinate prior to canopy closure.</td>
</tr>
<tr>
<td>0.51 Single application</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Perennials (season-long control) Canada thistle, perennial sow thistle</td>
<td>For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.</td>
</tr>
<tr>
<td>0.33 Sequential applications</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Annual Broadleaf Weeds Round-leaved mallow</td>
<td></td>
</tr>
<tr>
<td>0.67 Single application</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Biennial wormwood², cocklebur, common ragweed, crabgrass (smooth and large), eastern black nightshade, fall panicum, foxtail (yellow and giant), foxtail barley, Pennsylvania smartweed, smooth pigweed, velvetleaf, volunteer adzuki beans³, wild proso millet, wire-stem muhly (Suppression only) Common milkweed, yellow nutsedge</td>
<td>²Biennial wormwood should be at 2 to 8 leaf stage and actively growing. ³For control of volunteer adzuki beans (unifoliate to the fourth trifoliate leaf stage) apply 0.67 L/ac. A second 0.67 L/ac. application may be used for late flushes emerging after the initial treatment. Adzuki beans should be at unifoliate to fourth trifoliate leaf stage and actively growing.</td>
</tr>
<tr>
<td>0.67 Sequential applications</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Perennials (season-long control) Bur cucumber, common milkweed, dandelion, field bindweed, horse nettle, tall waterhemp, yellow nutsedge</td>
<td>A sequential application may be made at least 2 weeks after the first application. A second 0.67 L/ac. application may be used for late weed flushes emerging after the initial treatment. Common milkweed should be 15 to 60 cm in height and actively growing. Yellow nutsedge should be 5 to 15 cm in height and actively growing. Horse nettle (2 to 12 leaf stage). Tall waterhemp up to and including the 18 leaf stage. Bur cucumber from the 1 to 18 leaf stage.</td>
</tr>
<tr>
<td>1.33 Single application</td>
<td>Emergence to 6 leaf</td>
<td>All the above weeds</td>
<td>One application allowed in crop per season.</td>
</tr>
</tbody>
</table>

*When 50% of the plants in the field have more than one flower. Ensure the crop has not advanced beyond the recommended growth stage for all applications. Repeat applications may be required if a second flush of weeds germinates prior to canopy closure. Maximum 1.33 L/ac. is allowed for post emergence use.
In-Crop Application on Roundup Ready Canola
Rate and specific application instructions for control of annual and perennial weeds in Roundup Ready canola varieties.

<table>
<thead>
<tr>
<th>RATE (L/AC.)</th>
<th>GROWTH STAGE OF CROP</th>
<th>WEEDS CONTROLLED</th>
<th>COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)</th>
</tr>
</thead>
</table>
| 0.22 to 0.51 | 0 to 6 leaf          | **Annual Grass Weeds**  
Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats  
**Annual Broadleaf Weeds**  
Chickweed, cleavers\(^1\), corn spurry, cow cockle\(^1\), flixweed\(^3\), hemp-nettle, kochia, lady’s-thumb, lamb’s-quarters, narrow-leaved hawk’s beard\(^2\), night-flowering catchfly\(^1\), non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, round-leaved mallow\(^2\), Russian thistle, shepherd’s purse\(^1\), smartweed\(^1\), stinkweed, stork’s-bill\(^1\), wild buckwheat\(^1\), wild mustard, wild tomato  
**Perennials (suppression)\(^2\)**  
Canada thistle, dandelion, perennial sow thistle  
**Perennials (season-long control)**  
Canada thistle\(^3\), foxtail barley\(^2\), perennial sow thistle\(^3\), quickgrass\(^2\) | Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.  
For single or sequential applications, ensure the crop has not advanced beyond the recommended growth stage.  
Maximum 1.67 L/ac. is allowed for post emergence use.  
\(^1\)Use the 0.33 L/ac. rate for control of these weeds at all crop growth stages. The lower rate can be used to control cow cockle, night-flowering catchfly and shepherd’s purse at the 1 to 3 leaf stage of the crop or for control of smartweed at the 4 to 6 leaf stage.  
\(^2\)A single application of 0.33 L/ac. is required.  
\(^3\)Sequential applications of 0.33 L/ac. are required.  
\(^4\)Sequential applications of 0.33 L/ac. are required or a single application of 0.51 L/ac. |
## In-Crop Application on TruFlex Roundup Ready Canola

Rate and specific application instructions for weed control in TruFlex Roundup Ready canola varieties.

<table>
<thead>
<tr>
<th>RATE (L/AC.)</th>
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<th>WEEDS CONTROLLED</th>
<th>COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>Emergence to first flower*</td>
<td>Annual Grass Weeds Barney grass, green foxtail, volunteer barley, volunteer wheat, wild oats Annual Broadleaf Weeds Chickweed, cleavers, corn spurry, cow cockle, flaxweed, hemp-nettle, kochia, lady’s-thumb, lamb’s-quarters, narrow-leaved hawk’s beard, night-flowering catchfly, non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, Russian thistle, shepherd’s purse, smartweed, stinkweed, stork’s-bill, wild buckwheat, wild mustard, wild tomato Perennials (suppression) Canada thistle, dandelion, perennial sow thistle Perennials (season-long control) Quackgrass</td>
<td>*The 0.22 L/ac. rate can be used to control cow cockle, night-flowering catchfly and shepherd’s purse at the 1 to 3 leaf stage of the crop or to control smartweed at the 4 to 6 leaf stage. Repeat applications may be required if a second flush of weeds germinate prior to canopy closure.</td>
</tr>
<tr>
<td>Sequential</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Perennials (season-long control) Canada thistle, perennial sow thistle</td>
<td>For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.</td>
</tr>
<tr>
<td>Single</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Annual Broadleaf Weeds Round-leaved mallow Perennials (season-long control) Canada thistle, foxtail barley</td>
<td>²Biennial wormwood should be at 2 to 8 leaf stage and actively growing.</td>
</tr>
<tr>
<td>Sequential</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Biennial wormwood, cocklebur, common ragweed, crabgrass (smooth and large), eastern black nightshade, fall panicum, foxtail (giant and yellow), foxtail barley, Pennsylvania smartweed, smooth pigweed, velvetleaf, volunteer adzuki beans, wild proso millet, wire-stem muhly (Suppression only) Common milkweed, yellow nutsedge</td>
<td>³For control of volunteer adzuki beans (unifoliate to the fourth trifoliolate leaf stage) apply 0.67 L/ac. A second 0.67 L/ac. application may be used for late weed flushes emerging after the initial treatment. Adzuki beans should be at unifoliate to fourth trifoliolate leaf stage and actively growing.</td>
</tr>
<tr>
<td>Single</td>
<td>Emergence to first flower*</td>
<td>All the above weeds plus: Perennials (season-long control) Bur cucumber, common milkweed, dandelion, field bindweed, horse nettle, tall waterhemp, yellow nutsedge</td>
<td>A sequential application may be made at least 2 weeks after the first application. A second 0.67 L/ac. application may be used for late weed flushes emerging after the initial treatment. Common milkweed should be 15 to 60 cm in height and actively growing. Yellow nutsedge should be 5 to 15 cm in height and actively growing. Horse nettle (2 to 12 leaf stage). Tall waterhemp up to and including the 18 leaf stage. Bur cucumber from the 1 to 18 leaf stage.</td>
</tr>
<tr>
<td>Single</td>
<td>Emergence to 6 leaf</td>
<td>All the above weeds</td>
<td>One application allowed in crop per season.</td>
</tr>
</tbody>
</table>

*When 50% of the plants in the field have more than one flower. Ensure the crop has not advanced beyond the recommended growth stage for all applications. Repeat applications may be required if a second flush of weeds germinate prior to canopy closure. Maximum 1.33 L/ac. is allowed for post emergence use.
In-Crop Application on Roundup Ready Canola

Rate and specific application instructions of control of annual and perennial weeds in Roundup Ready canola varieties.

<table>
<thead>
<tr>
<th>RATE (L/AC.)</th>
<th>GROWTH STAGE OF CROP</th>
<th>WEEDS CONTROLLED</th>
<th>COMMENTS (APPLY IN 20 TO 40 L/AC. OF WATER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.22 to 0.51</td>
<td>0 to 6 leaf</td>
<td>Annual Grass Weeds: Barnyard grass, green foxtail, volunteer barley, volunteer wheat, wild oats. Annual Broadleaf Weeds: Chickweed, cleavers1, corn spurry, cow cockle1, flixweed1, hemp-nettle, kochia, lady's-thumb, lamb's-quarters, narrow-leaved hawk's beard1, night-flowering catchfly1, non-Roundup Ready volunteer canola (rapeseed), redroot pigweed, round-leaved mallow2, Russian thistle, shepherd's purse1, smartweed1, stinkweed, stork's-bill3, wild buckwheat1, wild mustard, wild tomato. Perennials (suppression)2: Canada thistle, dandelion, perennial sow thistle. Perennials (season-long control) Canada thistle1, foxtail barley1, perennial sow thistle1, quackgrass2.</td>
<td>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure. Ensure the crop has not advanced beyond the recommended growth stage. Maximum 0.67 L/ac. is allowed for post emergence use. 1Use the 0.33 L/ac. rate to control these weeds at all crop growth stages. The lower rate can be used to control cow cockle, night-flowering catchfly and shepherd's purse at the 1 to 3 leaf stage of the crop or for control of smartweed at the 4 to 6 leaf stage. 2A single application of 0.33 L/ac. is required. 3Sequential applications of 0.33 L/ac. are required. 4Sequential applications of 0.33 L/ac. are required or a single application of 0.51 L/ac.</td>
</tr>
</tbody>
</table>
**PROLINE VERSUS THE COMPETITION**

2-year canola fungicide trial summary – Western Canada

<table>
<thead>
<tr>
<th>FORMULATION</th>
<th>DISEASES CONTROLLED</th>
<th>CROPS FOR USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspension concentrate</td>
<td>CANOLA: Sclerotinia</td>
<td>Canola, Flax</td>
</tr>
<tr>
<td></td>
<td>FLAX: Sclerotinia</td>
<td>Mustard, Safflower</td>
</tr>
<tr>
<td></td>
<td>MUSTARD: Sclerotinia</td>
<td>Sunflowers</td>
</tr>
<tr>
<td></td>
<td>SAFFLOWER AND SUNFLOWER: Rust</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACTIVE INGREDIENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prothioconazole</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Group 3</td>
<td></td>
</tr>
</tbody>
</table>

**FORMULATION**
- Suspension concentrate

**PACKAGING**
- 5.1 L jug = 40 ac.

**DISEASES CONTROLLED**
- CANOLA: Sclerotinia
- FLAX: Sclerotinia
- MUSTARD: Sclerotinia
- SAFFLOWER AND SUNFLOWER: Rust

**PROLINE VERSUS THE COMPETITION**

2-year canola fungicide trial summary – Western Canada

**LOW DISEASE PRESSURE**

<table>
<thead>
<tr>
<th></th>
<th>Untreated</th>
<th>Proline std.*</th>
<th>Cotegra® Fungicide std.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (bu./ac.)</td>
<td>53.9</td>
<td>56.2</td>
<td>56</td>
</tr>
</tbody>
</table>

Proline provided an average of +2.3 bu./ac. (+4.3%) increase over the untreated check.

To see local results, visit [ItPaysToSpray.ca](http://ItPaysToSpray.ca)

Sclerotinia incidence <10% in UTC.
Proline win rate 53.8% vs Cotegra® fungicide (7/13 trials).
*Standard fungicide rates applied. Proline at 40 ac./jug and Cotegra® at 40 ac./jug.
Your results may vary according to agronomic, environmental and pest pressure variables.

**HIGH DISEASE PRESSURE**

<table>
<thead>
<tr>
<th></th>
<th>Untreated</th>
<th>Proline std.*</th>
<th>Cotegra® Fungicide std.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (bu./ac.)</td>
<td>51.1</td>
<td>55</td>
<td>54.6</td>
</tr>
</tbody>
</table>

Proline provided an average of +3.9 bu./ac. (+7.6%) increase over the untreated check.

Sclerotinia incidence >10% in UTC.
Proline win rate 57.1% vs Cotegra® fungicide (4/7 trials).
*Standard fungicide rates applied. Proline at 40 ac./jug and Cotegra® at 40 ac./jug.
Your results may vary according to agronomic, environmental and pest pressure variables.
Features and Benefits

// More growers trust their canola with Proline than any other sclerotinia fungicide*
// Powerful prothioconazole reduces sclerotinia infection rates and provides growers with the satisfaction of knowing that their canola is protected from yield-robbing sclerotinia
// Consistently provides outstanding sclerotinia protection, while maximizing yield potential under all types of soil conditions tested
// Provided at a rate that allows full control of the pathogen from one active ingredient, while minimizing selection pressure and the risk of resistance development
// Can be applied by ground or air

*Source: BPI Data (2020).

Application Guidelines

// Spray screens should be no finer than 50 micron mesh

Rate
// Refer to the timing guide on page 30 for details on the optimum time to spray Proline
// Canola, flax and mustard: 128 mL/ac. (40 ac./jug), standard rate
// Sunflowers: 170 mL/ac. (30 ac./jug)

Application Timing

Canola, flax and mustard
// Apply Proline when the crop is in the 20 to 50% bloom stage. For optimal protection, apply fungicide prior to the petals beginning to fall. This allows for the maximum number of petals to be protected.

Safflower and sunflower
// Apply Proline when the crop is in the 10 to 50% disk flower bloom stage

Water Volumes
BC, AB, SK, MB
Ground
// Minimum of 10 gal./ac. (94 L/ha)
Aerial
// Minimum of 4.5 gal./ac. (42 L/ha)
ON, QC, NB, NS, NFLD, PEI
Ground
// Minimum of 19 gal./ac. (175 L/ha)
Aerial
// Minimum of 5 gal./ac. (50 L/ha)

Rainfastness
// Rainfast 1 hour after application

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola</td>
<td>36</td>
</tr>
<tr>
<td>Flax (linseed)</td>
<td></td>
</tr>
<tr>
<td>Oriental mustard</td>
<td></td>
</tr>
<tr>
<td>Rapeseed (Brassica carinata)</td>
<td></td>
</tr>
<tr>
<td>Safflower</td>
<td>45</td>
</tr>
<tr>
<td>Sunflower</td>
<td></td>
</tr>
</tbody>
</table>

For all other crops that are registered but not listed in the table, consult the Proline label for complete details. Crops not listed include barley, buckwheat, oats, pearl millet, proso millet, rye, triticale, wheat (durum, spring and winter), as well as many types of berries, cucurbits, melons and squash.
Features and Benefits

- Proline GOLD offers excellent protection in high disease pressure situations against the most serious canola disease – sclerotinia.
- An easy-to-use liquid formation that provides systemic and contact protection for both immediate and extended results.
- Consistently provides outstanding sclerotinia protection, while maximizing yield under all types of conditions tested.
- Powerful actives prothioconazole and fluopyram reduce sclerotinia infection rates in high disease pressure situations and provide growers with the satisfaction of knowing that their canola is protected from yield-robbing sclerotinia.
- Two active ingredients for increased efficacy and performance to provide exceptional yield potential and excellent disease protection.

Application Guidelines

- Spray screens should be no finer than 50 micron mesh.
- **Rate**
  - Canola and oriental mustard: 253 mL/ac. (625 mL/ha)
  - 10.12 L jug = 40 ac.
  - Do not apply more than 2 applications of Proline GOLD per season.

Application Timing

**Canola and mustard**

- Apply Proline GOLD when the crop is in the 20 to 50% bloom stage. Best protection will be achieved when the fungicide is applied prior to the petals beginning to fall. This allows the maximum number of petals to be protected.
- Apply a second application 10 to 14 days later up to full bloom, if disease persists or weather conditions are favourable for disease development. When conditions favouring disease are severe, use the shorter interval.
- Can be applied by ground or air.

Water Volumes

**BC, AB, SK, MB**

- **Ground**
  - Minimum of 10 gal/ac. (94 L/ha)
- **Aerial**
  - Minimum of 4.5 gal/ac. (42 L/ha)

Rainfastness

- Rainfast 1 hour after application.

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola</td>
<td>36</td>
</tr>
<tr>
<td>Oriental mustard (Brassica juncea)</td>
<td>36</td>
</tr>
<tr>
<td>Rapeseed (Brassica carinata)</td>
<td>14</td>
</tr>
<tr>
<td>Dry beans</td>
<td>14</td>
</tr>
</tbody>
</table>

For all other crops that are registered but not listed in the table, consult the Proline GOLD label for complete details.
<table>
<thead>
<tr>
<th></th>
<th>10% BLOOM</th>
<th>20% BLOOM</th>
<th>30% BLOOM</th>
<th>40% BLOOM</th>
<th>50% BLOOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOUT YOUR</td>
<td>~10 open</td>
<td>~14 to 16</td>
<td>~20 open</td>
<td></td>
<td>&gt;20 open</td>
</tr>
<tr>
<td>FIELDS TO FIND</td>
<td>flowers on</td>
<td>flowers on</td>
<td>flowers on</td>
<td></td>
<td>flowers on</td>
</tr>
<tr>
<td>THIS CROP STAGE</td>
<td>the main stem</td>
<td>the main stem</td>
<td>the main stem</td>
<td></td>
<td>the main stem</td>
</tr>
</tbody>
</table>
**Features and Benefits**

- Decis is safe to apply either by ground or air, and is not prone to gassing off, washing off or leaching.
- Flexible rates can be used to address insect stages and temperature variations within insect populations.
- Readily tank mixable with many leading herbicides.
- When spraying under high temperature (+25°C), it is recommended that the highest registered application rate be used.

**Application Tips**

- Scout your fields often to ensure proper application and timing.
- Scouting should occur in the early morning or in the evening when the insects are actively feeding. For flea beetles, scout mid-day when they actively feed.
- Use sufficient water to ensure thorough coverage; more water may be required when dense foliage is present.
- Decis is a contact insecticide, so for best results spray when insects are feeding.
- Avoid application when bees are foraging.
- For best results, use the maximum recommended rate of application as efficacy at lower rates may be affected by temperature.

**Application Guidelines**

**RECOMMENDED RATES**

<table>
<thead>
<tr>
<th>CROP</th>
<th>INSECT</th>
<th>50 EC RECOMMENDED RATE</th>
<th>100 EC RECOMMENDED RATE</th>
<th>ACRES PER JUG 50 EC</th>
<th>ACRES PER JUG 100 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola</td>
<td>Bertha armyworm</td>
<td>60 mL/ac.</td>
<td>30 mL/ac.</td>
<td>16 ac./1 L jug</td>
<td>40 ac./1.2 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40 ac./2.4 L jug</td>
<td>160 ac./4.8 L jug</td>
</tr>
<tr>
<td></td>
<td>Cabbage seedpod weevil</td>
<td>80 mL/ac.</td>
<td>40 mL/ac.</td>
<td>12 ac./1 L jug</td>
<td>30 ac./1.2 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30 ac./2.4 L jug</td>
<td>120 ac./4.8 L jug</td>
</tr>
<tr>
<td></td>
<td>Diamondback moth</td>
<td>60 mL/ac.</td>
<td>30 mL/ac.</td>
<td>16 ac./1 L jug</td>
<td>40 ac./1.2 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40 ac./2.4 L jug</td>
<td>160 ac./4.8 L jug</td>
</tr>
<tr>
<td></td>
<td>Flea beetle</td>
<td>60 mL/ac.</td>
<td>30 mL/ac.</td>
<td>16 ac./1 L jug</td>
<td>40 ac./1.2 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40 ac./2.4 L jug</td>
<td>160 ac./4.8 L jug</td>
</tr>
<tr>
<td></td>
<td>Lygus bug</td>
<td>60 mL/ac.</td>
<td>30 mL/ac.</td>
<td>16 ac./1 L jug</td>
<td>40 ac./1.2 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40 ac./2.4 L jug</td>
<td>160 ac./4.8 L jug</td>
</tr>
</tbody>
</table>

**Application Timing**

**Bertha armyworm, diamondback moth, flea beetle and lygus bug**

- Ground – apply when larvae are present and actively feeding.
- Aerial – apply once per season when insects are present and actively feeding.

**Cabbage seedpod weevil**

- Ground or aerial – apply once per season when adults are seen on the flower buds or developing pods. Decis must be applied prior to egg laying.

---

*Maximum 3 applications per year with 1 permitted by air. For example, 3 ground applications or 2 ground and 1 air. If 3 applications are used, only the first or second applications can be at the high rate (80 mL./ac.).*
decis®

Water Volumes

**Ground**
- Minimum of 10 gal./ac. (94 L/ha)

**Aerial**
- Minimum of 1 gal./ac. (9.4 L/ha)

Rainfastness
- Rainfast 1 hour after application

Re-Cropping Intervals
- No re-cropping restrictions

Tank Mixes
For a complete list of tank-mix partners and mixing order, please refer to page 135.

Pre-Harvest Intervals
- Re-entry is 12 hours. Decis may not be applied within the following timelines:

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola Oriental mustard</td>
<td>7</td>
</tr>
<tr>
<td>Flax</td>
<td>40</td>
</tr>
<tr>
<td>Sunflower</td>
<td>70</td>
</tr>
</tbody>
</table>
## Cereals

### Crop Staging Guide (wheat)

#### Seed Treatments

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raxil PRO</td>
<td>Raxil PRO SHIELD</td>
</tr>
</tbody>
</table>

#### Herbicides

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buctril M</td>
<td>Olympus</td>
</tr>
<tr>
<td>Infinity</td>
<td>Puma Advance</td>
</tr>
<tr>
<td>Infinity FX</td>
<td>Thumper</td>
</tr>
<tr>
<td>Luxxur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tundra</td>
</tr>
<tr>
<td></td>
<td>Varro</td>
</tr>
<tr>
<td></td>
<td>Velocity m3</td>
</tr>
</tbody>
</table>

#### Fungicides

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaro</td>
<td>Prosaro XTR</td>
</tr>
<tr>
<td>Folicur EW</td>
<td>Stratego PRO</td>
</tr>
<tr>
<td></td>
<td>TilMOR</td>
</tr>
</tbody>
</table>

#### Insecticide

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decis</td>
<td></td>
</tr>
</tbody>
</table>

#### Growth Regulator

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethrel</td>
<td></td>
</tr>
</tbody>
</table>
WHEAT CROP STAGING GUIDE

GROWTH STAGE
- Germ
- Seedling
- 3 Leaf
- Tillers
- Stem Elongation
- 2nd Node
- Flag Leaf
- Booting
- Heading
- Flowering
- Ripe

SEED TREATMENT
- Raxil
- Raxil PRO

APPLICATION TIMING
- Buctril
- Infini
- Infinity FX
- Luxur
- Puma
- Thumper
- Tundra
- Stratego
- Varro
- Velocity
- Delaro
- Prosaro

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
CROPS FOR USE

<table>
<thead>
<tr>
<th>Raxil PRO</th>
<th>Raxil PRO SHIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>Barley</td>
</tr>
<tr>
<td>Oats</td>
<td>Oats</td>
</tr>
<tr>
<td>Rye</td>
<td>Rye</td>
</tr>
<tr>
<td>Triticale</td>
<td>Triticale</td>
</tr>
<tr>
<td>Wheat</td>
<td>Wheat</td>
</tr>
</tbody>
</table>

RAXIL PRO

ACTIVE INGREDIENTS
- Metalaxyl
  - Group 4
- Prothioconazole
  - Group 3
- Tebuconazole
  - Group 3

FORMULATION
- Micro-dispersion Suspension

PACKAGING
- 10 L jug
- 58.5 L drum
- 175.5 L drum
- 1,000 L tote

ON, QC, NB, NS, NFLD, PEI
- Commercially applied

RAXIL PRO SHIELD

ACTIVE INGREDIENTS
- Imidacloprid
  - Group 4 (Stress Shield)
- Metalaxyl
  - Group 4
- Prothioconazole
  - Group 3
- Tebuconazole
  - Group 3

FORMULATION
- Micro-dispersion Suspension

PACKAGING
- 10 L of Raxil PRO with an accompanying 1.5 L of Stress Shield
- 175.5 L drum of Raxil PRO
- with an accompanying 27 L of Stress Shield

PRODUCTS USED WITH RAXIL PRO SHIELD
- BARLEY, OATS, RYE, TRITICALE, WHEAT

DISEASES CONTROLLED
- Barley leaf stripe
- False loose smut
- True loose smut
- Covered smut
- Post-emergent damping-off
  - Caused by seed- and soil-borne Fusarium spp. including Cochliobolus sativus and Fusarium graminearum
- Seed rot, pre-emergent damping-off
  - Caused by seed- and soil-borne Fusarium spp. including Cochliobolus sativus, Fusarium graminearum and soil-borne Pythium spp.

RAXIL PRO SHIELD

DISEASES SUPPRESSED
- Seedling blight
  - Caused by seed-borne Fusarium spp. including Fusarium graminearum
- Seed rot
  - Caused by seed-borne Fusarium spp. including Fusarium graminearum and soil-borne Pythium spp.

INSECT PROTECTION
- Wireworms

For full details, please reference product label.

Seed-borne pressure is just one part of the equation that determines crop disease; the other half lives in the soil. Soil moisture and temperature affect which pathogens are active in the soil. The myth that warm dry soils don’t cause disease is more fiction than fact. C. sativus, fusarium and pythium are considered the most damaging pathogens causing seedling disease in cereals.

CLIMATE FIELDVIEW

Tracking your seed treatment during spring can help you monitor plant growth throughout the season, as well as evaluate management practices and yields at harvest.
Features and Benefits

// Easy-to-apply formulation combines the effective systemic activity of tebuconazole and metalaxyl with the powerful contact and systemic fungicide prothioconazole. This combination protects seeds from diseases on, in and around the seed.

// Quick penetration and uptake is seen with tebuconazole, while prothioconazole sustains protection over a longer period of time.

// Goes beyond true loose smut and Fusarium graminearum by protecting against all of the most serious early-season diseases in barley, oats and wheat.

// Water-based formulation helps reduce application dust, minimize buildup on equipment and ensure easy cleanup.

Directions for Use

// Always wear personal protective equipment when handling seed treatments or treated seed.

// Refer to the Raxil PRO label and instructions supplied with your treating system for complete information on proper application techniques.

// Do not freeze Stress Shield®.

// Raxil PRO has a freezing point of -16°C and unlike other available seed treatments, its viscosity change is minimal until it actually freezes. If the product does freeze, thaw to 5 to 10°C and mix thoroughly.

// Accurate application rates and uniform distribution are fundamental to top performance – mix seed and seed treatment uniformly.

// For Raxil PRO SHIELD, always ensure proper mixing of Raxil PRO and Stress Shield before application.

// Always measure seed density to calculate accurate seed flow and total weight treated.

// Allow adequate time for the seed treatment to dry on the seed. High humidity and cooler conditions can extend drying time.

// Always calibrate seeding equipment with treated seed, as seed flow can be affected.

Application Guidelines

Rate

// Raxil PRO: 325 mL/100 kg of seed

// Raxil PRO SHIELD: 325 mL (Raxil PRO) + 50 mL (Stress Shield)/100 kg of seed
DISEASE IN SEED SAMPLES WITH *Fusarium* INFECTION

<table>
<thead>
<tr>
<th>Barley – Bushels Treated</th>
<th>10 L</th>
<th>58.5 L</th>
<th>175.5 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB./BU.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>141</td>
<td>827</td>
<td>2,480</td>
</tr>
<tr>
<td>50</td>
<td>136</td>
<td>794</td>
<td>2,381</td>
</tr>
<tr>
<td>52</td>
<td>130</td>
<td>763</td>
<td>2,289</td>
</tr>
<tr>
<td>54</td>
<td>126</td>
<td>735</td>
<td>2,205</td>
</tr>
<tr>
<td>56</td>
<td>121</td>
<td>709</td>
<td>2,126</td>
</tr>
<tr>
<td>58</td>
<td>117</td>
<td>684</td>
<td>2,053</td>
</tr>
</tbody>
</table>

Oat – Bushels Treated

<table>
<thead>
<tr>
<th>Oat – Bushels Treated</th>
<th>10 L</th>
<th>58.5 L</th>
<th>175.5 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB./BU.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>200</td>
<td>1,167</td>
<td>3,501</td>
</tr>
<tr>
<td>36</td>
<td>188</td>
<td>1,102</td>
<td>3,307</td>
</tr>
<tr>
<td>38</td>
<td>179</td>
<td>1,044</td>
<td>3,133</td>
</tr>
<tr>
<td>40</td>
<td>170</td>
<td>992</td>
<td>2,976</td>
</tr>
<tr>
<td>42</td>
<td>162</td>
<td>945</td>
<td>2,835</td>
</tr>
<tr>
<td>44</td>
<td>154</td>
<td>902</td>
<td>2,706</td>
</tr>
</tbody>
</table>

Wheat – Bushels Treated

<table>
<thead>
<tr>
<th>Wheat – Bushels Treated</th>
<th>10 L</th>
<th>58.5 L</th>
<th>175.5 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB./BU.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>113</td>
<td>661</td>
<td>1,984</td>
</tr>
<tr>
<td>62</td>
<td>109</td>
<td>640</td>
<td>1,920</td>
</tr>
<tr>
<td>64</td>
<td>106</td>
<td>620</td>
<td>1,860</td>
</tr>
<tr>
<td>66</td>
<td>103</td>
<td>601</td>
<td>1,804</td>
</tr>
<tr>
<td>68</td>
<td>100</td>
<td>584</td>
<td>1,751</td>
</tr>
<tr>
<td>70</td>
<td>97</td>
<td>567</td>
<td>1,701</td>
</tr>
</tbody>
</table>

The number of bushels treated will vary depending on the density of the seed. Always calculate seed density before treating the seed.

Untreated versus Raxil PRO SHIELD

Source: BioVision Seed Labs. Reproduced with permission.

*0 to 5% *Fusarium* graminearum infection. Source: 53 trials from BioVision and 20/20 Seed Labs Fungal Scan Data (2016). Your results may vary depending on agronomic, environmental and disease-pressure variables.
The Stress Shield Difference – Raxil PRO SHIELD

In addition to three powerful fungicide actives (metalaxyl, prothioconazole and tebuconazole), Raxil PRO SHIELD also contains Stress Shield (imidacloprid), an insecticide designed to protect your cereal crops from the devastating damage caused by wireworms. Through physical contact and/or ingestion, Stress Shield sends wireworms into a coma-like state that prevents their ability to feed and renders them harmless.

### AVAILABLE FOR RAXIL PRO SHIELD

<table>
<thead>
<tr>
<th>CONVENIENT AND EFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raxil PRO packaging has enough room to mix 27 L of Stress Shield with the 175.5 L of Raxil PRO in the same 210 L tote to create Raxil PRO SHIELD. There is no need for a separate mixing container or additional equipment.</td>
</tr>
</tbody>
</table>

**DIRECTIONS**

Simply combine the 27 L of Stress Shield (inside the 66 L tote) with the 175.5 L formulation of Raxil PRO (inside the 210 L tote) using the filling valve. Mix thoroughly. You now have 202.5 L of Raxil PRO SHIELD seed treatment ready to use.

### CONTAINER USE GUIDELINES

**Designed for maximum convenience, this 66 L tote (filled with 58.5 L of Raxil PRO) is fully compatible with your existing mixing equipment. Seed treatments have never been easier to handle.**

**A: Mixer/Vent**

Bung A is used to agitate the product. Always mix products thoroughly before they are used. Attach the mixing drill bit found on the top of the tote to an electric drill. Engage the drill mounted bit to the square shaft of the mixer found in Bung A. Mix well.

**B: Metering Valve**

Bung B is for extracting the product and contains a 0.5 in. drop tube for more accurate metering of the product. Attach a pump using a Parker™ Female Dry Break coupler to Bung B to remove the product from the container. This bung has a drop tube that extends to the bottom of the tote for complete product removal.

**C: Filling Valve**

Bung C is for adding product if required. Product can be pumped into the container using a Parker™ Female Dry Break coupler. Product can be poured into the opening after the Parker™ Male Dry Break coupler is removed. Use a funnel if necessary. The 210 L tote filling valve also has a 1 in. dip tube for quick decanting if needed. Note that product CANNOT be extracted from this bung.

**Ease of Use**

The 66 L tote is equipped with valves for filling/emptying and is fully compatible with existing mixing equipment.

*Note: The number of bushels treated will vary depending on the density of your seed. Always calculate seed density before treating the seed.*
### CROPS FOR USE
- Barley
- Canary Seed
- Corn (field and sweet)
- Established timothy (grown for seed or hay)
- Flax
- Oats
- Rye (fall)
- Seedling and established grasses
- Wheat
  - (durum, spring, winter) *including underseeded to clover in ON, QC, NB, NS, NFLD, PEI*

### ACTIVE INGREDIENTS
- Bromoxylin
  - Group 6
- MCPA
  - Group 4

### FORMULATION
- Liquid-emulsifiable concentrate

### PACKAGING
- 8 L jug = 20 ac.
  - (one 2 × 8 L case treats 40 ac.)
- 128 L bulk shuttle = 320 ac.
  - (BC, AB, SK, MB)
- 400 L bulk tote = 1,000 ac.

### WEEDS CONTROLLED

<table>
<thead>
<tr>
<th>Weed</th>
<th>Seedlings up to</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>American nightshade</td>
<td>4 leaf stage</td>
<td>Top growth suppression</td>
</tr>
<tr>
<td>Ball mustard</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Bluebur</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Canada thistle</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common groundsel</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Common ragweed</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Cow cockle</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Flixweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Green smartweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Jimsonweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Kochia</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Lady’s-thumb</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Lamb’s-quarters</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Night-flowering catchfly</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Pale smartweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Perennial sow thistle</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Prickly lettuce</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Redroot pigweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Russian thistle</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Scentless chamomile</td>
<td>5 cm in height</td>
<td></td>
</tr>
<tr>
<td>Shepherd’s-purse</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Stinkweed</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Tartary buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Velvetleaf</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Volunteer canola</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Volunteer sunflowers</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild mustard</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild tomato</td>
<td>6 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild tomato</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Volunteer canola</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Volunteer sunflowers</td>
<td>4 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild buckwheat</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild mustard</td>
<td>8 leaf stage</td>
<td></td>
</tr>
<tr>
<td>Wild tomato</td>
<td>6 leaf stage</td>
<td></td>
</tr>
</tbody>
</table>

### PRODUCT CONTROL OF INDICATED WEEDS (%)

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>ANNUAL SOW THISTLE</th>
<th>REDROOT PIGWEED</th>
<th>RUSSIAN THISTLE</th>
<th>VOLUNTEER CANOLA</th>
<th>WILD BUCKWHEAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buctril M</td>
<td>91</td>
<td>91</td>
<td>90</td>
<td>94</td>
<td>90</td>
</tr>
<tr>
<td>Infinity</td>
<td>96</td>
<td>97</td>
<td>96</td>
<td>97</td>
<td>93</td>
</tr>
<tr>
<td>Thumper</td>
<td>96</td>
<td>92</td>
<td>93</td>
<td>97</td>
<td>91</td>
</tr>
</tbody>
</table>

Source: 112 internal and external trials (2004 to 2006).

Your results may vary according to agronomic, environmental and pest pressure variables.
**BUCTRIL® M**

**Features and Benefits**

- Controls 29 broadleaf weeds
- Excellent crop safety
- Registered for aerial application
- Effective resistance management – contains Group 4 (MCPA) and Group 6 (bromoxynil) active ingredients
- Dual chemistries provide both systemic and contact activity
- Available in bulk
- Registered for use on winter wheat underseeded to red clover in Eastern Canada

**Application Guidelines**

**Rate**

- Registered application rate: 0.4 L/ac. or 20 ac./jug

**Application Tips**

**Coverage**

- Medium to coarse droplet size is important for optimum coverage
- As with any post-emergent herbicide, delay a spray application for at least 24 hours before or following near frost conditions (5°C or less) to avoid a negative crop response

**Application Timing**

- Barley, oats and wheat (durum and spring) may be treated from the 2 leaf stage until the early flag leaf stage
- Winter wheat may be treated from the 2 to 4 leaf stage in the fall or from the time growth commences to the early flag leaf stage in the spring
- Fall rye may be treated from the time growth commences in the spring to the early flag leaf stage
- Flex may be treated from the time it is 5 cm high up to the early flower bud stage (5 to 10 cm gives best results)
- Corn may be treated from the 4 to 6 leaf stage
- Canary seed may be treated from the 3 to 5 leaf stage
- Seedling grasses may be treated from the 2 to 4 leaf stage (establishment year only)
- Timothy (established and grown for seed production) should be applied prior to shot blade in the seed production year
- Timothy (established and grown for hay) may be treated from the 3 to 6 leaf stage

**Water Volumes**

**BC, AB, SK, MB**

- Ground: Minimum of 5 gal./ac. (49 L/ha) in all crops except seedling grasses
- For corn, minimum of 21 gal./ac. (198 L/ha)
- For seedling grasses, minimum of 16 gal./ac. (151 L/ha)

**Aerial**

- Barley, oats and wheat (durum and spring): Minimum of 3 gal./ac. (27 L/ha)
- Recommended minimum of 4 gal./ac. (40 L/ha) when a heavy crop canopy exists

**ON, QC, NB, NS, NFLD, PEI**

- Ground and Aerial: Recommended minimum of 15 gal./ac. (140 L/ha)

**Rainfastness**

- Rainfast 1 hour after application

**Residue and Grazing**

- Do not graze or cut for forage hay until 30 days after spraying

**Re-Cropping Intervals**

- No re-cropping restrictions

**Tank Mixes**

For a complete list of tank-mix partners and mixing order, please refer to page 134.

---

**Mix It Up.** Learn how simple and effective actions not only help facilitate success against herbicide resistance, but can also help protect the future sustainability of your farm. Find solutions at MixItUp.ca
**ACTIVE INGREDIENTS**

- Bromoxynil - Group 6
- Pyrasulfotole - Group 27

**FORMULATION**

- Liquid-emulsifiable concentrate

---

**PACKAGING**

- 6.7 L jug = 20 ac.
  (one 2 x 6.7 L case treats 40 ac.)
- 107.2 L bulk shuttle = 320 ac.
  (BC, AB, SK, MB)
- 335 L bulk tote = 1,000 ac.

**WEEDS CONTROLLED**

1. **Annual sow thistle** (1 to 6 leaf stage)
2. **Canada Fleabane**
3. **Common ragweed** (1 to 6 leaf stage)
4. **Dandelion**
5. **Flxweed**
6. **Giant ragweed**

**Application Guidelines**

**Rate**

- Registered application rate: 0.335 L/ac.

---

**Features and Benefits**

- Dual chemistries (Groups 6 and 27) use both contact and systemic activity
- Controls a wide range of the toughest broadleaf weeds including wild buckwheat, Canada fleabane, cleavers and Kochia
- Powered by pyrasulfotole, activity is visible within days
- Tank-mix partner with Luxour, Puma Advance, Varro, Axial®, Horizon® and Liquid Achieve®.
- Excellent crop safety
- Registered for both ground and aerial application
- Available in bulk for added convenience

---

**Application Timing**

- Spring application: crops may be treated from the 1 leaf stage of growth until the flag leaf is just visible but still rolled
- Optimal application timing for Canada Fleabane control in winter wheat is in the fall
- Fall application on winter wheat: apply from the 1 leaf stage until end of tillering

---

**Mix It Up.** Learn how simple and effective actions not only help facilitate success against herbicide resistance, but can also help protect the future sustainability of your farm. Find solutions at **MixItUp.ca**
Water Volumes

**BC, AB, SK, MB**

- **Ground**
  - Minimum of 5 gal./ac. (47 L/ha)
- **Aerial**
  - Minimum of 3 gal./ac. (28 L/ha)

**ON, QC, NB, NS, NFLD, PEI**

- **Ground and Aerial**
  - Minimum of 15 gal./ac. (140 L/ha)

Rainfastness

- Rainfast 1 hour after application

Residue and Grazing

- Do not graze treated bromegrass, perennial ryegrass or red fescue crops within 7 days of application, or harvest for hay within 30 days of application
- Do not graze other treated crops or cut for forage or hay within 25 days of application
- Do not harvest triticale or wheat for grain or straw within 50 days of application
- Do not harvest barley for grain or straw within 45 days of application

Re-Cropping Intervals

- Alfalfa, barley, canary seed, canola, corn (field)¹, flax, oats, peas (field)², potatoes, soybeans¹, sunflowers, tomatoes¹ and wheat (durum and spring) can be planted 10 months following an application of Infinity
- Lentils can be planted 22 months following an application of Infinity

¹ Manitoba and eastern Canada only.
² Field peas may be grown the year following an Infinity herbicide application in all black- and grey-wooded and dark-brown soil zones. Do not plant field peas the year following an Infinity application in brown soil zones where organic matter content is below 2.5% and soil pH is above 7.5.

Mixing Order

- AMS, then Infinity, then tank-mix partner
- If adding AMS, always add it to the tank first

If you are faced with tough-to-control weeds, such as those outlined below, Bayer recommends using Infinity FX or adding the following tank-mix partners to Infinity:

- **Canada thistle, dandelion or perennial sow thistle**
  - Add 4 oz./ac. of MCPA Ester (189 mL/ac. of MCPA Ester 600). The crop needs to be at the 3 leaf stage when adding MCPA.

Advanced stages of cleavers and kochia or improved activity to Canada fleabane, Canada thistle, dandelion or giant ragweed

- Add one 10 L jug of Bayer (40% solution) AMS for every 6.7 L jug of Infinity for cleavers in the 4 to 6 whorl stage, or to improve activity on Canada thistle, dandelions and larger kochia.

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 135.
CROPS FOR USE

Barley
Bromegrass
Perennial ryegrass
Red fescue
Timothy
Triticale
Wheat
(durum, spring, winter)

ACTIVE INGREDIENTS

Bromoxynil
- Group 6
Fluroxypyr
- Group 4
Pyraflufen-ethyl
- Group 27

FORMULATION

Liquid-emulsifiable concentrate

PACKAGING

8.1 L jug = 20 ac.
129.6 L drum = 320 ac.
(BC, AB, SK, MB)
405 L tote = 1,000 ac.

WEEDS CONTROLLED

Annual sow thistle
(1 to 6 leaf stage)
Canada fleabane2,5
(up to 10 cm in height/diameter)
Canada thistle2,6
(suppression, up to 30 cm in height)
Chickweed
(1 to 6 leaf stage)
Cleavers4
(1 to 9 whorls)
Common ragweed
(1 to 6 leaf stage)
Dandelion2,6
(suppression, up to 10 cm in height/25 cm in diameter)
Flixweed
(up to 10 cm in height)
Giant ragweed6
(suppression, 1 to 6 leaf stage)
Hemp-nettle
(1 to 6 leaf stage)
Kochia
(up to 15 cm in height)
Lamb’s-quarters
(1 to 6 leaf stage)

Narrow-leaved hawk’s beard2,7
(up to 10 cm in height and prior to bolting)
Pale smartweed
(1 to 6 leaf stage)
Perennial sow thistle6
(suppression, 1 to 6 leaf stage)
Redroot pigweed
(1 to 6 leaf stage)
Round-leaved mallow
(1 to 6 leaf stage)
Russian thistle
(up to 10 cm in height)
Shepherd’s-purse
(1 to 6 leaf stage)

Wild buckwheat
(1 to 6 leaf stage)
Wild mustard
(1 to 6 leaf stage)

1 Includes ALS (Group 2)-resistant biotypes.
2 For enhanced control, add Ammonium Sulphate (AMS) Utility Modifier (40% solution) at a rate of 0.5 L/ac. One jug of AMS Utility Modifier will treat 20 ac.
3 Includes seedlings and overwintered rosettes.
4 Includes indoleacetic acid (Group 4)-resistant biotypes.
5 Remove established Canada fleabane plants prior to planting via tillage or a pre-seed burn-off.
6 For enhanced control, add 4 oz./ac. of MCPA Ester (189 mL/ac. of MCPA Ester 600). The crop needs to be at the 3 leaf stage when adding MCPA.
7 For enhanced control, add 4 oz./ac. of 2,4-D Ester. The crop needs to be at the 4 leaf stage when adding 2,4-D.

For full details, please reference product label.

Source: Internal Bayer Field Solutions trials (2015 and 2016).
Your results may vary according to agronomic, environmental and pest pressure variables.
INFINITY FX

Features and Benefits

// Powered by pyrasulfotole (Group 27) and super charged with bromoxynil (Group 6) and fluroxypyr (Group 4), Infinity FX uses both contact and systemic activity
// Fast acting performance is visible in days
// Offers exceptional control of Canada fleabane, chickweed, cleavers and kochia; in addition to many other tough-to-control broadleaf weeds
// Exceptional resistance management – with the combination of three different herbicide Groups, there is increased herbicide activity on the same weed species
// Tank-mix friendly, Infinity FX is a preferred tank-mix partner with all major graminicides, including: Luxur, Puma Advance, Varro, Axial® BIA, Horizon® NG and Liquid Achieve®
// Wide window of application and excellent crop safety
// Convenient co-formulation

Application Guidelines

Rate
// Registered application rate: 0.405 L/ac. co-formulation

Application Timing

// Crops may be treated from the 2 leaf stage of growth until the flag leaf is just visible but still rolled
// Infinity FX can be fall applied in winter wheat

Water Volumes

BC, AB, SK, MB
Ground
// Minimum of 5 gal./ac. (47 L/ha)

ON, QC, NB, NS, NFLD, PEI
Ground
// Minimum of 15 gal./ac. (140 L/ha)

Rainfastness

// Rainfast 1 hour after application

Residue and Grazing

// Do not graze treated crops or cut for forage or hay within 25 days of application
// Do not harvest barley or wheat (durum or spring) for grain or straw within 60 days of application

Re-Cropping Intervals

// Barley, canola, corn (field)1, flax, oats, peas (field)2, potatoes, soybeans1 and wheat (durum and spring) can be planted 10 months following an application of Infinity FX
// Lentils can be planted 22 months following an application of Infinity FX

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 136.

Mix It Up. Weed out herbicide resistance. Infinity FX uses three different modes of action to help control resistant weeds. Visit MixItUp.ca to learn more.
**PROVINCES**

BC, AB, SK, MB

**ACTIVE INGREDIENTS**

Luxxur A – Tribenuron-methyl  
- Group 2

Luxxur B – Thiencarbazone-methyl  
- Group 2

**FORMULATION**

Soluble granules and liquid OD

**PACKAGING**

Co-pack case includes

1 × 243 g bottle + 1 × 8 L jug = 40 ac.*

*Products need to be mixed together in a larger container.

**CROPS FOR USE**

Wheat (durum, spring, winter)

<table>
<thead>
<tr>
<th>WEEDS CONTROLLED</th>
<th>BROADLEAF WEEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRASS WEEDS</strong></td>
<td><strong>Canada thistle</strong>¹,² (up to 15 cm in height)</td>
</tr>
<tr>
<td>Barnyard grass (1 to 6 leaf, up to emergence of the 3rd tiller)</td>
<td>Cleavers (1 to 6 whorls)</td>
</tr>
<tr>
<td>Canary seed (1 to 6 leaf, up to emergence of the 2nd tiller)</td>
<td>Cow cockle (up to 10 cm in height)</td>
</tr>
<tr>
<td><strong>GREEN FOXTAIL</strong></td>
<td>Dandelion (up to 20 cm in diameter)</td>
</tr>
<tr>
<td>Green foxtail (1 to 6 leaf, up to emergence of the 3rd tiller)</td>
<td>Hemp-nettle (1 to 6 leaf stage)</td>
</tr>
<tr>
<td>Japanese brome (1 to 6 leaf, control of spring germinated and suppression of overwintered)</td>
<td>Lady’s-thumb (1 to 6 leaf stage)</td>
</tr>
<tr>
<td><strong>LAMBS’-QUARTERS</strong> (up to 10 cm in height)</td>
<td>Narrow-leaved hawk’s beard (prior to bolting)</td>
</tr>
<tr>
<td>Persian darnel (1 to 6 leaf, up to emergence of the 3rd tiller, suppression only)</td>
<td>Pale smartweed (1 to 6 leaf stage)</td>
</tr>
<tr>
<td>Wild oats (1 to 6 leaf, up to emergence of 3rd tiller)</td>
<td>Perennial sow thistle¹,² (up to 15 cm in height)</td>
</tr>
<tr>
<td><strong>YELLOW FOXTAIL</strong></td>
<td>Redroot pigweed (1 to 6 leaf stage)</td>
</tr>
<tr>
<td>Yellow foxtail (1 to 6 leaf, up to emergence of 3rd tiller, suppression only)</td>
<td>Round-leaved mallow (1 to 6 leaf stage)</td>
</tr>
<tr>
<td><strong>RUSSIAN THISTLE</strong></td>
<td>Russian thistle (up to 10 cm in height, suppression only)</td>
</tr>
</tbody>
</table>

**Herbicides**

- **Scentless chamomile** (spring seedlings up to 10 cm in height)
- **Shepherd’s-purse** (1 to 6 leaf stage)
- **Stinkweed** (1 to 6 leaf stage)
- **Volunteer canola** (1 to 6 leaf stage including herbicide-tolerant varieties)
- **Wild buckwheat** (1 to 6 leaf stage)
- **Wild mustard** (1 to 6 leaf stage)

¹ For control of Canada thistle, lamb’s-quarters and perennial sow thistle, the following additives are required:

- Durum wheat: add a non-ionic surfactant (Agral® 90 or AgSurf™) at 0.25%.
- Spring and winter wheat: add a non-ionic surfactant (Agral® 90 or AgSurf™) at 0.25% or add Ammonium Sulfate at 500 g/ha (99%) or 1 L/ha (49% solution) or 1.25 L/ha (40% solution).
- If using an Ammonium Sulfate product with a different concentration, adjust the rate accordingly.

² Season-long control with some regrowth in the fall. For full details, please reference product label.

**Features and Benefits**

- Powerful perennial broadleaf weed control, including Canada thistle and dandelions
- Outstanding control of narrow-leaved hawk’s beard
- Flexibility to rotate back to sensitive pulse crops
- Grass weed control included – no need to add another grass control product

**Application Guidelines**

**Rate**

Registered application rate: 6 g/ac. + 0.2 L/ac.
Application Tips

1. Add one-third of the required volume of water to the spray tank.
2. With the agitator running, add the requisite amount of Luxxur A herbicide into the tank.* Ensure that the herbicide is completely dissolved before proceeding.
3. Once Luxxur A is completely dissolved:
   // In spring or winter wheat: Add AMS and then the required volume of broadleaf weed tank-mix partner and Luxxur B (refer to the Bayer Tank Mix List for specific broadleaf weed mixing order)
   // In durum wheat: Add Luxxur B, then the required volume of broadleaf weed tank-mix partner and NIS last
4. Add the remaining water. If an anti-foam agent is required, add it last.
5. Use a minimum spray volume of 5 gal./ac. (47 L/ha)
6. For repeat loads, reduce the tank heel to 10% or less of the previous load. Fill tank with fresh water as described in Step 1 and continue as directed. Emulsifiable concentrates may make it more difficult to dissolve Luxxur A. For that reason, tank heels from the previous tank mix should be kept to 10% or less of the spray tank volume.
7. If the prepared spray is left standing without agitation for a period of time, thoroughly agitate to re-suspend the tank mixture before spraying. Use the spray preparation of Luxxur A tank mix within 24 hours or product degradation may occur.

*If tank mixing Luxxur with Paradigm™, please refer to page 137 for specific tank mixing instructions.

Application Timing

// Wheat (durum and spring) may be treated from the 2 to 6 leaf stage on main stem plus 3 tillers, but prior to jointing (presence of first node)
// Winter wheat may be treated when the majority of plants have 2 leaves to full tillering, but prior to jointing (presence of first node)

Water Volumes

Ground // Minimum of 5 gal./ac. (47 L/ha)

Rainfastness // Rainfast 4 to 6 hours after application

Residue and Grazing // Do not graze the treated crop or cut for forage hay within 7 days or cut for hay within 30 days of application

Re-Cropping Intervals // Canola, cereals, corn, faba beans, lentils, peas and soybeans can be planted 10 months following an application of Luxxur

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 137.
CROPS FOR USE
- Wheat (durum, spring, winter)

Features and Benefits
- When used systematically with Roundup as a pre-seed application followed by Varro or Velocity m3 in season, the Olympus System provides control of downy and Japanese bromes, flushing foxtail barley and wild oats and other problematic grass and broadleaf weeds.
- Freedom to rotate back to sensitive pulse crops.
- Excellent tank-mix partner with a burndown Roundup application for control of volunteer canola.
- Group 2 booster – use the Olympus System and get best-in-class Group 2 wild oat control.
- Allows you to keep no till and direct seeding in your crop management plan.

Application Guidelines
Rate
- Registered application rate: ~6 g/ac. of Olympus + 180 to 360 g ae/ac. of Roundup
- 360 g ae/ac. of Roundup is required for foxtail barley management.

Application Timing
- For best results, apply to emerged, young and actively growing weeds. Weed control may be reduced when weeds are under stress due to severe weather conditions, drought or cold temperatures.

Water Volumes
Ground
- Minimum of 5 gal./ac. (47 L/ha)

Aerial
- Minimum of 3 gal./ac. (28 L/ha)

Rainfastness
- Rainfast 4 hours after application.

Residue and Grazing
- Do not harvest wheat for grain or straw within 71 days of application.
- If tank mixing, always respect the maximum pre-harvest interval stated on all of the product labels for the items used in the tank mix.

Sprayer Cleanup
Before and after using Olympus herbicide, always complete a thorough cleaning of the spray tank, lines and filters. The following procedures are recommended:
- Drain the tank completely. Then wash out the tank, boom and hoses with clean water. Drain the water from the tank.
- Half fill the tank with clean water and add ammonia (i.e., 3% domestic ammonia solution) at a dilution rate of 1% (i.e., 1 L of domestic ammonia for every 100 L of rinsate). Completely fill the tank with water. Agitate/recirculate the fluid and flush it through the boom and hoses. Leave on agitation for 10 minutes. Drain the tank completely.
- Repeat the above step.
- Remove the nozzles and screens and soak them in a 1% ammonia solution. Inspect the nozzles and screens and remove any visible residue.
- Flush the tank, boom and hoses with clean water.
- Inspect the tank for visible residue. If present, repeat the second step.
- Dispose of the rinsing fluids in accordance with provincial regulations.

Re-cropping Intervals
- Barley, Canola, Lentils, Peas (field) = 10 months
- Oats, Flax = 12 months

Tank Mixes
For a complete list of tank-mix partners and mixing order, please refer to page 138.
HOW THE OLYMPUS SYSTEM WORKS

**STEP 1**
Start with a clean field.

Tank mix Roundup + Olympus, apply pre-seed application.

**STEP 2**
Seed your wheat crop.

Olympus has residual activity on downy and Japanese bromes, flushing foxtail barley, volunteer canola and wild oats.

**STEP 3**
In-crop application of Velocity m3 or Varro herbicide for best control of downy and Japanese bromes, flushing foxtail barley and wild oats.

Thiencarbazone has activity on these key weeds and when you combine the one-two punch with Olympus and thiencarbazone, you get season-long control.

When it comes to your wheat crop, starting with a clean field is a must. The Olympus System provides outstanding control of foxtail barley, wild oats and other tough weeds, which allows your crop to flourish with unrestricted access to soil nutrients, water and other available resources. For an overview of Olympus herbicide, visit [cropscience.bayer.ca/Olympus](http://cropscience.bayer.ca/Olympus)
Features and Benefits
- Powerful control of barnyard grass, green and yellow foxtail and wild oats
- Superior crop safety in barley and wheat
- Wide window of application (1 to 6 leaves on main stem plus 3 tillers)
- Excellent tank-mix partner with Infinity, Infinity FX and other broadleaf herbicides
- Affordable wild oat control offers excellent return on investment
- Registered for both ground and aerial application
- No re-cropping restrictions

Application Guidelines

**Rate**
**Barley and Wheat**
- Registered application rate: 0.412 L/ac.
- One 8.25 L jug treats 20 ac.
- One 123.75 L shuttle treats 300 ac.
- One 412.5 L tote treats 1,000 ac.
- Crop stage is between 1 and 6 leaves on main stem plus 3 tillers; apply at the 3 to 4 leaf stage and at the full label rate to achieve maximum crop tolerance and weed control

**Meadow bromegrass (grown for forage or seed production) and seeding perennial ryegrass (grown for seed)**
- Registered application rate: 0.412 L/ac.
- Apply when the crop is in the 2 to 4 leaf stage

**Application Tips**
- Medium to coarse droplet size is important for optimum coverage
- Do not apply within 24 hours of night temperatures below 5°C as crop injury may occur

**Water Volumes**
- **BC, AB, SK, MB**
  - Ground: Minimum of 6 gal./ac. (54 L/ha)
  - Aerial: Minimum of 4 gal./ac. (35 L/ha)
- **ON, QC, NB, NS, NFLD, PEI**
  - Ground: Minimum of 15 gal./ac. (140 L/ha)
  - Aerial: Minimum of 4 gal./ac. (35 L/ha)

**Rainfastness**
- Rainfast 1 hour after application

**Residue and Grazing**
- Do not graze the treated barley or wheat or cut for hay within 25 days of application, or harvest for grain within 65 days of application
- Do not graze the treated perennial ryegrass or cut for straw within 65 days of application
- Do not graze the treated meadow bromegrass or cut for hay within 25 days of application

**Tank Mixes**
For a complete list of tank-mix partners and mixing order, please refer to page 139.
Features and Benefits
// Controls up to 26 broadleaf weeds, including
  Group 2- and Group 9-resistant kochia
// Excellent crop safety
// No re-cropping restrictions
// Registered for aerial application in barley and wheat
// Numerous tank-mix options available
// Effective resistance management tool – contains Group 4
  (2,4-D) and Group 6 (bromoxynil) active ingredients
// Dual chemistries provide both systemic and contact activity
// Available in bulk

Application Guidelines
Rate
// Registered application rate: 0.4 L/ac. or 20 ac./jug

Application Tips
Coverage
// Medium to coarse droplet size is important
  for optimum coverage

Application Timing
// Barley and wheat (durum, spring and winter) may be
  treated from the 4 leaf stage until the early flag leaf stage
// Application before the 4 leaf stage may result in crop injury

Water Volumes
Ground
// Minimum of 5 gal./ac. (47 L/ha)
Aerial
// Minimum of 3 gal./ac. (28 L/ha)

Rainfastness
// Rainfast 1 hour after application

Residue and Grazing
// Do not graze, cut for forage or hay until 30 days after application

Re-Cropping Intervals
// No re-cropping restrictions

Tank Mixes
For a complete list of tank-mix partners and mixing order,
  please refer to page 141.
**GROUP 6**

**ACTIVE INGREDIENTS**
- Bromoxynil - Group 6
- Fenoxaprop-p-ethyl - Group 1
- Pyrasulfotole - Group 27

**FORMULATION**
- Liquid-emulsifiable concentrate

**PACKAGING**
- 8.1 L jug = 10 ac.
- (one 2 x 8.1 L case treats 20 ac.)
- 129.6 L bulk shuttle = 160 ac.
- 405 L bulk tote = 500 ac.

**WEEDS CONTROLLED**
- **GRASS WEEDS**
  - Barnyard grass (1 to 6 leaf, up to emergence of the 3rd tiller)
  - Green foxtail (1 to 6 leaf, up to emergence of the 3rd tiller)
  - Yellow foxtail (1 to 6 leaf, up to emergence of the 3rd tiller)

- **BROADLEAF WEEDS**
  - Annual sow thistle (1 to 6 leaf stage)
  - Canada fleabane (up to 10 cm in height/diameter)
  - Canada thistle (suppression, up to 30 cm in height)
  - Chickweed (1 to 6 leaf stage)
  - Cleavers (1 to 6 whorls)
  - Common ragweed (1 to 6 leaf stage)

- **Dandelion** (suppression, up to 10 cm in height/25 cm in diameter)
- **Filxweed** (up to 10 cm in height)
- **Giant ragweed** (suppression, 1 to 6 leaf stage)
- **Hemp-nettle** (1 to 6 leaf stage)
- **Kochia** (up to 10 cm in height)
- **Lamb’s-quarters** (1 to 6 leaf stage)
- **Narrow-leaved hawk’s beard** (up to 10 cm in height, prior to bolting)
- **Pale smartweed** (1 to 6 leaf stage)
- **Perennial sow thistle** (suppression, 1 to 6 leaf stage)
- **Redroot pigweed** (1 to 6 leaf stage)
- **Round-leaved mallow** (suppression, 1 to 6 leaf stage)
- **Russian thistle** (up to 10 cm in height)
- **Shepherd’s-purse** (1 to 6 leaf stage)
- **Spreading atriplex** (suppression, 1 to 6 leaf stage)
- **Stinkweed** (1 to 6 leaf stage)
- **Stork’s-bill** (with the addition of 2,4-D Ester, 1 to 8 leaf stage)
- **Volunteer canola** (including herbicide-tolerant varieties, 1 to 6 leaf stage)
- **Wild buckwheat** (1 to 6 leaf stage)
- **Wild mustard** (1 to 6 leaf stage)

**Features and Benefits**
- Outstanding formulation that provides enhanced control of grass and broadleaf weeds
- Contains innovative Group 27 herbicide, a key broadleaf resistance management tool
- Strong grass and broadleaf weed control for your farm, including Group 2-resistant broadleaf weeds such as chickweed, cleavers and kochia
- Allows you to move from barley to wheat without stopping
- Provides quick and reliable performance
- Registered for both ground and aerial application
- Pre-mixed for convenience

**Application Guidelines**

**Rate**
- Registered application rate: 0.81 L/ac.
- One 8.1 L jug treats 10 ac.
- (one 2 x 8.1 L case treats 20 ac.)
- One 129.6 L shuttle treats 160 ac.
- One 405 L tote treats 500 ac.
Application Tips

// Fill the sprayer tank one-quarter to one-half full of clean water and then add the Tundra herbicide. Fill the spray tank with the balance of the required water.
// If adding AMS, always add AMS to the tank first.
One 10 L jug of AMS treats 20 ac.

Application Timing

// 1 to 6 leaves on main stem plus 3 tillers on barley, durum and spring wheat
// Do not apply on a crop that is stressed by severe weather conditions, frost, low fertility, drought, water-saturated soil, disease or insect damage as crop injury may result
// Do not apply to crops undersown with legume species

Water Volumes

Ground
// Minimum of 5 gal./ac. (47 L/ha)
Aerial
// Minimum of 3 gal./ac. (28 L/ha)

Rainfastness

// Rainfast 1 hour after application

Residue and Grazing

// Do not harvest grain within 65 days of application
// Do not graze the treated crops or cut for forage or hay within 25 days of application

Re-Cropping Intervals

// Alfalfa, barley (spring), canary seed, canola, com (field), flax, oats, peas (field), potatoes, soybeans, sunflowers and wheat (durum and spring) can be planted 10 months following an application of Tundra
// Lentils can be planted 22 months following an application of Tundra

1 Manitoba only.
2 Field peas may be grown the year following a Tundra herbicide application in all black- and grey-wooded and dark-brown soil zones. Do not plant field peas the year following a Tundra application in brown soil zones where organic matter content is below 2.5% and soil pH is above 7.5.

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 141.
**VARRO**

**CROPS FOR USE**
Wheat (durum, spring, winter)

**ACTIVE INGREDIENT**
Thiencarbazone-methyl - Group 2

**FORMULATION**
Liquid OD formulation

**PACKAGING**
8 L jug = 40 ac. (one 2 × 8 L case treats 80 ac.)

**WEEDS CONTROLLED**

**GRASS WEEDS**
- Barnyard grass (1 to 6 leaf, up to emergence of the 3rd tiller)
- Canary seed (1 to 6 leaf, up to emergence of the 2nd tiller)
- Green foxtail (1 to 6 leaf, up to emergence of 3rd tiller)
- Japanese brome (1 to 6 leaf, control of spring germinated and suppression of overwintered)
- Persian darnel (1 to 6 leaf, up to emergence of the 3rd tiller, suppression only)

**BROADLEAF WEEDS**
- Cleavers (1 to 6 whorls)
- Hemp-nettle (1 to 6 leaf stage)
- Lamb’s-quarters (1 to 6 leaf stage, suppression only)
- Pale smartweed (1 to 6 leaf stage)
- Redroot pigweed (1 to 6 leaf stage)
- Round-leaved mallow (1 to 6 leaf stage, suppression only)
- Russian thistle (up to 10 cm in height, suppression only)
- Shepherd’s-purse (1 to 6 leaf stage)
- Stinkweed (1 to 6 leaf stage)
- Volunteer canola (1 to 6 leaf stage, non-ALS tolerant varieties)
- Wild buckwheat (1 to 6 leaf stage)
- Wild mustard (1 to 6 leaf stage)

For full details, please reference product label.

**Features and Benefits**
- Provides strong performance on grass weeds, such as barnyard grass, canary seed, green foxtail, Japanese brome, Persian darnel, yellow foxtail and wild oats.
- Varro is a “Broadleaf Booster” – delivering activity on selected broadleaf weeds. This enhances the performance of all broadleaf herbicides where Varro is tank mixed.
- A Group 2 herbicide that controls Group 1-resistant foxtail and wild oats.
- Allows crop rotation flexibility to sensitive crops, such as dry beans and lentils.
- Registered for both ground and aerial application in wheat.

**Application Guidelines**

**Crop safety**
- Varro provides excellent crop safety on durum, spring and winter wheat.

**Rate**
- Registered application rate: 0.2 L/ac.
- One 8 L jug = 40 ac. (one 2 × 8 L case = 80 ac.)

**Application Timing**
- 1 to 6 leaf stage with a maximum of 3 tillers, but prior to the presence of the first node (jointing).
- Do not apply an ALS herbicide, such as Varro, following the presence of the first node as crop injury may result.
- Cold temperatures: Do not spray 3 days prior to or following cold temperatures (3°C or lower).

**Under drought conditions**
- Do not spray Varro herbicide if time between seeding and spraying exceeds 35 days as drought hastens crop development.
When to Add AMS

// Bayer research has demonstrated that the addition of AMS to Varro herbicide can increase wild oat control by 5 to 10% depending upon environmental conditions and weed pressure.°
// Bayer recommends the addition of AMS on spring wheat. Do not add AMS on durum wheat as it is more sensitive to crop injury (NIS can be added on durum). Always add AMS when Varro is tank mixed with Prestige™ or Curtail® M.
// One 10 L jug of AMS treats 20 ac.

°Source: 11 Bayer internal research trials (6 trials in 2010 and 5 trials in 2011).
Your results may vary based on agronomic, environmental and pest pressure variables.

Water Volumes

Ground
// Minimum of 5 gal./ac. (47 L/ha)

Aerial
// Minimum of 3 gal./ac. (28 L/ha)

Rainfastness
// Rainfast 1 hour after application

Residue and Grazing
// Do not graze the treated crop or cut for forage hay within 7 days or cut for hay within 30 days of application

Re-Cropping Intervals
// Alfalfa, barley, canary seed, canola, chickpeas, corn (field), dry beans, flax, lentils, mustard, oats (spring), peas (field), soybeans, sunflowers, timothy and wheat (durum, spring and winter) can be planted 10 months following an application of Varro

Tank Mixes
For a complete list of tank-mix partners and mixing order, please refer to page 142.
Features and Benefits

- All-in-one, pre-mixed herbicide has your grass and broadleaf active ingredients combined in one jug
- Powerful resistance management tool with three chemistries (Groups 2, 6 and 27) that combat both Group 1-resistant wild oats and Group 2-resistant broadleaf weeds
- Excellent crop safety
- Registered for both ground and aerial application in wheat

Application Guidelines

**Rate**

- Registered application rate: 0.405 L/ac.
- One 8.1 L jug treats 20 ac. (one 2 × 8.1 L case treats 40 ac.)
- One 129.6 L shuttle treats 320 ac. – mixing required. Attach the supplied drill adaptor and mix for 1 minute prior to extracting the product from the shuttle.

**Application Timing**

- 1 to 6 leaf stage and maximum 3 tillers, but prior to presence of first node
- Do not apply an ALS herbicide, such as Velocity m3, after the first node is present as crop injury may occur
- Cold temperatures: do not spray 3 days prior to or following cold temperatures (3°C or lower)

**Under drought conditions**

- Do not spray Velocity m3 herbicide if time between seeding and spraying exceeds 35 days as drought hastens crop development

**WEEDS CONTROLLED**

**GRASS WEEDS**

- Canary seed (1 to 6 leaf, up to emergence of the 2nd tiller)
- Green foxtail (1 to 6 leaf, up to emergence of the 3rd tiller)
- Japanese brome
- Persian darnel (1 to 6 leaf stage, up to emergence of the 3rd tiller, suppression only)
- Wild oats (1 to 6 leaf stage, up to emergence of the 3rd tiller)
- Yellow foxtail (1 to 6 leaf stage, up to emergence of the 3rd tiller, suppression only)

**BROADLEAF WEEDS**

- Annual sow thistle (1 to 6 leaf stage)
- Canada fleabane (up to 10 cm in height/diameter)
- Canada thistle (suppression, up to 30 cm in height)
- Chickweed (1 to 6 leaf stage)
- Cleavers (1 to 6 whorl stage)
- Common ragweed (1 to 6 leaf stage)
- Dandelion (up to 10 cm in height/25 cm in diameter, suppression only)
- Flixweed (up to 10 cm in height)
- Giant ragweed (1 to 6 leaf stage, suppression only)
- Hemp-nettle (1 to 6 leaf stage)
- Kochia (up to 10 cm in height)
- Lamb’s-quarters (1 to 6 leaf stage)
- Narrow-leaved hawk’s beard (up to 10 cm in height)
- Perennial sow thistle (1 to 6 leaf stage, suppression only)
- Redroot pigweed (1 to 6 leaf stage)
- Round-leaved mallow (1 to 6 leaf stage)
- Russian thistle (suppression only)
- Shepherd’s-purse (1 to 6 leaf stage)

**Spreading atriplex**

- 1 to 6 leaf stage, suppression only

**Stinkweed**

- 1 to 6 leaf stage

**Stork’s-bill**

- (with the addition of 2,4-D Ester, 1 to 6 leaf stage)

**Volunteer canola**

- (including herbicide-tolerant varieties, 1 to 6 leaf stage)

**Wild buckwheat**

- 1 to 6 leaf stage

**Wild mustard**

- 1 to 6 leaf stage

**CROPS FOR USE**

- Wheat (durum, spring, winter)

**ACTIVE INGREDIENTS**

Bromoxynil - Group 6

Pyrasulfotole - Group 27

Thiencarbazone-methyl - Group 2

**FORMULATION**

Liquid OD formulation

**PACKAGING**

8.1 L jug = 20 ac.

(one 2 × 8.1 L case treats 40 ac.)

129.6 L bulk shuttle = 320 ac.
Water Volumes

**Ground**
- Minimum of 5 gal./ac. (47 L/ha)

**Aerial**
- Minimum of 3 gal./ac. (28 L/ha)

Rainfastness
- Rainfast 1 hour after application

Residue and Grazing
- Do not harvest durum and spring wheat for grain or straw within 60 days of application, or winter wheat within 72 days of application
- Do not graze or cut for forage within 25 days of application or cut for hay within 30 days of application

Re-Cropping Intervals
- Alfalfa, barley, canary seed, canola, corn (field), flax, oats, peas (field), sunflowers and wheat can be planted 10 months following an application of Velocity m³
- Lentils can be planted 22 months following an application of Velocity m³

Application Tips
- Fill the spray tank ¼ to ½ full with clean water and begin agitation or bypass
- If adding AMS, always add AMS to the tank first (one 10 L jug of AMS will treat 20 ac.)
- Next, add Velocity m³, followed by the tank-mix partner
- If adding MCPA or 2,4-D, always include AMS

If you are faced with winter annuals or perennials, Bayer recommends the following options to improve the activity of Velocity m³:

**Canada thistle, dandelion or perennial sow thistle**
- Add 4 oz./ac. of MCPA Ester (189 mL/ac. of MCPA Ester 600). The crop needs to be at the 3 leaf stage when adding MCPA or using products containing MCPA.

**Stork’s-bill**
- Add 4 oz./ac. of 2,4-D Ester (189 mL/ac. of 2,4-D Ester 600). The crop needs to be at the 4 leaf stage when adding 2,4-D or using products containing 2,4-D.

**Cleavers in the 4 to 6 whorl stage**
- Add one 10 L jug of Bayer (40% solution) AMS for every 8.1 L jug of Velocity m³ for cleavers in the 4 to 6 whorl stage, or to improve activity on Canada thistle, dandelion and larger kochia

Tank Mixes
- For a complete list of tank-mix partners and mixing order, please refer to page 143.
Features and Benefits

// Delaro combines two highly dynamic and complementary active ingredients – prothioconazole (Group 3) and trifloxystrobin (Group 11) – for a dual mode of action to provide quick and long-lasting protection

// Use Delaro at flag leaf timing in cereals for long-lasting, broad-spectrum foliar disease protection, followed by Prosaro XTR fungicide at head timing for increased long-term disease protection

Application Guidelines

Rate

// Barley, Oats, Triticale, Wheat (durum, spring): 230 mL/ac. (572 mL/ha)
// Wheat (winter): 177 to 230 mL/ac. (440 to 572 mL/ha)

Application Tips

// Good spray coverage and canopy penetration are important for best results
// Use a medium to coarse droplet size (250 to 350 microns)

Application Timing

// Apply preventively or at the very early stages of disease development, from 4 leaf to flag leaf but prior to head emergence

Water Volumes

Ground

// Minimum of 10 gal./ac. (94 L/ha)

Aerial

// Minimum of 5 gal./ac. (47 L/ha)

Rainfastness

// Rainfast 1 hour after application

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One application: Barley, Oats, Triticale, Wheat (durum, spring, winter)</td>
<td>Do not apply within 30 days of cutting for forage. Do not allow livestock to graze within 30 days of application. Do not apply within 45 days of harvest for grain, straw and hay.</td>
</tr>
<tr>
<td>Two applications: Winter wheat</td>
<td>If two applications are applied to winter wheat, do not harvest the treated crop for forage or hay and do not let livestock graze within the treated area. Do not apply within 45 days of harvest for grain.</td>
</tr>
</tbody>
</table>
Features and Benefits

// Flexible timing options. Folicur EW fungicide allows growers to spray a fungicide when they need it most – from flag leaf timing for leaf disease control to head timing for suppression of fusarium head blight (FHB) and control of glume blotch and leaf diseases.
// Comprehensive leaf disease protection, including outstanding rust control
// Fewer fusarium damaged kernels (FDKs) resulting in less dockage and a higher grade
// Protective and curative activity with rapid absorption and translocation within the plant
// Can be used at flag leaf timing followed by Prosaro XTR fungicide at head timing for increased long-term disease protection

Application Guidelines

Rate
// 200 mL/ac. rate (FHB and leaf diseases) = 40 ac./jug
// 150 mL/ac. rate (leaf disease only) = 53 ac./jug
// Does not require a surfactant

DISEASES CONTROLLED

BARLEY
Net blotch
Powdery mildew
Rusts (leaf, stem and stripe)
Scald
Septoria leaf blotch
Spot blotch

WHEAT
Fusarium head blight (suppression)
Powdery mildew
Rusts (leaf, stem and stripe)
Septoria glume blotch
Septoria leaf blotch
Tan spot

For full details, please reference product label.

Application Timing

Leaf disease
// For optimum control of leaf and stem diseases, apply from the late vegetative stage (flag leaf fully emerged) to the end of the flowering stage
// Best applied at the very early stages of disease development

Head disease
// For best results, treat the crop prior to infection. High humidity, heavy dew and rain during the days preceding head emergence and during flowering put cereal crops at a high risk of infection for FHB and septoria glume blotch.
// For optimum suppression of FHB in wheat and for the control of glume blotch, apply Folicur EW within the time period when at least 75% of the wheat heads on the main stem are fully emerged to when 50% of the heads on the main stem are in flower

Water Volumes

Ground
// Minimum of 10 gal./ac. (94 L/ha)

Aerial
// Minimum of 5 gal./ac. (47 L/ha)

Rainfastness
// Rainfast 1 hour after application

Pre-Harvest Interval
// Folicur EW may not be applied within 36 days of harvest
Features and Benefits

// The enhancement of mefenpyr-diethyl helps plants to more efficiently mitigate stress. This allows them to expend their energy on producing yield and use less resources to defend themselves.

// The power of two fungicide actives, prothioconazole and tebuconazole, provide protection against a broad spectrum of diseases

// Effective fusarium head blight (FHB) protection resulting in a reduction of deoxynivalenol (DON) and fusarium damaged kernels (FDK) for better grain quality and a higher grade

When applied at early flowering in wheat and just after head emergence in barley, Prosaro XTR protects against FHB infection through the grain-fill period.

An application of Prosaro XTR at head timing also provides substantial flag leaf disease protection, which helps contribute to higher yield potential.

3-year wheat fungicide moisture summary

**BELOW NORMAL MOISTURE**

<85% AVERAGE MOISTURE

+3.6 bu./ac. versus untreated

- **Prosaro® XTR**
- 69.3

- **Caramba® fungicide**
- 68.9

- **Untreated**
- 65.7


Your results may vary according to agronomic, environmental and pest pressure variables.

Note: Average moisture is determined by Agriculture and Agri-Food Canada’s Drought Watch Data.

**NORMAL TO ABOVE NORMAL MOISTURE**

>85% AVERAGE MOISTURE

+8 bu./ac. versus untreated

- **Prosaro XTR**
- 82.2

- **Caramba® fungicide**
- 79.5

- **Untreated**
- 74.2

Source: 19 Bayer grower-cooperated replicated wheat trials (2017–2019). Prosaro XTR yield exceeded Caramba® fungicide 84% of the time (16/19 trials).

Your results may vary according to agronomic, environmental and pest pressure variables.

Note: Average moisture is determined by Agriculture and Agri-Food Canada’s Drought Watch Data.
Application Guidelines

Rate
// Registered application rate: 0.325 L/ac. (20 ac./jug)

Application Tips
// For FHB suppression, good coverage of the head is essential. The best results are achieved when nozzles are configured to cover a vertical target. The best nozzle configurations are those that apply both forward and backward relative to the sprayer’s direction of travel. Use medium to coarse droplet size.

Application Timing

Barley
// To manage both head and leaf diseases, preventively apply when 70 to 100% of the barley main stem heads are fully emerged to 3 days after full head emergence
// Refer to the timing guide on page 118 for details

Wheat
// To manage both head and leaf diseases, preventively apply when at least 75% of the wheat heads on the main stem are fully emerged to when 50% of the heads on the main stem are in flower
// Refer to the timing guide on page 119 for details

Water Volumes

Ground
// Minimum 10 gal./ac. (94 L/ha)

Aerial
// Minimum of 5 gal./ac. (47 L/ha)

Rainfastness
// Rainfast 1 hour after application

Tank Mixes
// Tank mixable with Lorsban® for wheat midge control
// Tank-mix order is Prosaro XTR, then Lorsban®

Pre-Harvest Interval
// Prosaro XTR may not be applied within 36 days of harvest

Wheat – Prosaro Head Timing Trials
Optimal fusarium head blight timing is narrow. If you apply a fungicide before or after optimal head timing, test results showed that the yield component remained very positive.

Numbers are expressed as gain in yield versus the untreated check.
Your results may vary according to agronomic, environmental and disease pressure variables.
Features and Benefits
// Stratego PRO combines two highly dynamic and complementary active ingredients – prothioconazole (Group 3) and trifloxystrobin (Group 11) – to provide quick and long-lasting protection
// Stratego PRO delivers comprehensive leaf disease protection, while maximizing the yield potential of your winter wheat. It delivered an average +11% additional yield over the untreated check*. // Use Stratego PRO at herbicide timing for long-lasting, broad-spectrum foliar disease protection, followed by Prosaro XTR fungicide at head timing for increased long-term disease protection

*Source: 17 Bayer internal trials (2012 and 2013). Your results may vary depending on agronomic, environmental and disease pressure variables.

Application Guidelines
Rate
// Barley, oats, triticale, wheat (durum, spring): 230 mL/ac. (572 mL/ha)
// Wheat (winter): 177 to 230 mL/ac. (440 to 572 mL/ha)

Application Tips
// Tank mix with Buctril M, Infinity or Infinity FX herbicides for complete early-season pest management
// When tank mixing with Buctril M, Infinity or Infinity FX, do not apply within 24 hours of night temperatures below 5°C as crop injury (leaf tip burn) may occur
// Follow up with an application of Prosaro XTR at head timing for complete disease management

Application Timing
// Optimal timing is T1 (Z21 to Z37). This application can be made in conjunction with herbicide timing for early-season pest control.

Water Volumes
Ground
// Minimum of 10 gal./ac. (94 L/ha), recommend 20 gal./ac. (187 L/ha)
Aerial
// Minimum of 5 gal./ac. (47 L/ha)

Rainfastness
// Rainfast 1 hour after application

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One application: Barley, Oats, Triticale, Wheat (durum, spring, winter)</td>
<td>Do not apply within 30 days of cutting for forage. Do not allow livestock to graze within 30 days of application. Do not apply within 45 days of harvest for grain, straw and hay.</td>
</tr>
<tr>
<td>Two applications: Winter wheat</td>
<td>If two applications are applied to winter wheat, do not harvest the treated crop for forage or hay and do not let livestock graze within the treated area. Do not apply within 45 days of harvest for grain.</td>
</tr>
</tbody>
</table>
### Features and Benefits
- TilMOR is the flex timing specialist, enabling growers to spray a fungicide when they need it most.
- The combination of prothioconazole and tebuconazole provides both protective and curative activity.
- Wide window of application, from flag leaf up to head emergence and flowering.
- Comprehensive leaf disease protection, including outstanding rust control.
- In conditions where TilMOR is applied for leaf diseases, a follow up application of Prosaro XTR can be applied at head timing for FHB protection and complete foliar disease management, providing the greatest increase in yield.

### Application Guidelines

**Rate**
- 253 mL/ac. rate (625 mL/ha) for FHB and leaf diseases
- = 40 ac./jug
- Does not require a surfactant

**Application Timing**

**Leaf disease**
- For optimum control of leaf and stem diseases, apply from the late vegetative stage (flag leaf fully emerged to awn emergence) to the end of the flowering stage.
- Best applied preventatively at the very early stages of disease development.

**Head disease**
- For best results treat the crop prior to infection. High humidity, heavy dew and rain during the days preceding head emergence and during flowering put cereal crops at a high risk of infection for FHB and septoria glume blotch.
- For optimum suppression of FHB in wheat and for the control of glume blotch, apply TilMOR when at least 75% of the wheat heads on the main stem are fully emerged to when 50% of the heads on the main stem are in flower.

### Water Volumes

**Ground**
- Minimum of 10 gal./ac. (100 L/ha)

**Aerial**
- Minimum of 5 gal./ac. (47 L/ha)

**Rainfastness**
- Rainfast 1 hour after application

**Pre-Harvest Interval**
- TilMOR may not be applied within 36 days of harvest.
Features and Benefits

// Decis is registered for application either by ground or air; and is not prone to gassing off, washing off or leaching
// Flexible application rates to address insect stages and temperature variations within insect populations
// Readily tank mixable with many leading herbicides
// When spraying under high temperature (+25°C), it is recommended that the highest registered application rate be used

Application Tips

// Scout your fields often to ensure proper application and timing
// Scouting should occur in the early morning or in the evening when the insects are actively feeding
// Use sufficient water to ensure thorough coverage; more water may be required when dense foliage is present
// Decis is a contact insecticide, so for best results spray when insects are feeding
// Avoid application when bees are foraging
// For best results use the maximum recommended rate of application, as efficacy at lower rates may be affected by temperature

Application Guidelines

RECOMMENDED RATES

<table>
<thead>
<tr>
<th>CROP</th>
<th>INSECT</th>
<th>50 EC RECOMMENDED RATE</th>
<th>100 EC RECOMMENDED RATE</th>
<th>ACRES PER JUG 50 EC</th>
<th>ACRES PER JUG 100 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley, Oats, Wheat</td>
<td>Cutworm</td>
<td>80 mL/ac.</td>
<td>40 mL/ac.</td>
<td>12 ac./1 L jug</td>
<td>30 ac./2.4 L jug</td>
</tr>
<tr>
<td>Barley, Oats, Wheat</td>
<td>Grasshopper</td>
<td>60 mL/ac.</td>
<td>30 mL/ac.</td>
<td>16 ac./1 L jug</td>
<td>40 ac./2.4 L jug</td>
</tr>
</tbody>
</table>

Application Timing

Cutworm

// Ground or aerial – apply once per season when larvae are present and feeding
// Do not disturb the soil after application

// Under severe insect pressure, application should also be made to a 15 m strip along the fencerows around the field
// Do not apply to adjacent crops
// Best results will be achieved if product is applied in the late evening, night or early morning
// Rate – 80 mL/ac. recommended for optimal control

Grasshopper

// Ground – apply when grasshoppers are in the 2 to 4 nymphal stage
// Best control will be achieved when application is made prior to wing development
// Under severe insect pressure, application should also be made to a 15 m strip along the fencerows around the field
// Aerial – use as directed
// Rate – 60 mL/ac. recommended for optimal control

Water Volumes

Ground

// Minimum of 10 gal/ac. (94 L/ha)

Aerial

// Minimum of 1 gal/ac. (9.4 L/ha)

Rainfastness

// Rainfast 1 hour after application

Re-Cropping Intervals

// No re-cropping restrictions

Pre-Harvest Intervals

// Re-entry is 12 hours.
// Decis may not be applied within the following timelines:

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>40</td>
</tr>
<tr>
<td>Wheat</td>
<td>31</td>
</tr>
</tbody>
</table>

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 135.
Application Guidelines

**Rate**
- 0.5 L/ac. (1.25 L/ha)

**Application Timing**
- Proper timing of an Ethrel application is essential. Early or late applications will result in adverse effects to the crop. Determining the growth stage of the crop is best accomplished by sampling several plants from around the field.
- Apply when main stem and most of the tillers are between early flag leaf emergence to swollen-boot stage (Z 37 to Z 45)
- Do not apply if more than 10% of the awns have emerged (Z 49)
- Do not apply within 35 days of harvest

**Application Tips**
- Recommended nozzle type is flat fan
- Thorough and uniform coverage of the upper plant leaves is essential for optimal results
- The spray boom must be a minimum of 50 cm (20 in.) above the crop canopy
- Avoid overlaps while spraying
- Do not apply Ethrel if the crop is under any type of stress
- Do not allow mixed solution to stand overnight
- Do not add surfactants or wetting agents to the spray solution
- Adjust Ethrel application rates according to environmental and growth stages. Use higher rates on crops that are highly fertilized (>90 lb./ac. [100 kg/ha] of nitrogen), have ample moisture during the growing season (>25 cm [10 in.]) of precipitation or 35 cm [14 in.] of irrigation), or when lodging conditions are expected to be severe.
- Ethrel on spring and winter wheat is not recommended for Western Canada. For more information contact your local sales representative at 1 888-283-6847.

**Water Volumes**
- Minimum of 21 gal./ac. (200 L/ha)

**Rainfastness**
- Rainfast 5 hours after application

**CROPS FOR USE**
- Wheat (spring)
- ON, QC, NB, NS, Nfld, PEI
- Wheat (winter)

**ACTIVE INGREDIENT**
- Ethephon - Growth regulator

**FORMULATION**
- Liquid flowable

**PACKAGING**
- 10 L jug
  - = 6.7 to 10 ha in spring wheat
  - = 4.0 to 8.0 ha in winter wheat
  (Eastern Canada only)

**RESOURCES**
- SOYBEANS
- PULSES
- CORN
- CEREALS
- CANOLA
- ROUNDUP
# Corn

## Crop Staging Guide

<table>
<thead>
<tr>
<th>Traits</th>
<th>Seed Treatment</th>
<th>Herbicides</th>
<th>Fungicides</th>
<th>Insecticide</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartStax RIB Complete</td>
<td>Acceleron Seed</td>
<td>Converge XT</td>
<td>Proline</td>
<td>Decis</td>
</tr>
<tr>
<td>Trecepta RIB Complete</td>
<td>Applied Solutions</td>
<td>Roundup Xtend with VaporGrip Technology</td>
<td>Stratego PRO</td>
<td></td>
</tr>
<tr>
<td>VT Double PRO RIB Complete</td>
<td></td>
<td>XtendiMax with VaporGrip Technology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CORN CROP STAGING GUIDE

14 Days Prior to Emergence

Emergence 1 Leaf 3 Leaf 5 Leaf 7 Leaf 9 Leaf Early Tassel Flowering / Silking Dry

GROWTH STAGE

Section: Application Timing

Application should be based on the presence of vulnerable pest developmental stages and significant populations.

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.

Decis
ABOVE-GROUND AND BELOW GROUND INSECT PROTECTION, PLUS THE CONVENIENCE YOU WANT.

SmartStax RIB Complete corn is one of the most advanced insect and weed control systems available. SmartStax technology provides the broadest spectrum of above-ground and below ground insect protection, including two proven and highly effective modes of action against corn rootworm. This broad spectrum insect protection and weed control blend also offers farmers high yield potential.

Features and Benefits

- Multiple modes of action helps protect plants above and below the ground
- Multiple modes of action against corn earworm¹, corn rootworm and European corn borer
- Protects roots to enable the best uptake of nutrients and water
- Protects shoots to enhance photosynthesis and grain corn production
- Tolerant to glufosinate

¹Cry1A.105 and Cry2Ab2 from B.t. controls or suppresses corn earworm. Your results may vary depending on agronomic, environmental and pest pressure variables.

<table>
<thead>
<tr>
<th>PRIMARY PESTS</th>
<th>Optimum® AcreMax® Xtreme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABOVE-GROUND</strong></td>
<td></td>
</tr>
<tr>
<td>Black Cutworm (Agrotis ipsilon)</td>
<td>*</td>
</tr>
<tr>
<td>Corn Earworm¹ (Helicoverpa zea)</td>
<td>**</td>
</tr>
<tr>
<td>European Corn Borer (Ostrinia nubilalis)</td>
<td>***</td>
</tr>
<tr>
<td>Fall Armyworm (Spodoptera frugiperda)</td>
<td>***</td>
</tr>
<tr>
<td><strong>BELOW-GROUND</strong></td>
<td></td>
</tr>
<tr>
<td>Northern Corn Rootworm (Diabrotica barberi)</td>
<td>**</td>
</tr>
<tr>
<td>Western Corn Rootworm (Diabrotica virgifera)</td>
<td>***</td>
</tr>
<tr>
<td>HERBICIDE TOLERANCE</td>
<td></td>
</tr>
<tr>
<td>Roundup Ready 2 Technology + LibertyLink®</td>
<td>Roundup Ready 2 Corn + LibertyLink®</td>
</tr>
</tbody>
</table>

REFUGE 5% IN THE BAG

*RIB COMPLETE 5% IN THE BAG

Roundup Ready 2 Technology for broad-spectrum weed control

- This product provides in-seed tolerance to Roundup agricultural herbicides

Automatic refuge compliance – blend of 95% insect protected and 5% refuge seed in every bag

- With a 95/5% blend of insect-protected seed and refuge seed, you can plant the most traited acres across your entire farm

Exceptional Above-Ground and Below Ground Protection

Unique modes of action give corn plants the protection they need against major pests that can inflict serious crop damage.
Trecepta technology combines the power of three different modes of action for broad-spectrum control of above-ground feeding pests, including Western bean cutworm. This technology helps to put more grain in the bin and more money in the bank.

When Western bean cutworms were present, tested corn hybrids containing the Trecepta trait had higher yields and quality than the tested corn hybrids not containing the Trecepta trait.

Source: 11 Market Development Trials (2017 and 2018). Your results may vary based on agronomic, environmental and pest pressure variables.

Features and Benefits

Three unique modes of action for maximum protection from damage caused by above-ground feeding pests, including black cutworm, corn borer, corn earworm, fall armyworm and Western bean cutworm.

Built on the proven performance of VT Double PRO technology.

Promotes healthy stalks and cleaner ears to help improve grain quality.

Roundup Ready 2 Technology for broad-spectrum weed control.

This product provides in-seed tolerance to Roundup agricultural herbicides.

Automatic refuge compliance – blend of 95% insect protected and 5% refuge seed in every bag.

With a 95/5% blend of insect-protected seed and refuge seed, you can plant the most traited acres across your entire farm.

Trecepta RIB Complete promotes healthy stalks and cleaner ears that can help improve grain quality and yield performance.

<table>
<thead>
<tr>
<th>Traits</th>
<th>VT Double PRO</th>
<th>Agrisure Viptera® Trait</th>
<th>Trecepta RIB Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Cutworm</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Corn Earworm</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>European Corn Borer</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Fall Armyworm</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Western Bean Cutworm</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

鹞1 Cry1A.105 and Cry2Ab2 from B.t. controls or suppresses corn earworm.
VT Double PRO RIB Complete provides dual modes of action for above-ground insects with the convenience and simplicity of refuge in the bag. Plus, the reduced refuge of just 5% of planted acres allows for higher whole-farm yield potential.

Features and Benefits

- Advanced above-ground protection with dual modes of action to control corn earworm,* European corn borer and fall armyworm

* Cry1A.105 and Cry2Ab2 from B.t. controls or suppresses corn earworm.

Roundup Ready 2 Technology for broad-spectrum weed control

- This product provides in-seed tolerance to Roundup agricultural herbicides

Automatic refuge compliance – blend of 95% insect protected and 5% refuge seed in every bag

- With 95/5% blend of insect-protected seed and refuge seed, you can plant the most traited acres across your entire farm

### Powerful Protection from Problem Pests

- **European Corn Borer**
- **Corn Earworm**
- **Fall Armyworm**

### Compare Your Above-Ground Protection Options

<table>
<thead>
<tr>
<th>PRIMARY PESTS</th>
<th>Optimum® AcreMax®</th>
<th>VT Double PRO RIB Complete Corn Blend¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Cutworm (Agrotis ipsilon)</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Corn Earworm¹ (Helicoverpa zea)</td>
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<tr>
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<td>**</td>
</tr>
<tr>
<td>Fall Armyworm (Spodoptera frugiperda)</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>HERBICIDE TECHNOLOGY</td>
<td>Roundup Ready Corn 2 / LibertyLink®</td>
<td>Roundup Ready 2 Technology</td>
</tr>
<tr>
<td>REFUGE</td>
<td>5% Refuge-in-a-Bag</td>
<td>5% Refuge-in-a-Bag</td>
</tr>
</tbody>
</table>

**Refuge Examples**

1. VT Double PRO RIB Complete is a corn seed blend of 95% B.t. seed and 5% non-B.t. seed.
2. Optimum® AcreMax® is a RIB blend product.
3. Cry1A.105 and Cry2Ab2 from B.t. controls or suppresses corn earworm.
4. Pioneer claims suppression of corn earworm on the Optimum® AcreMax® label.

Modes of action equal control of pest.

- ** Dual-mode activity
- * Single-mode activity
Features and Benefits

// Dependable and consistent control of major seed rots and seedling blights
// BioRise™ Corn Offering is included seamlessly on select offerings in STANDARD packages. BioRise Corn Offering enhances mycorrhizal colonization, which increases functional root volume and supports increased water and nutrient uptake through the roots.

Application Tips

// Commercially applied by a seed supplier for convenience, and to ensure uniform and consistent coverage on every seed

| BASIC | STANDARD
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Insecticide</td>
<td>–</td>
</tr>
<tr>
<td>Fungicides/ Fungicides with Enhanced Disease Control</td>
<td>Acceleron D-281 fluoxastrobin</td>
</tr>
<tr>
<td></td>
<td>Acceleron D-342 prothioconazole</td>
</tr>
<tr>
<td></td>
<td>Acceleron® DX-309 metalaxyl</td>
</tr>
<tr>
<td>Bio-Enhancer</td>
<td>–</td>
</tr>
<tr>
<td>Province</td>
<td>ON, QC NB, NS, PEI</td>
</tr>
</tbody>
</table>
Features and Benefits

// Long-lasting residual activity
// Allows for aggressive weed control and a wide window of application while maintaining crop safety
// Re-activated by rain to control those weeds waiting for moisture to germinate

Application Guidelines

**Set-up rate (30 ac. per case)**
// 89 mL/ac. (220 mL/ha)
// Apply pre-plant (up to 14 days prior to planting), pre-emerge or up to the 3 leaf stage, followed by an in-crop application of Roundup for the most consistent two-pass weed control system available

**Standard rate (20 ac. per case)**
// 134 mL/ac. (330 mL/ha)
// Apply pre-plant (up to 14 days prior to planting), pre-emerge or up to the 3 leaf stage for season-long weed control

**High rate (15 ac. per case)**
// 178 mL/ac. (440 mL/ha)
// Apply pre-plant (up to 14 days prior to planting), pre-emerge or up to the 3 leaf stage for season-long weed control. Also includes glyphosate-resistant Canada fleabane, proso millet control and glyphosate-resistant giant ragweed control.

Mix It Up. Weed out herbicide resistance. Converge XT is a tank-mix product with two modes of action working on a variety of weed species. Visit MixItUp.ca to learn more.
Application Tips

- Recommended nozzle type is flat fan nozzles or comparable nozzles that achieve a uniform spray pattern – hollow cone nozzles should not be used.
- Converge XT tank mixed with Roundup can be applied up to the 3 leaf stage of corn only at the low rate (30 ac./case). If tank mixing Converge XT with Roundup at the high or mid-rate, it must be applied as a pre-emerge application.
- Do not incorporate or work the ground after application.
- Should not be applied on soil with less than 2% organic matter.
- For pre-plant surfaces (up to 14 days prior to planting) and pre-emergence applications, a nitrogen solution (28-0-0) may replace all or part of the water as a carrier.

Application Timing

- Pre-plant, pre-emerge or early post. Do not incorporate or work the ground after application.

Water Volumes

- 16 gal./ac. (150 L/ha)

Rainfastness

- Rainfast 2 hours after application

Re-Cropping Intervals

<table>
<thead>
<tr>
<th>TIME AFTER APPLICATION</th>
<th>CROPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 months</td>
<td>Winter wheat</td>
</tr>
<tr>
<td>1 year</td>
<td>Alfalfa, barley, canola, field corn, field peas, oats, potato, soybean, spring wheat, timothy, tomato*</td>
</tr>
<tr>
<td>2 years</td>
<td>Dry common beans (all types)</td>
</tr>
</tbody>
</table>

* Caution should be used when planting tomato the year following an application of Converge XT if the conditions were exceptionally dry during the season of application.

Tank Mixes

- Tank mix with Roundup products for better dandelion control than Roundup alone (refer to label for rates and timing)

WHAT TO EXPECT WHEN USED WITHOUT ATRAZINE

- The weed control performance of Converge XT (including atrazine) and Converge Flexx (no atrazine) are different and because of this, Bayer recommends always using Converge XT as opposed to Converge Flexx.
- Converge Flexx can be used in pre-emerge and early post-emerge applications without atrazine, however, Bayer recommends that Converge XT be used for the best weed control performance.
- When Converge Flexx is used instead of Converge XT, weed control will not exist for Canada fleabane, fall panicum, giant ragweed, lady’s-thumb, proso millet, wild buckwheat and yellow foxtail.
- In addition, overall weed control performance will weaken. This will be most apparent on Panicum spp. weeds (e.g., barnyard grass, crabgrass, foxtails, millets and witchgrass) and Polygonum spp. weeds (e.g., wild buckwheat).
Features and Benefits

// Powerful in-crop control of grass weeds
// Conveniently formulated to allow for higher rates, for improved weed control without compromising crop safety

Application Guidelines

Rate
// Registered application rate: 0.63 L/ac. (1.56 L/ha)

Application Timing
// 1 to 8 leaf stage

Application Tips

// Apply with 28% urea ammonium nitrate (UAN)
// Recommended nozzle type is flat fan (no flood jet nozzles)
// Use 50 micron mesh filter screens or larger
// Apply at a pressure of 175 to 275 kPa (30 to 40 psi)
// For maximum corn yield, plan to apply Option Liquid early during the critical weed-free period at the 3 to 5 leaf stage
// Apply with a tank-mix product for broad-spectrum weed control
// When tank mixed with a broadleaf weed-control product, base the application timing on the broadleaf component of the tank mix

Water Volumes
// Minimum of 15 gal/ac. (140 L/ha)

Rainfastness
// Rainfast 2 hours after application

Tank Mixes
// Atrazine
// See label for additional tank-mix options

For full details, please reference product label.
Features and Benefits

- Reduces early weed competition through short-term residual control of small seeded broadleaf weeds
- Helps manage weed resistance by controlling glyphosate-resistant weeds
- Adds another effective mode of action in the Roundup Ready Cropping Systems
- Reduced volatility through VaporGrip Technology

Application Requirements

- Use nozzles and operating pressures that produce extremely coarse to ultra coarse droplets to minimize drift
- Target weeds less than 10 cm tall
- Maintain boom height 50 cm above crop canopy or target weeds to reduce the risk of drift
- Optimal wind speeds for application typically occur between 5 and 15 km/h
- Maintain the required label buffer to protect sensitive areas
- Ensure ground speed is less than 25 km/h
- Use a triple rinse sprayer clean-out procedure
- Do not use ammonium sulfate and ammonium-based additives in application
- Use a minimum carrier water volume of 10 gal./ac. (100 L/ha) or 15 gal./ac. (150 L/ha) if including a drift reduction additive

Application Guidelines and Timing

Equivalent dose of Roundup WeatherMAX and XtendiMax when using Roundup Xtend with VaporGrip Technology

- At 2 L/ac. = 0.9 L/ac. Roundup WeatherMAX + 0.7 L/ac. XtendiMax
- At 1.5 L/ac. = 0.67 L/ac. Roundup WeatherMAX + 0.5 L/ac. XtendiMax

Pre-plant/pre-emergence

- 1, 1.5 or 2 L/ac. (2.5, 3.75 or 5 L/ha)

Note: 2 L/ac. is preferred for maximum residual opportunity and the most consistent weed control. Up to two post applications per season. Second post application should only be used to control glyphosate-resistant weeds.

Ensure corn seeds are placed at least 4 cm below the soil surface. If seeded less than 4 cm below the soil surface, delay application until the spike stage.

Do not incorporate.

Post-emergence (up to 5 leaf corn)

- 1, 1.5 or 2 L/ac. (2.5, 3.75 or 5 L/ha)

Note: The 2 L/ac. rate can be used only once in a season and should be applied pre-plant, pre-emergence or in-crop early post-emergence (up to the V2 growth stage). 4 L/ac. is the maximum total to be applied in a single season.

Do not apply to corn over 50 cm in height.

Refer to herbicide sensitivity ratings in seed guides to ensure crop safety with dicamba.

Application Window

Grazing Restrictions

- Do not permit lactating dairy animals to graze fields within 7 days after application
- Do not harvest forage or cut for hay within 30 days after application
- Withdraw meat animals from treated fields at least 3 days before slaughter
Features and Benefits

// An easy tank-mix partner with Roundup brand herbicides for both grass and broadleaf residual weed control
// When tank mixed with Roundup, Vios G3 provides three modes of action against weeds

Application Guidelines

Rate
// Registered application rate: 44.5 mL/ac. (110 mL/ha)
// One 1.78 L jug treats 40 ac.

Application Timing
// 1 to 6 leaf stage

Application Tips
// Vios G3 must be tank mixed with either Roundup or glufosinate herbicides on corn hybrids that contain the respective traits
// Vios G3 + Roundup or glufosinate may be applied from 1 to 6 leaf stage in corn. Early application is best.
// Vios G3 + Roundup Xtend at a rate of 1.0 to 1.5 L/ac. may be applied from 1 to 5 leaf on corn for knockdown control of glyphosate-resistant Canada fleabane and giant ragweed
// For enhanced weed control, tank mix with atrazine at a rate of up to 0.5 lbs./ac.
// When tank mixing, first add Vios G3 to one-half of the water, followed by the tank-mix partner(s) and the remaining water volume

Water Volumes
// Roundup: 10 gal./ac. (100 L/ha)

Rainfastness
// Consult the label of the tank-mix partner for specific rainfast intervals

Re-Cropping Intervals

<table>
<thead>
<tr>
<th>TIME AFTER APPLICATION</th>
<th>CROPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 months*</td>
<td>Field corn</td>
</tr>
<tr>
<td>4 months</td>
<td>Winter wheat</td>
</tr>
<tr>
<td>10 months</td>
<td>Alfalfa, canola, dry bean, field corn, field peas, oats, soybean, spring barley, spring wheat</td>
</tr>
<tr>
<td>22 months</td>
<td>Potato, sugar beet, tomato</td>
</tr>
</tbody>
</table>

* In the event that a corn crop treated with Vios G3 is lost due to environmental conditions and reseeding is required, field corn may be reseeded immediately.

Tank Mixes
// Roundup: refer to the Roundup branded herbicide labels
// Glufosinate: refer to the product label

Visit MixItUp.ca to learn more.

Weed out herbicide resistance. Vios G3 uses two different herbicide Groups to help control resistant weeds.
CROPS FOR USE

Corn (field) (do not apply on sweet corn)

ACTIVE INGREDIENT

Dicamba - Group 4
Present as diglycolamine salt

FORMULATION

Liquid concentrate herbicide
Water soluble

PACKAGING

2 × 10 L jugs
450 L tote

WEEDS CONTROLLED

Common
lamb’s-quarters
Corn spurry
Cow cockle
Green smartweed
Lady’s-thumb
Mustard (hare’s ear,
Indian, tumble, wild,
wormseed)
Pigweed (redroot,
Russian, smooth)
Ragweed
(common, false, giant)
Velvetleaf

ANNUAL BROADLEAF
WEEDS
Buckwheat
(tartary, wild)
Canada fleabane
Cleavers

PERENNIAL WEEDS
Canada thistle
Field bindweed
Perennial sow thistle

For full details, please reference product label.

Features and Benefits

- Reduces early weed competition through short term residual control of small seeded broadleaf weeds
- Helps manage weed resistance by controlling glyphosate-resistant weeds
- Reduced volatility through VaporGrip Technology

Application Requirements

- Use nozzles and operating pressures that produce extremely coarse to ultra coarse droplets to minimize drift
- Target weeds less than 10 cm tall
- Maintain boom height 50 cm above crop canopy or target weeds to reduce the risk of drift
- Optimal wind speeds for application typically occur between 5 and 15 km/h
- Maintain the required label buffer to protect sensitive areas; do not spray if sensitive crops are downwind
- Ensure the ground speed is less than 25 km/h
- Use a triple rinse sprayer clean-out procedure
- Do not use ammonium sulfate or ammonium-based additives in application
- Use a minimum carrier water volume of 10 gal./ac. (100 L/ha) or 15 gal./ac. (150 L/ha) if including a drift reduction additive

Application Guidelines and Timing

Pre-emergence

- 0.33 or 0.7 L/acre.

Note: 0.7 L/acre. is preferred for maximum residual opportunity and the most consistent weed control.

Ensure corn seeds are placed at least 4 cm below the soil surface. If seeded less than 4 cm below the soil surface, delay application until the spike stage.

Do not incorporate.

Post-emergence (Spike up to 5 leaf)

- 0.33 or 0.7 L/acre.

Note: Up to two post applications per season. Second post application should only be used to control glyphosate-resistant weeds.

Do not apply to corn over 50 cm in height.

The 0.7 L/acre. rate can be used only once in a season and should be applied pre-emergence or in-crop (up to the 5 leaf growth stage). 1.4 L/acre. is the maximum total to be applied in a single season.

Refer to herbicide sensitivity ratings in seed guides to ensure crop safety to dicamba.

Application Window

Grazing Restrictions

- Do not permit lactating dairy animals to graze fields within 7 days after application
- Do not harvest forage or cut for hay within 30 days after application
- Withdraw meat animals from treated fields at least 3 days before slaughter
**ACTIVE INGREDIENT**
Prothioconazole - Group 3

**FORMULATION**
Suspension concentrate

**PACKAGING**
5.1 L jug = 40 ac.
Deoxynivalenol (DON) reduction in corn: 5.1 L jug = 30 ac.

**DISEASES CONTROLLED**
LOW RATE
Eyespot
Northern blight
Rusts

**DISEASES SUPPRESSED**
DON REDUCTION RATE (30 AC.)
Fusarium ear rot
Gibberella ear rot
Grey leaf spot
Stalk rot pathogens (Colletotrichum spp., Fusarium spp., Gibberella spp.)
For full details, please reference product label.

---

**CROPS FOR USE**
Corn (field, pop, seed and sweet)

**Features and Benefits**
- The only fungicide registered in Canada for corn that provides leaf disease control, stalk rot protection and DON reduction
- Applied at silking, Proline effectively reduced DON in corn by an average of 41% over untreated1

**Application Guidelines**
- Spray screens should be no finer than 50 micron mesh
- Leaf disease control: 127 mL/ac. (315 mL/ha)
- Ear protection (DON reduction), grey leaf spot and stalk rot pathogens: 170 mL/ac. (420 mL/ha)

**Application Timing**
- For fusarium and gibberella ear rot suppression (DON reduction), late season leaf disease control and stalk rot pathogen protection:
  - Apply from the development stage of corn between silking and silk browning
  - Scout at Day 0 (early R1) when the first silks are present outside the husk
- Can be applied by ground or air

**Water Volumes**

<table>
<thead>
<tr>
<th>BC, AB, SK, MB</th>
<th>Minimum of 10 gal./ac. (94 L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial</td>
<td>Minimum of 4.5 gal./ac. (42 L/ha)</td>
</tr>
</tbody>
</table>

**ON, QC, NB, NS, NFLD, PEI**

<table>
<thead>
<tr>
<th>Ground</th>
<th>Minimum of 19 gal./ac. (175 L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial</td>
<td>Minimum of 5 gal./ac. (50 L/ha)</td>
</tr>
</tbody>
</table>

**Pre-Harvest Interval**

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn (field, pop and sweet)</td>
<td>14</td>
</tr>
</tbody>
</table>

For all other crops that are registered but not listed in the table, consult the Proline label for complete details. Crops not listed include barley, buckwheat, oats, pearl millet, proso millet, rye, sugar beets, triticale, wheat (durum, spring and winter); as well as many types of berries, cucurbits, melons and squash.

1 Source: 19 Bayer grower co-operator replicated Corn fungicide trials (2008 to 2017). All trials had > 0.4 ppm DON in the UTC. Your results may vary depending on agronomic, environmental and disease pressure variables.
PROLINE APPLIED AT SILKING IN CORN

Proline reduced DON by an average of 41% versus the untreated check.

All trials had >4 ppm DON in the UTC. Combination of small and large plot.
Your results may vary depending on agronomic, environmental and disease pressure variables.
GROWTH STAGE

- **Early tassel**
  - First signs of tassel are visible

- **VT Day - 2**
  - Begins when last branch of tassel is completely visible

- **Early R1 Day 0**
  - Begins when first silk is visible outside husk
  - Scout for this

- **Full R1 Day +2**
  - Lots of moist silk is visible outside husk

- **R2 Day +10**
  - Silks are darkening and drying out

- **R3**
  - Silks are brown and dry or becoming dry

---

**APPLICATION TIMING**

- **Leaf disease**
- **DON reduction**

---

**Application timing**

- **Good**
- **Optimal**
PROVINCES
ON, QC, NB, NS, NFLD, PEI

ACTIVE INGREDIENTS
- Prothioconazole: Group 3
- Trifloxystrobin: Group 11

FORMULATION
Suspension concentrate

PACKAGING
7.1 L jug or 113.6 L tote
7.1 L jug = 30 ac.
113.6 L tote = 480 ac.

DISEASES CONTROLLED
- Common rust
- Eye spot
- Grey leaf spot
- Northern corn leaf blight
- Southern corn rust

For full details, please reference product label.

CROPS FOR USE
Corn (field, pop, seed, sweet)

Features and Benefits
- Delivers higher yield potential through broad-spectrum long-lasting disease control
- When applied in corn, Stratego PRO provided an average yield increase of 6% over the untreated check*
- Provides exceptional early-season leaf disease control to help maximize yield potential at harvest

Application Guidelines
Rate
- 230 mL/ac. (572 mL/ha)

Application Tips
- For best results, apply before disease is present or at the first sign of disease pressure
- Can be applied by ground or aerial application

Application Timing
- Apply between 7 leaf and early tassel, or at the onset of disease presence

Water Volumes
- Minimum of 5 to 20 gal./ac. (47 to 187 L/ha)

Rainfastness
- Rainfast 1 hour after application

Tank Mixes
- No labelled tank mixes

*Source: 24 Bayer corn trials (2013 to 2015). Your results may vary depending on agronomic, environmental and disease pressure variables.
Features and Benefits

- Decis is registered for application either by ground or air; and is not prone to gassing off, washing off or leaching.
- Flexible application rates to address insect stages and temperature variations within insect populations.
- Readily tank mixable with many leading herbicides.
- When spraying under high temperature (+25°C), it is recommended that the highest registered application rate be used.

Application Tips

- Scout your fields often to ensure proper application and timing.
- Scouting should occur in the early morning or in the evening when the insects are actively feeding.
- Use sufficient water to ensure thorough coverage; more water may be required when dense foliage is present.
- Decis is a contact insecticide, so for best results spray when insects are feeding.
- Avoid application when bees are foraging.
- For best results use the maximum recommended rate of application, as efficacy at lower rates may be affected by temperature.

### Application Guidelines

#### RECOMMENDED RATES

<table>
<thead>
<tr>
<th>CROP</th>
<th>INSECT</th>
<th>50 EC RATE RECOMMENDED</th>
<th>100 EC RATE RECOMMENDED</th>
<th>ACRES PER JUG 50 EC</th>
<th>ACRES PER JUG 100 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>European corn borer</td>
<td>100 mL/ac.</td>
<td>50 mL/ac.</td>
<td>10 ac./1 L jug</td>
<td>24 ac./2.4 L jug</td>
</tr>
<tr>
<td></td>
<td>Western bean cutworm</td>
<td></td>
<td></td>
<td>24 ac./1.2 L jug</td>
<td>96 ac./4.8 L jug</td>
</tr>
<tr>
<td>Corn (sweet)</td>
<td>Corn earworm</td>
<td>100 mL/ac.</td>
<td>50 mL/ac.</td>
<td>10 ac./1 L jug</td>
<td>24 ac./2.4 L jug</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24 ac./1.2 L jug</td>
<td>96 ac./4.8 L jug</td>
</tr>
</tbody>
</table>
Application Timing

Western bean cutworm
// Ground application – apply close to full silking when fresh silks are present
// Begin scouting once moths are active and corn reaches the pre-tassel stage
// Scout for egg masses on the top surface of the upper leaves
// Scout every 5 days during the pre-tassel and tasseling stage for approximately 2 weeks. As soon as a cumulative total of 5% of the plants contain egg masses, the threshold has been reached and an insecticide application is needed.
// Maximum of 3 applications per year in field and seed corn and 2 applications per year in sweet corn
// Can be applied by ground or aerial application in sweet corn
// Rate = 100 mL/ac.
// Pre-harvest interval = 1 day

Corn earworm
// Apply when insects are present in the silks
// Maximum of two applications per year
// Can be applied by ground or aerial application

European corn borer
// Apply when egg masses begin to hatch, but no later than when the first pinhole feeding is seen on the leaves
// Spray directly into the whorl of the plant. Repeat at 5 to 8 day intervals.
// For control of second generation insects, direct spray at ear zone
// Maximum of 3 applications per year in field and seed corn, and 2 application in sweet corn
// Can be applied by ground or aerial application in sweet corn

Water Volumes

Ground
// Minimum of 10 gal./ac. (94 L/ha)

Aerial
// Minimum of 1 gal./ac. (9.4 L/ha)

Rainfastness
// Rainfast 1 hour after application

Re-Cropping Intervals
// No re-cropping restrictions

Pre-Harvest Intervals
// Re-entry is 12 hours. Decis may not be applied within the following timelines:

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn (field and seed)</td>
<td>1</td>
</tr>
<tr>
<td>Corn (sweet)</td>
<td>5</td>
</tr>
</tbody>
</table>

If three applications are used, only the first or second application can be at the high rate (80 mL/ac.).
# Pulses

## Crop Staging Guide (field peas)

## Crop Staging Guide (lentils)

### Seed Treatments
- Trilex EverGol
- Trilex EverGol SHIELD

### Herbicide
- Sencor

### Fungicides
- Delaro
- Proline GOLD
- Proline
- Propulse

### Insecticide
- Decis
FIELD PEAS CROP STAGING GUIDE

GROWTH STAGE

Pre-Planting  1st Node  6th Node  1st Flower  Mature  Maturity (R7)

SEED TREATMENT

APPLICATION TIMING

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.

*Pea vines must be less than 15 cm long at the time of application.
LENTILS CROP STAGING GUIDE

GROWTH STAGE

- Pre-Planting
- Root Emergence
- 1 Leaf Stage (3rd Node)
- 3 Leaf Stage (4th to 5th Node)
- 5 Leaf Stage (7th Node)
- Flowering (R1)
- Maturity (R7)

SEED TREATMENT

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.

APPLICATION TIMING

- **sencor**
  - Apply at the beginning of flowering or at first sign of disease.

- **DELARO**
  - Apply when larvae are present and feeding.

- **DELARO**
  - Timing based on insect pressure. Apply when larvae are present and feeding.

  For chickpeas and lentils, when disease pressure is high or when conditions are conducive to disease development, make a second application 10 to 14 days later.

  10 to 14 days post first pass application of Delaro.

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
**TRILEX EVERGOL**  
**ACTIVE INGREDIENTS**  
- Metalaxyl - Group 4  
- Penflufen - Group 7  
- Trifloxystrobin - Group 11  

**FORMULATION**  
Liquid water-based flowable suspension  

**PACKAGING**  
1.5 L + 0.96 L of Trilex EverGol = 221 bushels  
6.49 L + 4.15 L of Trilex EverGol = 954 bushels

**TRILEX EVERGOL SHIELD**  
**ACTIVE INGREDIENTS**  
- Imidacloprid - Group 4 (Stress Shield)  
- Metalaxyl - Group 4  
- Penflufen - Group 7  
- Trifloxystrobin - Group 11  

**FORMULATION**  
Liquid water-based flowable suspension/suspension  

**PACKAGING**  
1.5 L + 0.96 L of Trilex EverGol + 6.25 L of Stress Shield = 221 bushels  
6.49 L + 4.15 L of Trilex EverGol + 27 L of Stress Shield* = 954 bushels  

*27 L Stress Shield is sold separately.

**DISEASES CONTROLLED**  
- Seed rot and damping-off  
  - Caused by Fusarium spp. and Rhizoctonia solani, including Fusarium graminearum and Pythium spp.  
- Seed rot and seedling blight  
  - Caused by seed-borne Botrytis cinerea  

**DISEASES SUPPRESSED**  
- Seed-borne ascochyta blight  
  - Caused by Ascochyta spp.

**INSECT PROTECTION**  
- Pea leaf weevil  
- Potato leafhopper  
- Wireworm

For full product details please reference label.

**CROPS FOR USE**  
Beans  
Chickpeas  
Field peas  
Lentils

**TRILEX EVERGOL AND TRILEX EVERGOL SHIELD**  
**DISEASES CONTROLLED**  
- Seed rot and damping-off  
- Seed rot and seedling blight

**DISEASES SUPPRESSED**  
- Seed-borne ascochyta blight
Features and Benefits

**TRILEX EVERGOL**
- Protects against the unique diseases and risks associated with early-season seeding
- Trio of active ingredients – metalaxyl, penflufen and trifloxystrobin – protects against ascochyta, botrytis, fusarium, pythium and rhizoctonia
- Unique Group 7 chemistry developed solely for seed treatment use, gives you vigorous rhizoctonia control
- Promotes a high-performing root system that supports optimal access to water and nutrients in a crop’s youth phase, which helps produce a better final crop stand
- Concentrated formulation mixes easily with water, and provides you with the flexibility to adjust the water volume for a customized uniform application
- Strong inoculant compatibility with major manufacturers

**TRILEX EVERGOL SHIELD**
- Offers all of the advantages of Trilex EverGol with the addition of Stress Shield, which provides exceptional insect protection including pea leaf weevils and wireworms
- Trilex EverGol SHIELD is one package that can be used by growers and custom seed treaters for small batches
- Trilex EverGol plus Stress Shield is a tank mix that can be used by growers and custom seed treaters for large batches

**Directions for Use**
- Trilex EverGol is a lineup of concentrated products that when mixed with water, allows the treater to control water volumes for accurate application rates and uniform distribution
- By varying the water volume, the treater can control the drying time on the seed and customize the application to fit their operation. This applies whether treating chickpeas or small red lentils.
- It is recommended that you start with a 7:1 water-to-product ratio for easy application and coverage
- Always ensure proper mixing of the components before application
- Always wear personal protective equipment when handling seed treatments or treated seed
- Always calibrate seeding equipment with the treated seed, as seed flow can be affected
- Refer to the Trilex EverGol and Stress Shield labels and instructions supplied with the treating systems for complete information on proper application techniques
- Contact your SeedGrowth Specialist for tailored advice on optimum performance ratios

**NOTE:** Check with inoculant manufacturers for product compatibility.

**Application Guidelines**

**Package information**

**TRILEX EVERGOL**
- 1.5 L Trilex component A + 0.96 L Trilex component B = 221 bushels
- 6.49 L Trilex component A + 4.15 L Trilex component B = 954 bushels
- For the most effective mix, first rinse your seed treatment containers three times. Next add half the carrier solution, followed by Trilex A, then Trilex B and finally fill with the remaining carrier solution. Agitate or mix, and apply. Mixing should be completed before each application.
TRILEX EVERGOL SHIELD
// 1.5 L Trilex component A + 0.96 L Trilex component B
+ 6.25 L jug Stress Shield = 221 bushels

TRILEX EVERGOL + STRESS SHIELD
// 6.49 L Trilex component A + 4.15 L Trilex component B + 27 L Stress Shield = 954 bushels

Rate
TRILEX EVERGOL
// 25 mL/100 kg of seed for Trilex component A
// 16 mL/100 kg of seed for Trilex component B

TRILEX EVERGOL SHIELD
// 25 mL/100 kg of seed for Trilex component A
// 16 mL/100 kg of seed for Trilex component B
// 104 mL/100 kg of seed for Stress Shield*

* Up to 208 mL/100 kg of seed for Stress Shield may be used for pea leaf weevil protection during early seeding or when populations are expected to be high.

Tank Mixes

STRESS SHIELD
// For increased plant protection, Stress Shield is also registered to protect against pea leaf weevil (field peas and faba beans only), potato leaf hopper (beans only) and wireworms
// Stress Shield curtails the negative effects of plant stresses by providing a supplemental energy pool for internal repair
// A healthier plant has a higher performing root system, improved vigour and growth
// When using Trilex EverGol and Stress Shield, follow these simple steps for optimum success:
1. Trilex amount × Dilution rate
   = Carrier rate (10.64 L × 7 = 74.48 L)
2. Carrier rate - Stress Shield
   = Water rate (74.48 L - 27 L = 47.48 L)
3. Trilex amount + Stress Shield + Water rate
   = Total volume (10.64 L + 27 L + 47.48 L = 85.12 L)
4. Apply the total volume of solution to chickpeas, dry beans, lentils and peas

---

**Diagram Note:**

TRILEX EVERGOL + STRESS SHIELD

TRILEX EVERGOL
6.49 L
4.15 L

Trilex EverGol
85 L RTU
7:1 ratio water to product

STRESS SHIELD
27 L

(7:1 ratio water to product)

TRILEX EVERGOL SHIELD

1.5 L
0.96 L
6.25 L

11 L H₂O
19.7 L RTU
7:1 ratio water to product

---

**Resources:**

Soybeans, Pulses, Corn, Cereals, Canola, Roundup
# Crops for Use

<table>
<thead>
<tr>
<th>Weeds Controlled</th>
<th>Weeds Suppressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickpeas</td>
<td>Chickpeas and lentils</td>
</tr>
<tr>
<td>Field Peas</td>
<td>Ball mustard</td>
</tr>
<tr>
<td>Ball mustard</td>
<td>Ball mustard</td>
</tr>
<tr>
<td>Chickweed (including Group 2-resistant biotypes)</td>
<td>Chickweed (including Group 2-resistant biotypes)</td>
</tr>
<tr>
<td>Corn spurry</td>
<td>Corn spurry</td>
</tr>
<tr>
<td>Green smartweed</td>
<td>Green smartweed</td>
</tr>
<tr>
<td>Hemp-nettle (including Group 2-resistant biotypes)</td>
<td>Hemp-nettle (including Group 2-resistant biotypes)</td>
</tr>
<tr>
<td>Lamb’s-quarters</td>
<td>Lamb’s-quarters</td>
</tr>
<tr>
<td>Stinkweed</td>
<td>Stinkweed</td>
</tr>
<tr>
<td>Tartary buckwheat</td>
<td>Tartary buckwheat</td>
</tr>
<tr>
<td>Volunteer canola (including Clearfield® volunteer canola)</td>
<td>Volunteer canola (including Clearfield® volunteer canola)</td>
</tr>
<tr>
<td>Wild mustard</td>
<td>Wild mustard</td>
</tr>
</tbody>
</table>

For full details, please reference product label.

## Features and Benefits
- Residual activity provides control of weed flushes
- Group 5 herbicide that helps manage Group 2-resistant broadleaf weeds, including chickweed, hemp-nettle, kochia and wild mustard, which are issues in pulse crops that rely predominantly on Group 2 weed control options
- Controls all herbicide-tolerant canola
- A program using both Edge® herbicide and Sencor will help manage Group 2- and Group 9-resistant weeds, such as kochia
- Controls many glyphosate-resistant and Group 2 herbicide-resistant weeds

## Application Guidelines

### Rate
- Rate to use is soil-type dependent, see label for details
- Dry flowable (DF): 57 to 151 g/ac. (140 to 375 g/ha)
- For chickpea, field pea and lentil rate guidelines, refer to the Crops, Rates and Staging section on the next page

Weed out herbicide resistance. Sencor herbicide is an easy tool to control glyphosate and Group 2-resistant weeds. Visit MixItUp.ca to learn more.
Application Tips

// Apply Sencor as a broadcast spray mixed with a minimum of 18 gal./ac. (168 L/ha) of water – lower water volumes will increase the risk of leaf burn
// Sencor should only be mixed with water and not with fertilizer solutions
// If following a Sencor application with a post-grass treatment, such as Centurion® herbicide, allow 4 to 5 days between applications. If grass weeds emerge first, apply Centurion® followed by Sencor in 4 to 5 days.
// Better weed control performance can be attained with a split application of Sencor
// Growers applying Sencor herbicide on soils with low organic matter levels should reduce the rate and apply Sencor in split applications
// Use of Sencor herbicide requires that the soils have greater than 4% organic matter

Crops, Rates and Staging

// Chickpeas and lentils are poor competitors with weeds; by removing weeds early, the crop is more competitive and increased yields will result
// Spray within crop staging guidelines. Applying after the recommended crop stage will increase the risk of leaf burn.

Lentils

// For best results, apply Sencor when lentil vines are less than 6 in. long or are in the 3 to 5 node stage
// Plant the seed at a depth of 2 in. to decrease the risk of product leaching into the root zone; larger seeded lentils are less prone to injury than smaller seeded lentils (e.g., Laird versus Milestone)
// Single application – a 2.5 kg jug will treat 22.5 ac. at a rate of 111 g/ac. mixed with 18 gal./ac. (168 L/ha) of water
// Split application – a 2.5 kg jug will treat 32 ac. at a rate of 77 g/ac. or 44 ac. at a rate of 57 g/ac.; each application is mixed with 18 gal./ac. (168 L/ha) of water
Note: Apply the first application between the cotyledon and the 2 leaf weed stage and the second application when the second flush appears. Allow 7 to 10 days between first and second application. Apply first application at a rate of 77 g/ac. and the second at a rate of 57 to 77 g/ac.

Chickpeas (Desi and Kabuli types only)

// For best results, apply Sencor when chickpea vines are less than 2.5 in. high or are in the 1 to 3 node stage
// Single application – a 2.5 kg jug will treat 22.5 ac. at a rate of 111 g/ac. when mixed with 18 gal./ac. (168 L/ha) of water
Field peas

// For best results, apply Sencor with MCPA Na-salt when the vines are less than 6 in. long or before the 6 node stage
// Single application – a 2.5 kg jug will treat 16.5 to 22.5 ac. at rates of 152 g/ac. and 111 g/ac. mixed with 18 gal./ac. (168 L/ha) of water
// Split application – a 2.5 kg jug will treat 32 ac. at a rate of 77 g/ac. or 44 ac. at a rate of 57 g/ac.; each application is mixed with 18 gal./ac. (168 L/ha) of water
Tip: Five 2.5 kg jugs of Sencor plus three 10 L jugs of MCPA Na-salt will treat 160 ac.
Note: Apply the first application at the 2 leaf weed stage and the second application at the second flush.
Features and Benefits

// Delaro combines two highly dynamic and complementary active ingredients – prothioconazole (Group 3) and trifloxystrobin (Group 11) – for a dual mode of action to provide quick and long-lasting protection

// A great choice for your first fungicide pass as it delivers broad-spectrum disease control for major pulse stem, leaf and pod diseases

Application Guidelines

Rate

// 355 mL/ac. (880 mL/ha)

Application Tips

// Good spray coverage and canopy penetration are important for best results

Application Timing

Chickpeas and field peas

// Apply at the beginning of flowering or at first sign of disease

Lentils

// Apply at the beginning of flowering or at first sign of disease

// Two Delaro applications can be made sequentially when the target pathogens are unique for each application (for example, target ascochyta with the first application and sclerotinia with the second)

// When disease pressure is high, use a program approach of Delaro, followed by a second application of Proline or Delaro 10 to 14 days after the first application
**Water Volumes**

**Ground**
- Minimum of 10 gal./ac. (94 L/ha)

**Aerial**
- Minimum of 5 gal./ac. (47 L/ha)

**Rainfastness**
- Rainfast 1 hour after application

---

**Pre-Harvest Interval**

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickpeas, Field peas, Lentils</td>
<td>30</td>
</tr>
</tbody>
</table>

---

**2-Year Field Pea Fungicide Trials Summary**

<table>
<thead>
<tr>
<th>Yield (bu./ac.)</th>
<th>Delaro</th>
<th>Priaxor® fungicide (high rate)</th>
<th>Elatus® fungicide</th>
<th>Dyax® fungicide</th>
<th>Untreated</th>
</tr>
</thead>
<tbody>
<tr>
<td>57.3</td>
<td></td>
<td>55</td>
<td>54.4</td>
<td>54.8</td>
<td>52.8</td>
</tr>
</tbody>
</table>

Tests showed an average of +4.5 bu./ac. (+8.5%) advantage for Delaro when compared to the untreated check.

To see local results, visit ItPaysToSpray.ca

Source: 8 Bayer replicated field scale trials (2018=5; 2019=3). Your results may vary according to agronomic, environmental and pest pressure variables.

---

**2-Year Lentil Fungicide Trials Summary**

<table>
<thead>
<tr>
<th>Yield (bu./ac.)</th>
<th>Delaro</th>
<th>Priaxor® fungicide (high rate)</th>
<th>Elatus® fungicide</th>
<th>Dyax® fungicide</th>
<th>Untreated</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.4</td>
<td></td>
<td>38.3</td>
<td>38</td>
<td>38.5</td>
<td>37.7</td>
</tr>
</tbody>
</table>

Tests showed an average of +2.7 bu./ac. (+7.2%) advantage for Delaro when compared to the untreated check.

To see local results, visit ItPaysToSpray.ca

Source: 12 Bayer replicated field scale trials (2018=7; 2019=5). Your results may vary according to agronomic, environmental and pest pressure variables.
Features and Benefits

// Proven, broad crop, systemic fungicide
// Provides white mould and ascochyta disease control, especially when disease pressure is high and multiple fungicide applications are required

Application Guidelines

Rate
// 128 to 170 mL/ac. (315 to 420 mL/ha)

Application Timing
// Proline may be applied at the first sign of disease
// For optimum disease control in lentils, apply Proline 10 to 14 days following the first application of Delaro
// Can be applied by ground or air

Water Volumes

Ground
// Minimum of 10 gal./ac. (94 L/ha)

Aerial
// Minimum of 4.5 gal./ac. (42 L/ha)

Rainfastness
// Rainfast 1 hour after application

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickpeas</td>
<td>7</td>
</tr>
<tr>
<td>Lentils</td>
<td>7</td>
</tr>
</tbody>
</table>

For full details, please reference product label.
Features and Benefits

- Superior protection against both anthracnose and white mould
- The combined strength of two modes of action, including the proven protection of fluopyram (Group 7) and prothioconazole (Group 3)
- Excellent resistance management tool
- Contact and systemic protection for immediate and long-lasting disease control

Application Guidelines

Rate

- 304 mL/ac. for control of anthracnose, ascochyta, Asian soybean rust and white mould
- 202 to 304 mL/ac. for control of anthracnose, ascochyta and Asian soybean rust (the rate depends on the disease pressure)

Application Timing

- For best results, apply Proline GOLD preventively
- A preventive application targeted just prior to the first pin bean being formed often provides the best white mould protection
- If conditions warrant, a second application can be made in 10 days; prior to canopy closure

Water Volumes

- Ground only
  - Minimum of 10 gal/ac. (94 L/ha)

Rainfastness

- Rainfast 1 to 2 hours after application, when dry

Re-Entry Interval

- 24 hours

Pre-Harvest Interval

- Proline GOLD may not be applied within 14 days of harvest

Maximum Application

- Two applications per year

White mould continues to be the number one disease problem for dry bean growers in Canada. According to Manitoba Agriculture, “fungicide applications are most critical when target yields are high, vine growth is heavy and the weather is moist during flowering.”

Source: Colorado State University, 2015.
Features and Benefits

- Superior protection against both anthracnose and white mould.
- The combined strength of two modes of action, including the proven protection of fluopyram (Group 7) and prothioconazole (Group 3).
- Excellent resistance management tool.
- Contact and systemic protection for immediate and long-lasting disease control.

Application Guidelines

Rate
- 304 mL/ac. for control of anthracnose, ascochyta, Asian soybean rust and white mould.
- 202 to 304 mL/ac. for control of anthracnose, ascochyta and Asian soybean rust (the rate depends on the disease pressure).

Application Timing
- For best results, apply Propulse preventively.
- A preventive application targeted just prior to the first pin bean being formed often provides the best white mould protection.
- If conditions warrant, a second application can be made in 10 days; prior to canopy closure.

Water Volume
- Ground only
- Minimum of 19 gal/ac. (175 L/ha)

Rainfastness
- Rainfast 1 to 2 hours after application, when dry.

Re-Entry Interval
- 24 hours.

Pre-Harvest Interval
- Propulse may not be applied within 14 days of harvest.

Maximum Application
- Two applications per year.

White mould continues to be the number one disease problem for dry bean growers in Canada. According to Manitoba Agriculture, “Fungicide applications are most critical when target yields are high, vine growth is heavy and the weather is moist during flowering.”

Source: Colorado State University, 2015.
Features and Benefits

- Decis is registered for application either by ground or air; and is not prone to gassing off, washing off or leaching
- Flexible rates to address insect stages and temperature variations within insect populations
- Readily tank mixable with many leading herbicides
- When spraying under high temperature (+25°C), it is recommended that the highest registered application rate be used

Application Tips

- Scout your fields often to ensure proper application and timing
- Scouting should occur in the early morning or in the evening when the insects are actively feeding
- Use sufficient water to ensure thorough coverage; more water may be required when dense foliage is present
- Decis is a contact insecticide, so for best results spray when insects are feeding
- Avoid application when bees are foraging
- For best results use the maximum recommended rate of application, as efficacy at lower rates may be affected by temperature

Application Guidelines

Recommended Rates

<table>
<thead>
<tr>
<th>CROP</th>
<th>INSECT</th>
<th>50 EC RECOMMENDED RATE</th>
<th>100 EC RECOMMENDED RATE</th>
<th>ACRES PER JUG 50 EC</th>
<th>ACRES PER JUG 100 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lentil</td>
<td>Cutworm</td>
<td>80 mL/ac. in</td>
<td>40 mL/ac.</td>
<td>30 ac./2.4 L jug</td>
<td>120 ac./9.6 L jug</td>
</tr>
<tr>
<td>Lentil</td>
<td>Grasshopper</td>
<td>60 mL/ac. in</td>
<td>30 mL/ac.</td>
<td>40 ac./2.4 L jug</td>
<td>160 ac./9.6 L jug</td>
</tr>
</tbody>
</table>

Application Timing

**Cutworm**

- Ground or aerial – apply once per season when larvae are present and feeding
- Do not disturb the soil after application

-Water Volumes

**Ground**

- Minimum of 10 gal./ac. (94 L/ha)

**Aerial**

- Minimum of 1 gal./ac. (9.4 L/ha)

Rainfastness

- Rainfast 1 hour after application

Pre-Harvest Intervals

- Re-entry is 12 hours. Decis may not be applied within the following timelines:

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lentil</td>
<td>30</td>
</tr>
</tbody>
</table>

Tank Mixes

For a complete list of tank-mix partners and mixing order, please refer to page 135.
## Crop Staging Guide

### Traits

<table>
<thead>
<tr>
<th>Roundup Ready 2 Xtend</th>
<th>Roundup Ready 2 Yield</th>
<th>XtendFlex</th>
</tr>
</thead>
</table>

### Seed Treatments

<table>
<thead>
<tr>
<th>Acceleron Seed</th>
<th>Allegiance</th>
<th>EverGo! Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Solutions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Herbicides

<table>
<thead>
<tr>
<th>Roundup Xtend with VaporGrip Technology</th>
<th>Sencor</th>
<th>XtendiMax with VaporGrip Technology</th>
</tr>
</thead>
</table>

### Fungicides

<table>
<thead>
<tr>
<th>Delaro</th>
<th>Stratego PRO</th>
</tr>
</thead>
</table>

### Insecticide

<table>
<thead>
<tr>
<th>Concept</th>
</tr>
</thead>
</table>
SOYBEAN CROP STAGING GUIDE

Application should be based on the presence of vulnerable pest developmental stages and significant populations.

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
INNOVATIVE TRAIT

Roundup Ready 2 Xtend soybeans combine the proven yield potential of the Roundup Ready 2 Yield soybean trait with a tolerance to both dicamba and glyphosate.

Features and Benefits

Improved Weed Control

// Roundup Ready 2 Xtend soybeans have a built-in tolerance to both dicamba and glyphosate for control of tough grass and broadleaf weeds, including resistant broadleaf weeds such as Canada fleabane, kochia and waterhemp

// XtendiMax (dicamba) and Roundup Xtend (glyphosate/dicamba premix), both with VaporGrip® Technology, are two chemistry options to help growers enhance their yield potential

// Employing multiple modes of action to control similar weed spectrums is part of a good weed resistance management strategy

Residual activity for a wider window of weed control

// The residual activity of dicamba may reduce early weed competition and improve late-season control, supporting higher yields and cleaner fields at harvest

// The short-term residual activity provided by dicamba controls small-seeded broadleaf weeds, including common ragweed, lamb’s-quarters and redroot pigweed, while helping to manage herbicide resistance concerns

// Research trials showed a 2.4 bu./ac. increase* due to reduced early weed competition from the residual activity of dicamba

Yield Impact of Early Residual Weed Control

Added yield potential from a pre-plant application of dicamba combined with Roundup WeatherMAX, as demonstrated in Bayer research trials.

* Source: 39 Bayer Market Development research trials (2008 to 2014). Average of 2.4 bu./ac. advantage over 2-pass glyphosate-only treatment. Your results may vary depending on agronomic, environmental and pest pressure variables.
BUILT-IN YIELD POTENTIAL

Roundup Ready 2 Yield Soybeans have built-in yield potential with test results having shown more 3, 4 and 5 bean pods than original Roundup Ready soybeans.

Features and Benefits

// More beans per pod means more bushels per acre

// Proven trait technology that’s increasing yield potential across Western Canada

// Safe, simple, dependable weed control

// Advanced trait insertion delivers more yield opportunity

// Using advanced insertion and selection technologies, the Roundup Ready 2 Yield gene is situated in one of these high-yield DNA regions to deliver high-yield potential
XTENDFLEX SOYBEANS

XtendFlex soybeans provide more choice, control and flexibility than ever before

// The Roundup Ready® Xtend Crop System is expanding with XtendFlex soybeans

// XtendFlex soybeans is a triple-stack trait that provides glyphosate, dicamba and glufosinate tolerance, thus providing choice and flexibility to manage tough-to-control and resistant weeds

// Provides the benefits of the Roundup Ready Xtend Crop System including the ability to use either Roundup Xtend or XtendiMax, both with VaporGrip Technology, in your first herbicide pass for short-term residual activity on tough small-seeded broadleaf weeds

// Flexibility to apply Liberty® 200 SN herbicide as needed for non-selective post-emergent applications

// Allows greater choice and flexibility in selecting a herbicide based on weed spectrum and field conditions

// XtendFlex soybeans bring choice and flexibility while continuing to provide the benefits of the Roundup Ready Xtend Crop System

Source: Bayer Market Development Trials, Port Alma, ON. (photos taken July 28, 2020). Your results may vary depending on agronomic, environmental and pest pressure variables.
<table>
<thead>
<tr>
<th>CROPS FOR USE</th>
<th>FORMULATION</th>
<th>PACKAGING</th>
<th>FEATURES AND BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>Suspension concentrate</td>
<td>Commercially applied</td>
<td>Dependable and consistent control of major seed rots and seedling blights</td>
</tr>
</tbody>
</table>

**ACTIVE INGREDIENTS**

**BASIC**
- Metalaxyl - Group 4
- Penflufen - Group 7
- Prothioconazole - Group 3

**STANDARD**
- Cyantraniliprole - Group 28
- Metalaxyl - Group 4
- Penflufen - Group 7
- Prothioconazole - Group 3

**DISEASES CONTROLLED**
- *Early-season Phytophthora*
- *Early-season root rot and seedling blight*  
  - Caused by *Fusarium spp.*, including *Fusarium graminearum* and *Rhizoctonia solani*
- *Seed rot*  
  - *pre-emergent damping-off*  
  - Caused by *Phomopsis longicolla*

**DISEASES SUPPRESSED**
- *Seed rot*  
  - *pre-emergent damping-off*  
  - Caused by seed-borne *Ascochyta rabiei*

**INSECT PROTECTION**
- Bean leaf beetle  
  - Damage from early-season feeding
- Black cutworm
- European chafer
- June beetle
- Seedcorn maggot
- Wireworms

For full details, please reference product label.

**SEED TREATMENT**

**Features and Benefits**

// Dependable and consistent control of major seed rots and seedling blights
// Acceleron E-007 SAT is included in the product offerings as a finishing product because it improves the flow of seed through the seed handling and planting equipment, while enhancing the seed coating and appearance of the treated seed

**Tank Mixes**

// Acceleron can be seamlessly mixed with most inoculations* to improve nodule formulation and nitrogen fixation

*Always refer to the individual product labels for proper use instructions and restrictions.

**Application Tips**

// Commercially applied by a seed supplier for convenience and to ensure uniform and consistent coverage on each and every soybean
Features and Benefits

- Dependable and consistent control of all seed rots and seedling blights caused by *Pythium* spp.
- A simple solution for early-season *Phytophthora* spp. protection
- Powerful systemic protection for seed, roots and emerging plants; combined with ease of use and low rates per acre

Application Rate

<table>
<thead>
<tr>
<th>CROP</th>
<th>ALLEGIANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>46 to 93 mL/100 kg of seed</td>
</tr>
</tbody>
</table>

Application Guidelines

- Must be applied with or as part of a seed treatment package that includes a colourant

Tank Mixes

- Must be tank mixed with other fungicides, such as EverGol Energy, for complete disease protection

Allegiance fungicide seed treatment provides powerful control of early-season *Phytophthora* spp. and *Pythium* spp., and is used at low volume application rates with easy tank mixing.
# EverGol® Energy

## Crops for Use

<table>
<thead>
<tr>
<th>Soybeans</th>
</tr>
</thead>
</table>

### Active Ingredients
- Metalaxyl - Group 4
- Penflufen - Group 7
- Prothioconazole - Group 3

### Formulation
- Suspension concentrate

---

## Features and Benefits

- Outstanding disease control at one low application rate
- Enhanced emergence and crop establishment through stronger, healthier roots
- Improved vigour and yield potential, especially under disease pressure
- Seed safe
- Excellent plantability (no planter plate buildup)
- Low dust-off properties
- Low treating area temperature – it can be used at a warehouse/treating area temperature of 5°C (minimum)
- Undiluted product has a very good shelf life, with minimal sedimentation when stored according to label recommendations
- Use with Stress Shield for premium insect protection to deliver a complete seed treatment package
- Add Allegiance for early-season Phytophthora control

---

## Application Guidelines

### Rate
- 65 mL/100 kg of soybean seed
- The blue dye that comes with EverGol Energy must be added, 2 x 5.5 L jugs for each EverGol Energy tote
- Blue dye application rate of 21 mL/100 kg soybean seed for a total application rate of 86 mL/100 kg, (65 mL/100 kg EverGol Energy + 21 mL/100 kg blue dye)

### Application Tips

- Commercially applied by seed suppliers for convenience and to ensure uniform and consistent coverage
- Diluted product should be applied above freezing temperature
- Uniform coverage is necessary for optimum performance
- An appropriate seed colourant (provided) must be added to EverGol Energy before it is applied to the seed
- Agitate before use
- Check with inoculant manufacturers for application and compatibility details

---

## Water Volumes

- EverGol Energy can be diluted with water prior to application to ensure uniform coverage on the seed

---

## Tank Mixes

- Allegiance at 35 mL/100 kg of soybean seed
- Stress Shield at 104 to 208 mL/100 kg of soybean seed

---

## Diseases Controlled

<table>
<thead>
<tr>
<th>Disease</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early-season root rot and seedling blight</td>
<td>Fusarium spp., including <em>Fusarium graminearum</em> and <em>Rhizoctonia solani</em></td>
</tr>
<tr>
<td>Seed rot / pre-emergent damping-off</td>
<td><em>Phomopsis longicolla</em></td>
</tr>
</tbody>
</table>

## Diseases Suppressed

<table>
<thead>
<tr>
<th>Disease</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed rot / pre-emergent damping-off and post-emergent damping-off</td>
<td><em>Fusarium graminearum</em>, <em>Pythium spp.</em> and <em>Rhizoctonia solani</em></td>
</tr>
<tr>
<td>Seedling blight</td>
<td><em>Botrytis cinerea</em></td>
</tr>
</tbody>
</table>

For full details, please reference product label.
MIXING OPTION – EVERGOL ENERGY (If No Mix Tank Available)

To prepare one batch of EverGol Energy without a mix tank, add two jugs of blue dye into the EverGol Energy unit.

Each EverGol Energy unit comes with 2 × 5.5 L units of blue dye.

\[ 1 \times 33.75 \text{ L EverGol Energy} + 2 \times 5.5 \text{ L Blue Dye} = 44.75 \text{ L EverGol Energy + Dye} \]

MIXING OPTION – EVERGOL ENERGY + STRESS SHIELD (If No Mix Tank Available)

To prepare one batch of EverGol Energy plus Stress Shield without a mix tank, pump half of the EverGol Energy into one of the Stress Shield units and the other half into the second Stress Shield unit. Then add one jug of blue dye into each of the Stress Shield units.

Each EverGol Energy unit comes with 2 × 5.5 L units of blue dye.

\[ \frac{1}{2} \times 67.5 \text{ L EverGol Energy} + \frac{1}{2} \times 54 \text{ L Stress Shield} + 1 \times 5.5 \text{ L Blue Dye} = 49.38 \text{ L EverGol Energy + Stress Shield + Dye} \]

MIXING OPTION – EVERGOL ENERGY + STRESS SHIELD (With Mix Tank)

To prepare one batch of EverGol Energy plus Stress Shield with a mix tank, add one tote of EverGol Energy and two totes of Stress Shield into the mix tank. Then add the two jugs of blue dye.

Each EverGol Energy unit comes with 2 × 5.5 L units of blue dye.

\[ 2 \times 27 \text{ L Stress Shield} + 33.75 \text{ L EverGol Energy} + 2 \times 5.5 \text{ L Blue Dye} = 98.75 \text{ L EverGol Energy + Stress Shield + Dye} \]

WHAT IS EVERGOL?

With its unique Group 7 active ingredient penflufen, EverGol offers your crop outstanding defense against diseases (including *Rhizoctonia solani*). As a testament to its efficacy, penflufen represents the first fungicidal active from Bayer specifically engineered for use only in seed treatment. This Group 7 fungicide is combined with Bayer’s Group 3 and 4 fungicides to create EverGol Energy.
CROPS FOR USE

Soybeans (RR2X trait only, do not apply to RR2Y or conventional soybeans)

ACTIVE INGREDIENTS

Dicamba - Group 4
Present as diglycolamine salt

Glyphosate - Group 9
Present as the monoethanolamine salt

FORMULATION
Liquid concentrate

PACKAGING
2 x 10 L jugs = 10 ac.
450 L tote = 225 ac.

WEEDS CONTROLLED

ANNUAL BROADLEAF WEEDS
Annual sow thistle
Biennial wormwood
Buckwheat (tartary, wild)
Bur cucumber
Canada fleabane
Chickweed
Cleavers
Cocklebur
Common lamb’s-quarters
Corn spurry
Cow cockle
Eastern black nightshade
Flickweed
Green smartweed
Hemp-nettle
Kochia
Lady’s thumb
Mustard (hare’s ear, Indian, tumble, wild, wormseed)

Narrow-leaved hawk’s beard
Narrow-leaved vetch
Night-flowering catchfly
Pennsylvania smartweed
Pigweed (redroot, Russian, smooth)
Prickly lettuce
Ragweed (common, false, giant)
Round-leaved mallow
Russian thistle
Shepherd’s purse
Stinkweed
Stork’s bill
Velvetleaf
Volunteer adzuki beans
Volunteer canola (non glyphosate-tolerant)
Volunteer flax
Wild tomato

ANNUAL GRASS WEEDS
Annual bluegrass
Barnyard grass
Crabgrass (large, smooth)
Downy brome
Fall panicum
Foxtail (green, yellow)
Persian darnel
Volunteer barley
Volunteer wheat
Wild proso millet
Wild oats

PERENNIAL WEEDS
Canada thistle
Common milkweed
Dandelion
Field bindweed
Foxtail barley
Perennial sow thistle
Quackgrass
Wire-stemmed muhly
Yellow nutsedge

For full details, please reference product label.

Features and Benefits

// Spray early with confidence with Roundup Ready 2 Xtend soybeans to enhance the Roundup Ready Xtend Crop System
// Helps manage herbicide-resistant weeds by adding another effective mode of action to Roundup, and also provides control of glyphosate-resistant weeds
// Reduced volatility through VaporGrip Technology
// Reduces early-weed competition through short-term soil residual activity
// Controls a broad spectrum of weeds

Application Requirements

// Use nozzles and operating pressures that produce extremely-coarse to ultra-coarse droplets to minimize drift
// Target weeds less than 10 cm tall
// Maintain boom height 50 cm above crop canopy or target weeds to reduce the risk of drift
// Optimal wind speeds for application typically occur between 5 and 15 km/h
// Maintain the required label buffer to protect sensitive areas; do not spray if sensitive crops are downwind
// Ensure ground speed is less than 25 km/h
// Use a triple rinse sprayer clean-out procedure
// Do not use ammonium sulfate or ammonium-based additives in application
// Use a minimum carrier water volume of 10 gal/ac. or 15 gal/ac. if including a drift reduction additive

SUCCESSFUL APPLICATION STARTS HERE

// Applying Roundup Xtend with VaporGrip Technology or XtendiMax with VaporGrip Technology herbicides? Go to SprayForecast.ca
// The Spray Forecast tool provides real-time, location-specific data on temperature, humidity, wind speed and inversion risk
Application Guidelines and Timing

Equivalent dose of Roundup WeatherMAX and XtendiMax when using Roundup Xtend with VaporGrip Technology

// At 2 L/ac. = 0.9 L/ac. Roundup WeatherMAX + 0.7 L/ac. XtendiMax
// At 1.5 L/ac. = 0.67 L/ac. Roundup WeatherMAX + 0.5 L/ac. XtendiMax
// At 1 L/ac. = 0.45 L/ac. Roundup WeatherMAX + 0.35 L/ac. XtendiMax

Pre-plant/pre-emergence

// 1.5 or 2 L/ac. (3.75 or 5 L/ha)

Note: 2 L/ac. is preferred for maximum soil activity and the most consistent weed control.

Post-emergence

// 1.5 or 2 L/ac. (3.75 or 5 L/ha)

Note: Roundup Xtend may be applied up to R1, but the preferred application window is up to V2 to maximize soil activity benefits. Up to two post applications can be made per season. The second post application should only be used to control glyphosate-resistant weeds.

The 2 L/ac. rate can be used only once in a season and should be applied pre-plant, pre-emergence or in-crop early post-emergence (up to the V2 growth stage). 4 L/ac. is the maximum total to be applied in a single season.

Overall Weed Control

Herbicide Group 4 and Group 9

A pre-mix of our low-volatility dicamba formulation with Roundup for ease of use.

Source: 39 Canada Market Development Trials (2018 and 2019). Treatments were spring applied at the time of burndown and planting. Predominant species rated were Canada fleabane, kochia, lamb’s-quarters and redroot pigweed. All rates are g ai-ae/ha.

Your results may vary according to agronomic, environmental and pest pressure variables.

The high yield potential of Roundup Ready 2 Xtend soybeans, plus the ability to spray dicamba for short-term residual control of small-seeded broadleaf weeds (including glyphosate-resistant weeds), sets your crop up for maximum yield potential.
Glyphosate-Resistant Kochia Control Comparison

Roundup Xtend herbicide with VaporGrip Technology at 2 L/ac.

Enlist Duo® herbicide at 1.72 L/ac.

Source: 35 days after Roundup Xtend Herbicide with VaporGrip Technology application in Carseland, AB (2019). Your results may vary depending on agronomic, environmental and pest pressure variables.

Glyphosate-Resistant Canada Fleabane Control Comparison

XtendiMax herbicide with VaporGrip Technology at 0.7 L/ac.

2,4-D Ester 700 at 0.5 L/ac.

Source: 8 weeks after application in Thamesville, ON. (2019). Your results may vary depending on agronomic, environmental and pest pressure variables.
Features and Benefits

// Residual activity provides control of weed flushes
// Group 5 herbicide helps manage Group 2-resistant broadleaf weeds, including chickweed, hemp-nettle, kochia and wild mustard
// Tank-mixing Sencor with Roundup Xtend or XtendiMax will help promote proper weed management stewardship and control Group 9 resistant weeds, such as Canada fleabane and kochia
// Controls many glyphosate-resistant and Group 2 herbicide-resistant weeds, including ragweed when applied pre-emerge in soybeans
// Controls volunteer canola in soybeans, including herbicide-tolerant canola

Application Guidelines

Rate

// Rate to use is soil-type dependent, see label for details
// DF: 57 to 607 g/ac. (140 to 1,500 g/ha)
// Liquid: 344 to 911 mL/ac. (850 to 2,250 mL/ha)
**Application Tips**  

**BC, AB, SK, MB**  
// Apply Sencor as a pre-plant incorporation with other herbicides mixed with a minimum of 11 gal/ac. (100 L/ha) of water  
// Sencor should only be mixed with water and not with fertilizer solutions  
// Sencor should not be used on sandy or coarse soils with less than 2% organic matter  

**ON, QC, NB, NS, NFLD, PEI**  
// Heavy rains after application may result in some stunting or yellowing, but yield will not be affected  
// Sencor should not be used on sandy or coarse soils with less than 2% organic matter  
// Apply no more than once per season  
// Sencor will not control Triazine-resistant biotypes  

**Crops, Rates and Staging**  
// Spray within crop staging guidelines. Applying after the recommended crop stage will increase the risk of leaf burn.  

**BC, AB, SK, MB**  
// Apply as a pre-plant incorporation in combination with other herbicides  
// Single application – a 2.5 kg jug will treat 11 to 22.5 ac. at rates of 223 g/ac. and 111 g/ac.  

**ON, QC, NB, NS, NFLD, PEI**  
// Apply as a pre-emergent broadcast spray or as a pre-plant incorporation  
// Single application – a 2.5 kg jug will treat 4 to 11 ac. at rates of 607 g/ac. and 223 g/ac. A 5 L jug will treat 5.5 to 14.5 ac. at rates of 911 mL/ac. and 344 mL/ac.  

*Note: For further information, refer to the product label.*

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**Broadleaf Weed Control in Roundup Ready 2 Xtend soybeans – 14 days after application**

![Weed Control Graph](image1)

**Broadleaf Weed Control – 56 days after application**

![Weed Control Graph](image2)

*Source: 5 Canada Market Development Trials (2019). Treatments were spring applied at the time of burndown and planting. A total of 19 broadleaf weeds were evaluated, predominate species being lamb’s-quarters and redroot pigweed. Rates are in g ai/ac/ha. Your results may vary according to agronomic, environmental and pest pressure variables.*

---

**Weed out herbicide resistance.**  
Sencor herbicide is an easy tool that can help control glyphosate and Group 2-resistant weeds.  
Visit MixItUp.ca to learn more.
**Crops for Use**
- Soybeans

**Active Ingredient**
- Dicamba
  - Group 4
  - Present as diglycolamine salt

**Formulation**
- Liquid concentrate

**Packaging**
- 2 x 10 L jugs
- 450 L tote

**Weeds Controlled**
- **Annual Broadleaf Weeds**
  - Buckwheat (tartary, wild)
  - Canada fleabane
  - Cleavers
  - Common lamb’s-quarters
  - Corn spurry
  - Cow cockle
  - Green smartweed
  - Lady’s-thumb
  - Mustard (hare’s ear, Indian, tumble, wild, wormseed)
  - Pigweed (redroot, Russian, smooth)
- **Perennial Weeds**
  - Canada thistle
  - Field bindweed
  - Perennial sow thistle

**Features and Benefits**
- Reduces early weed competition through short-term residual control of small seeded broadleaf weeds
- Helps manage weed resistance by controlling glyphosate-resistant weeds
- Reduced volatility through VaporGrip Technology

**Application Requirements**
- Use nozzles and operating pressures that produce extremely-coarse to ultra-coarse droplets to minimize drift
- Target weeds less than 10 cm tall
- Maintain boom height 50 cm above crop canopy or target weeds to reduce the risk of drift
- Optimal wind speeds for application typically occur between 5 and 15 km/h
- Maintain the required label buffer to protect sensitive areas; do not spray if sensitive crops are downwind
- Ensure ground speed is less than 25 km/h
- Use a triple rinse sprayer clean-out procedure
- Do not use ammonium sulfate or ammonium-based additives in application
- Use a minimum carrier water volume of 10 gal/ac. or 15 gal/ac. if including a drift reduction additive

**Post-emergence**
- 0.33 or 0.7 L/ac.

Note: XtendiMax may be applied up to R1, but the preferred application window is up to V2 to maximize soil activity. Up to two post applications can be made per season. The second post application should only be used for control of glyphosate-resistant weeds. The 0.7 L/ac. rate can be used only once in a season and should be applied pre-plant, pre-emergence or in-crop early post-emergence (up to the V2 growth stage). 1.4 L/ac. is the maximum total to be applied in a single season.

**Application Guidelines and Timing**

**Pre-plant/pre-emergence**
- 0.33 or 0.7 L/ac.

Note: 0.7 L/ac. is preferred for maximum residual opportunity and the most consistent weed control.
Application Window

Preferred application window for 0.7 L/ac. rate to maximize residual weed control benefits.

Application window for Roundup XtendiMax herbicide with VaporGrip Technology in Roundup Ready 2 Xtend Soybeans.

The preferred rate for maximum soil activity and most consistent weed control is 0.7 L/ac. The 0.7 L/ac. rate is to be used only once in a season and should be applied pre-plant, pre-emergence or in-crop early post-emergence up to the V2 stage.

Canada Fleabane control

<table>
<thead>
<tr>
<th>% Weed Control</th>
<th>2,4-D Ester (0.34 L/ac.)</th>
<th>XtendiMax (0.7 L/ac.)</th>
<th>Enlist Duo® herbicide (1.72 L/ac.)</th>
<th>Roundup Xtend (2 L/ac.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>94</td>
<td>83</td>
<td>96</td>
<td></td>
</tr>
</tbody>
</table>

Source: 39 Canada Market Development Trials (2018 and 2019). Treatments were spring applied at the time of burn down and planting. Predominate species rated were Canada fleabane, kochia, lamb’s quarters and redroot pigweed. All rates are ai-ach.

Your results may vary depending on agronomic, environmental and pest pressure variables.

Glyphosate-resistant Canada Fleabane Control Comparison

XtendiMax herbicide with VaporGrip Technology at 0.7 L/ac.

2,4-D Ester 700 at 0.5 L/ac.

Source: 8 weeks after XtendiMax Herbicide with VaporGrip Technology application in Thamesville, ON (2019). Your results may vary depending on agronomic, environmental and pest pressure variables.
Features and Benefits

Delaro combines two highly dynamic and complementary active ingredients – prothioconazole (Group 3) and trifloxystrobin (Group 11) – for a dual mode of action to provide quick and long-lasting protection.

A great choice for your first-pass fungicide application because it delivers broad-spectrum disease control for all major soybean stem, leaf and pod diseases.

Application Guidelines

Rate

230 mL/ac. (572 mL/ha)

Application Tips

Good spray coverage and canopy penetration are important for best results.

Application Timing

Begin fungicide applications preventively or at the first signs of disease from the beginning of bloom (R1) to the beginning of seed formation (R5). The optimal timing is between mid-bloom (R1.5) and the onset of pod formation (R3).

Water Volumes

Ground

Minimum of 10 gal./ac. (94 L/ha)

Aerial

Minimum of 5 gal./ac. (47 L/ha)

Rainfastness

Rainfast 1 hour after application

Pre-Harvest Interval

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean</td>
<td>20</td>
</tr>
</tbody>
</table>

DISEASES CONTROLLED

Asian soybean rust
Brown spot
Frogeye leaf spot
Phomopsis stem blight

DISEASES SUPPRESSED

Charcoal Rot
White mould

For full details, please reference product label.
## Soybeans

### PROVINCES
- ON, QC, NB, NS, NFLD, PEI

### ACTIVE INGREDIENTS
- **Prothioconazole** - Group 3
- **Trifloxystrobin** - Group 11

### FORMULATION
- Suspension concentrate

### PACKAGING
- **7.1 L jug**
  - 30 ac./jug
- **113.6 L tote**
  - 480 ac./tote

### DISEASES CONTROLLED
- Asian soybean rust
- Brown spot
- Frogeye leaf spot
- Phomopsis stem blight

### DISEASES SUPPRESSED
- Charcoal rot
- White mould

For full details, please reference product label.

---

### Features and Benefits

- Delivers higher yield potential through broad-spectrum long–lasting disease control
- Stratego Pro testing has established consistent yield improvements that can help maximize profitability – results show a multi-year 8% average increase over untreated soybeans.*

*Source: 17 Bayer soybean trials (2012 to 2013). Your results may vary depending on agronomic, environmental and disease pressure variables

### Application Guidelines

#### Rate
- Soybeans: 230 mL/ac. (572 mL/ha)

#### Application Tips
- For best results, apply before disease is present or at the first sign of disease pressure
- Can be applied by ground or aerial application
- When disease pressure is high, make a second application 10 to 14 days later
- For best white mould protection, aim to protect flowers and apply before disease is present

### Application Timing

- For white mould protection, target the flower blossoms
- For low to moderate disease pressure:
  - One application should be made at the R1.5 to R3 stage
  - High white mould pressure:
  - Two applications are recommended. The first at R1 and the second application 10 to 14 days later.

### Water Volumes
- Minimum of 5 to 20 gal./ac. (47 to 187 L/ha)

### Rainfastness
- Rainfast 1 hour after application

### Pre-Harvest Interval

<table>
<thead>
<tr>
<th>CROP</th>
<th>PRE-HARVEST INTERVAL (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean</td>
<td>20</td>
</tr>
</tbody>
</table>
Stratego PRO provided the highest and most consistent yields in soybeans.

Source: 2 Comparison trials, Chris Gillard, University of Guelph, Ridgetown (2016 and 2017). Reproduced with permission. Your results may vary depending on agronomic, environmental and disease pressure variables.

Stratego PRO on soybeans provided a 5.1 and 8.6 bu./ac. increase in 2016 and 2017 over the untreated check.

Source: 2 White mould trials, U of G, Dr. Chris Gillard, photo by Allan Kaastra. Reproduced with permission. One application. Your results may vary depending on agronomic, environmental and disease pressure variables.

For best white mould protection, protect flowers and apply before disease is present.

Stratego PRO provided the highest and most consistent yields in soybeans.

Source: 2 Comparison trials, Chris Gillard, University of Guelph, Ridgetown (2016 and 2017). Reproduced with permission. Your results may vary depending on agronomic, environmental and disease pressure variables.
Features and Benefits

- Patented O-TEQ liquid formulation ensures that Concept is rainfast and acts quickly with long staying power on the leaf.
- Dual modes of action with contact and systemic activity.
- Excellent replacement for organophosphates because of Concept's broad spectrum of activity.
- Fast knockdown and long-lasting insect control.

Application Guidelines

**Rate**
- 132 to 263 mL/ac. (325 to 650 mL/ha)

**Application Timing**
- Apply when the target pest population has reached economic thresholds according to local recommendations.

Application Tips

- Recommended soybean rate is 263 mL/ac. for best knockdown and residual activity.
- Do not apply Concept following a seed treatment or a soil application of a Group 4 insecticide.
- Maximum three applications per season.
- No surfactant required.
- Concept is registered for aerial application on soybeans.
- Pre-harvest interval for soybeans is 20 days.

Water Volumes

**Ground**
- Minimum of 10 gal./ac. (94 L/ha)

**Aerial**
- Minimum of 5 gal./ac. (47 L/ha)

Rainfastness
- Rainfast 1 hour after application.

Re-Cropping Intervals

- 30 days for cereal grains (barley, oats and wheat).
- 9 months for beans and peas. Beans include adzuki beans, dry common beans, faba beans, lima beans, mung beans, scarlet runners, snap common beans and soybeans.
- 1 year for all other food and feed crops.
Resources

Cereal Fungicide Head Timing Guide
Climate FieldView
Measurement Index
Product Reference Guides
Resistance Management: Combined Fungicide Resistance Risk
Resistance Management: Mix It Up
Tank Mixes
Temperature Consideration and Herbicide Application
W.A.M.L.E.G.S.
Barley

Although there is generally a seven-day window to apply a fungicide for maximum yield potential and disease protection, data indicates that growers who apply their fungicides early (between Day +1 and Day +3) will receive the greatest return on their investment* (see chart below).

<table>
<thead>
<tr>
<th>DAYS BEFORE (-)</th>
<th>DAYS AFTER (+)</th>
<th>HEADING (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAY -2</td>
<td></td>
<td>Flowering has begun in the boot.</td>
</tr>
<tr>
<td>DAY -1</td>
<td></td>
<td>Heads are beginning to emerge. The awns have emerged from the sheath with head emergence to follow.</td>
</tr>
<tr>
<td>DAY +1 TO +2</td>
<td></td>
<td>Heads are now 70 to 100% emerged with 50% of florets exposed.</td>
</tr>
<tr>
<td>DAY +4 TO +5</td>
<td></td>
<td>Heads are completely emerged with 90% of florets exposed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DAY</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>Make arrangements for a fungicide application.</td>
</tr>
<tr>
<td>-4</td>
<td>Be ready to apply product.</td>
</tr>
<tr>
<td>-3</td>
<td>Early edge of the application window. Begin application if future spraying conditions are forecasted to be less than ideal.</td>
</tr>
<tr>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>+1</td>
<td></td>
</tr>
<tr>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>+3</td>
<td></td>
</tr>
<tr>
<td>+4</td>
<td>OPTIMUM TIME TO SPRAY PROSARO XTR FOR BEST RESULTS.</td>
</tr>
<tr>
<td>+5</td>
<td>The last edge of the application window. An application of Prostar XTR will still provide economic benefit.</td>
</tr>
<tr>
<td>+6</td>
<td>Prosaro XTR applied on Days +6 and +7 will provide less agronomic and economic benefit.</td>
</tr>
<tr>
<td>+7</td>
<td></td>
</tr>
</tbody>
</table>

Head emergence and flowering will vary depending on the weather conditions, soil conditions, variety of barley and planting date. When in doubt, hedge on the early side.

Wheat

Although there is generally a seven-day window to apply a fungicide for maximum yield potential and disease protection, data indicates that growers who apply their fungicides early (between Day +1 and Day +2) receive the greatest return on their investment* (see chart below).

---

GET THE MOST FROM YOUR APPLICATIONS THIS SEASON

Using tools throughout the year sets up your applications for success.

PRODUCT PLACEMENT WHERE IT MATTERS

Creating prescriptions for your fungicide applications can help you make the most of the variability in your fields. Apply fungicides where they will make the most impact.

Create prescriptions in fields with a higher degree of variability using satellite imagery and historical field data.*

*Always follow label directions.

PLAN YOUR SEASON SO YOU ARE READY WHEN YOUR FIELDS ARE

Planning ahead makes for easy record keeping. Entering your applications in Climate FieldView before the season starts, will help ensure data management doesn’t slow you down when your fields are ready.
MAP EVERY PASS YOU MAKE IN YOUR FIELDS

Map your application passes when you are in the field. Capture the products and rates that have been used (left image, below), along with any other variabilities in your application, such as sprayer speed (right image, below) and checkstrips. Having your application maps instantly and easily available helps with field management decisions throughout the season and planning for next year.

USE SEASON RESULTS TO MAKE FOR EASY DECISION MAKING NEXT YEAR

At the end of the year, review your as-applied maps and product rates, seasonal weather, satellite imagery and scouting notes to help evaluate your yield at a field and sub-field level.
**METRICS IN WEED CONTROL**

<table>
<thead>
<tr>
<th>CONVERSION FACTORS COMMON TO WEED CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ha) Hectares = Acres × 0.405</td>
</tr>
<tr>
<td>(kPa) Kilopascals = Pounds per square inch × 6.9</td>
</tr>
<tr>
<td>(km/h) Kilometres per hour = Miles per hour × 1.61</td>
</tr>
</tbody>
</table>

**BENCHMARKS**

- 16 ha = 40 acres
- 64 ha = 160 acres
- 200 kPa = 29 pounds per square inch
- 250 kPa = 36 pounds per square inch
- 300 kPa = 43 pounds per square inch
- 4.8 km/h = 3 mph
- 6.4 km/h = 4 mph
- 8.0 km/h = 5 mph
- 9.5 km/h = 6 mph
- 1 gallon per acre = 9.35 litres per hectare

**PRESSURE**

- 1 foot lift of water = 0.433 pound pressure per square inch (psi)
- 1 pound pressure per square inch will lift water = 2.31 feet

**RATES OF FLOW FOR CALIBRATING SPRAY TIPS**

<table>
<thead>
<tr>
<th>GPM</th>
<th>Seconds to Collect 1 Quart</th>
<th>GPM</th>
<th>Seconds to Collect 1 Quart</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.050</td>
<td>300</td>
<td>0.200</td>
<td>75</td>
</tr>
<tr>
<td>0.060</td>
<td>250</td>
<td>0.225</td>
<td>67</td>
</tr>
<tr>
<td>0.070</td>
<td>214</td>
<td>0.250</td>
<td>60</td>
</tr>
<tr>
<td>0.080</td>
<td>188</td>
<td>0.300</td>
<td>50</td>
</tr>
<tr>
<td>0.090</td>
<td>167</td>
<td>0.350</td>
<td>43</td>
</tr>
<tr>
<td>0.100</td>
<td>150</td>
<td>0.400</td>
<td>38</td>
</tr>
<tr>
<td>0.110</td>
<td>136</td>
<td>0.500</td>
<td>30</td>
</tr>
<tr>
<td>0.120</td>
<td>125</td>
<td>0.600</td>
<td>25</td>
</tr>
<tr>
<td>0.130</td>
<td>115</td>
<td>0.700</td>
<td>21</td>
</tr>
<tr>
<td>0.140</td>
<td>107</td>
<td>0.800</td>
<td>19</td>
</tr>
<tr>
<td>0.150</td>
<td>100</td>
<td>0.900</td>
<td>17</td>
</tr>
<tr>
<td>0.170</td>
<td>88</td>
<td>1.000</td>
<td>15</td>
</tr>
</tbody>
</table>

**USEFUL FORMULAS**

\[
GPM = \frac{GPA \times MPH \times W}{5,940}
\]

\[
GPA = \frac{5,940 \times GPM}{MPH \times W}
\]

\[W = \text{Nozzle spacing (in boom spraying) or spray swath (in boomless spraying), in inches.}\]

**TRACTOR SPEEDS**

<table>
<thead>
<tr>
<th>Speed in MPH (Miles per hour)</th>
<th>Time Required in Seconds to Travel a Distance of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 feet</td>
</tr>
<tr>
<td>3.0</td>
<td>23.0</td>
</tr>
<tr>
<td>3.5</td>
<td>20.0</td>
</tr>
<tr>
<td>4.0</td>
<td>17.0</td>
</tr>
<tr>
<td>4.5</td>
<td>15.0</td>
</tr>
<tr>
<td>5.0</td>
<td>14.0</td>
</tr>
<tr>
<td>6.0</td>
<td>11.0</td>
</tr>
<tr>
<td>7.0</td>
<td>9.7</td>
</tr>
<tr>
<td>7.5</td>
<td>9.0</td>
</tr>
<tr>
<td>8.0</td>
<td>8.5</td>
</tr>
<tr>
<td>9.0</td>
<td>7.6</td>
</tr>
<tr>
<td>10.0</td>
<td>6.8</td>
</tr>
<tr>
<td>12.0</td>
<td>5.7</td>
</tr>
<tr>
<td>15.0</td>
<td>4.5</td>
</tr>
<tr>
<td>20.0</td>
<td>3.4</td>
</tr>
</tbody>
</table>

**WEIGHTS AND MEASURES**

<table>
<thead>
<tr>
<th>US abbr.</th>
<th>Length Unit</th>
<th>Approx. Metric Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>mi.</td>
<td>mile</td>
<td>1.609 kilometres</td>
</tr>
<tr>
<td>yd.</td>
<td>yard</td>
<td>0.9144 metres</td>
</tr>
<tr>
<td>ft. or ’</td>
<td>foot</td>
<td>30.48 centimetres</td>
</tr>
<tr>
<td>in. or &quot;</td>
<td>inch</td>
<td>2.54 centimetres</td>
</tr>
</tbody>
</table>

| sq. mi. or mi.² | square mile | 2.59 square kilometres |
| sq. ft. or ft.² | square foot | 0.093 square metres     |

| gal. | gallon | 3.785 litres |
| qt.  | quart  | 0.946 litres |
| pt.  | pint   | 0.473 litres |
| fl. oz. | fluid ounce | 29.573 milliliters or 28.416 cubic centimeters |
| bu.  | bushel | 35.238 litres |
| cu. ft. or ft.³ | cubic foot | 0.028 cubic metres |

| ton | ton | 0.907 metric tons |
| lb. | pound | 0.453 kilograms |
| oz. | ounce | 28.349 grams |
| gr. | grain | 0.648 grams |

**STANDARD POUNDS PER BUSHEL**

| Barley  | 48  |
| Canola  | 50  |
| Chickpeas | 60  |
| Corn Shelled | 56  |
| Corn Ear | 70  |
| Corn Sweet | 50  |
| Feed Bean | 60  |
| Flax    | 56  |

<p>| Lentils | 60  |
| Peas    | 60  |
| Rice    | 45  |
| Rye     | 56  |
| Sorghum | 56  |
| Soybeans | 60  |
| Sunflowers | 24  |
| Oats    | 34  |
| Wheat   | 60  |</p>
<table>
<thead>
<tr>
<th>TO CONVERT INTO</th>
<th>MULTIPLY BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>acres rods</td>
<td>160</td>
</tr>
<tr>
<td>acres hectares</td>
<td>0.4047</td>
</tr>
<tr>
<td>acres sq. feet</td>
<td>43,560</td>
</tr>
<tr>
<td>acres sq. metres</td>
<td>4,047</td>
</tr>
<tr>
<td>acres sq. miles</td>
<td>1.562 × 10^3</td>
</tr>
<tr>
<td>acre-feet cu. feet</td>
<td>43,560</td>
</tr>
<tr>
<td>acre-feet gallons</td>
<td>3,259 × 10^3</td>
</tr>
<tr>
<td>atmospheres ton/sq. inch</td>
<td>0.007348</td>
</tr>
<tr>
<td>atmospheres kg/sq. metre</td>
<td>10.32</td>
</tr>
<tr>
<td>atmospheres pounds/sq. inch</td>
<td>14.70</td>
</tr>
<tr>
<td>bars atmospheres</td>
<td>0.9869</td>
</tr>
<tr>
<td>bars kg/sq. metre</td>
<td>1.020 × 10^4</td>
</tr>
<tr>
<td>bars pounds/sq. feet</td>
<td>2.089</td>
</tr>
<tr>
<td>bushels cu. feet</td>
<td>1.2445</td>
</tr>
<tr>
<td>bushels cu. metres</td>
<td>0.03524</td>
</tr>
<tr>
<td>bushels litres</td>
<td>35.24</td>
</tr>
<tr>
<td>bushels pecks</td>
<td>4.0</td>
</tr>
<tr>
<td>bushels (60 lb./acre) kilograms/hectare</td>
<td>67.26</td>
</tr>
<tr>
<td>Centigrade Fahrenheit (°C × 9/5) + 32</td>
<td></td>
</tr>
<tr>
<td>centimetres inches</td>
<td>0.3937</td>
</tr>
<tr>
<td>centimetres metres</td>
<td>0.01</td>
</tr>
<tr>
<td>centimetres miles</td>
<td>393.7</td>
</tr>
<tr>
<td>centimetres of mercury atmospheres</td>
<td>0.01316</td>
</tr>
<tr>
<td>circumference radians</td>
<td>6.283</td>
</tr>
<tr>
<td>cubic feet cu. metres</td>
<td>0.02832</td>
</tr>
<tr>
<td>cubic feet gallons</td>
<td>7.48052</td>
</tr>
<tr>
<td>cubic feet litres</td>
<td>28.32</td>
</tr>
<tr>
<td>cubic feet/min. gallons/sec.</td>
<td>0.1247</td>
</tr>
<tr>
<td>cubic feet/min. litres/sec.</td>
<td>0.4720</td>
</tr>
<tr>
<td>cubic metres gallons</td>
<td>264.2</td>
</tr>
<tr>
<td>cubic metres litres</td>
<td>1.000</td>
</tr>
<tr>
<td>cubic metres/hectare cu. feet/acre</td>
<td>14,291.6</td>
</tr>
<tr>
<td>fathoms metres</td>
<td>1.8288</td>
</tr>
<tr>
<td>fathoms feet</td>
<td>6.0</td>
</tr>
<tr>
<td>feet metres</td>
<td>0.3048</td>
</tr>
<tr>
<td>feet/sec. km/hr.</td>
<td>1.097</td>
</tr>
<tr>
<td>feet/sec. miles/hr.</td>
<td>0.6818</td>
</tr>
<tr>
<td>footcandle lumen/sq. metre</td>
<td>10.764</td>
</tr>
<tr>
<td>furlongs miles</td>
<td>0.125</td>
</tr>
<tr>
<td>gallons litres</td>
<td>3.785</td>
</tr>
<tr>
<td>gallons/acre litres/hectare</td>
<td>9.354</td>
</tr>
<tr>
<td>gallons pounds of water</td>
<td>8.3453</td>
</tr>
<tr>
<td>gallons/min. cu. feet/sec.</td>
<td>2.226 × 10^3</td>
</tr>
<tr>
<td>gallons/min. litres/sec.</td>
<td>0.06308</td>
</tr>
<tr>
<td>grams ounces (avdp)</td>
<td>0.03527</td>
</tr>
<tr>
<td>grams pounds</td>
<td>2.205 × 10^3</td>
</tr>
<tr>
<td>grams/hectare ounces/acre</td>
<td>0.01428</td>
</tr>
<tr>
<td>grams ai/hectare pounds ai/acre</td>
<td>0.00089</td>
</tr>
<tr>
<td>grams/litre pounds/1,000 gal.</td>
<td>8.345</td>
</tr>
<tr>
<td>grams/litre parts/million</td>
<td>1.000</td>
</tr>
<tr>
<td>grams/litre pounds/gallon</td>
<td>0.008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TO CONVERT INTO</th>
<th>MULTIPLY BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>hectares acres</td>
<td>2.471</td>
</tr>
<tr>
<td>hundred weight/acre kilograms/hectare</td>
<td>125.6</td>
</tr>
<tr>
<td>inches centimetres</td>
<td>2.54</td>
</tr>
<tr>
<td>inches of mercury atmospheres</td>
<td>0.03342</td>
</tr>
<tr>
<td>kilograms pounds</td>
<td>2.205</td>
</tr>
<tr>
<td>kilograms/hectare pounds/acre</td>
<td>0.8822</td>
</tr>
<tr>
<td>kilometres miles</td>
<td>0.6214</td>
</tr>
<tr>
<td>knots kilometres/hr.</td>
<td>1.8532</td>
</tr>
<tr>
<td>knots miles/hr.</td>
<td>1.151</td>
</tr>
<tr>
<td>litres/hectare fluid ounces/acre</td>
<td>13.68</td>
</tr>
<tr>
<td>litres/hectare gallons/acre</td>
<td>0.1069</td>
</tr>
<tr>
<td>litres gallons</td>
<td>0.2642</td>
</tr>
<tr>
<td>metres inches</td>
<td>39.37</td>
</tr>
<tr>
<td>metres feet</td>
<td>3.281</td>
</tr>
<tr>
<td>metres/sec. kilometres/hr.</td>
<td>3.6</td>
</tr>
<tr>
<td>metres/sec. miles/hr.</td>
<td>2.237</td>
</tr>
<tr>
<td>miles feet</td>
<td>5,280</td>
</tr>
<tr>
<td>miles kilometres</td>
<td>1,609</td>
</tr>
<tr>
<td>ounces grams</td>
<td>28.349527</td>
</tr>
<tr>
<td>ounces pounds</td>
<td>0.0625</td>
</tr>
<tr>
<td>ounces (fluid) litres</td>
<td>0.02957</td>
</tr>
<tr>
<td>ounces (fluid) millilitres</td>
<td>29.573</td>
</tr>
<tr>
<td>peck (US) bushels</td>
<td>0.25</td>
</tr>
<tr>
<td>pints litres</td>
<td>0.4732</td>
</tr>
<tr>
<td>pounds grams</td>
<td>453.5924</td>
</tr>
<tr>
<td>pounds kilograms</td>
<td>0.4536</td>
</tr>
<tr>
<td>pounds of water gallons</td>
<td>0.1198</td>
</tr>
<tr>
<td>pounds/acre kilograms/hectare</td>
<td>1.121</td>
</tr>
<tr>
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## HERBICIDES

### CROP
- Barley, Canary seed, Corn, Established timothy grass, Flax, Oats, Rice, Seedling grasses, Wheat (durum, spring, winter)
- Barley, Bromegrass, Perennial ryegrass, Red fescue, Timothy, Trifolium, Wheat (durum, spring, winter)
- Barley, Bromegrass, Perennial ryegrass, Red fescue, Timothy, Trifolium, Wheat (durum, spring, winter)
- Corn (field and sweet)
- Corn, Roundup Ready 2 Technology
- Corn, Roundup Ready 2 Xtend soybeans
- Corn (field)
- Corn (field), Roundup Ready 2 Xtend soybeans

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Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.

Control  Suppression
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*Volunteer canola (non-glyphosate tolerant)

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
### INSECTICIDES

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Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.

### FUNGICIDES

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*Bushberries

Note: Please consult the individual product labels to ensure that your specific disease is controlled/suppressed in the appropriate crop.

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*Control: Effective control of the pest/disease. 
Suppression: Effective suppression of the pest/disease, reducing population levels.
## SEED TREATMENTS

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### Diseases

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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternaria spp. (seed-borne)</td>
<td></td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ascochyta (seed-borne)</td>
<td></td>
<td></td>
<td>S</td>
<td>S</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>Aspergillus spp. (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Blackleg (seed-borne)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botrytis cinerea (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Bunt</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Chalosporium spp. (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochliobolus (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Cochliobolus (soil-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Fusarium spp. (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Fusarium spp. (soil-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Leaf stripe</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Rhizoctonia solani</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Smut</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Penicillium spp. (seed-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Phomopsis</td>
<td></td>
<td></td>
<td>C</td>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Pythium spp. (soil-borne)</td>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific disease is controlled/suppressed in the appropriate crop.

### CONTACT INFORMATION

Call 1 888-283-6847 for more information or to find out who the sales representative is in your area.
It is in everyone’s best interest to preserve the fungicide tools we currently have available to avoid the situation we have with herbicide resistance. It should be noted that there are some fundamental differences between herbicide resistance and fungicide resistance.

Growers and agronomists need to consider three factors when assessing whether they are at risk of developing resistance. Assessing your resistance risk includes evaluating the combination of the fungicide MOA, the pathogen and the specific farming practices being used.
Evaluating The Risk of Fungicide Resistance

When you plot the pathogen risk against the fungicide risk and agronomic risk (farming practices), you can estimate your overall potential to develop fungicide resistance (risk).

### Fungicide Risk

<table>
<thead>
<tr>
<th>Fungicide Class</th>
<th>Fungicide Risk</th>
<th>Agronomic Risk</th>
<th>Combined Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>High = 6</td>
<td>3 6 6 12 9 18</td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>Medium = 3</td>
<td>1.5 3 3 6 4.5 9</td>
<td></td>
</tr>
<tr>
<td>Group 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi Sites</td>
<td>Low = 1</td>
<td>0.5 1 1 2 1.5 3</td>
<td></td>
</tr>
</tbody>
</table>

### Pathogen Risk

<table>
<thead>
<tr>
<th>Pathogen Risk</th>
<th>Pathogen Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low = 1</td>
<td>Fusarium head blight Pythium root rot Rhizoctonia Rusts Sclerotinia</td>
</tr>
<tr>
<td>Medium = 2</td>
<td>Anthracnose Ascochyta blight Mycosphaerella leaf spot Net blotch Septoria leaf spot Tan spot</td>
</tr>
<tr>
<td>High = 3</td>
<td>Alternaria Grey mould Powdery mildew</td>
</tr>
</tbody>
</table>

Source: www.frac.info
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For more information on fungicide resistance, see our videos on YouTube – goo.gl/Zj91Z1
Resistance MANAGEMENT: Combined Fungicide Resistance Risk

The Pathogen

// Single versus multiple disease cycles per year?  // Does the pathogen have a sexual stage?  If asexual, is the risk lower?
// High spore production?  // Relative fitness after mutation?
// Soil versus wind dispersal?  // Do they overwinter?
// Infects all growth stages of the crop?

Using the above factors and combining them with global real-world documentation, some of the major Canadian pathogens have been ranked from high to low risk in terms of their potential for resistance development. The results are shown in the table below.*

<table>
<thead>
<tr>
<th>HIGH RISK PATHOGEN = 3</th>
<th>CROP</th>
<th>DISEASE EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alternaria alternata</em></td>
<td>Various</td>
<td>Alternaria</td>
</tr>
<tr>
<td><em>Blumeria graminis</em></td>
<td>Wheat/barley</td>
<td>Powdery mildew</td>
</tr>
<tr>
<td><em>Botrytis cinerea</em></td>
<td>Various (lentils)</td>
<td>Grey mould</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEDIUM RISK PATHOGEN = 2</th>
<th>CROP</th>
<th>DISEASE EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ascochyta spp.</em></td>
<td>Various (pulses)</td>
<td>Ascochyta blight</td>
</tr>
<tr>
<td><em>Colletotrichum spp.</em></td>
<td>Various (pulses)</td>
<td>Anthracnose</td>
</tr>
<tr>
<td><em>Mycosphaerella pinodes</em></td>
<td>Peas</td>
<td>Mycosphaerella leaf spot</td>
</tr>
<tr>
<td><em>Pyrenophora teres</em></td>
<td>Barley</td>
<td>Net blotch</td>
</tr>
<tr>
<td><em>Pyrenophora tritici-repentis</em></td>
<td>Wheat</td>
<td>Tan spot</td>
</tr>
<tr>
<td><em>Septoria tritici</em></td>
<td>Wheat</td>
<td>Septoria leaf spot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOW RISK PATHOGEN = 1</th>
<th>CROP</th>
<th>DISEASE EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Fusarium spp.</em></td>
<td>Various</td>
<td>Fusarium head blight</td>
</tr>
<tr>
<td><em>Puccinia spp.</em></td>
<td>Various</td>
<td>Rusts</td>
</tr>
<tr>
<td><em>Pythium spp.</em></td>
<td>Various</td>
<td>Pythium root rot</td>
</tr>
<tr>
<td><em>Rhizoctonia spp.</em></td>
<td>Various</td>
<td>Rhizoctonia</td>
</tr>
<tr>
<td><em>Sclerotinia sclerotiorum</em></td>
<td>Various (canola/lentils)</td>
<td>Sclerotinia</td>
</tr>
</tbody>
</table>

* The listed pathogens may infect other crops that have not been listed.
Source: www.frac.info
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The Fungicide

// Single target site?
// Single gene controls resistance?
// High and persistent activity?

Fungicides are classified by their typical resistance behaviour pattern, even though resistance development risk may not be entirely uniform among members of a fungicide Group. The relative rankings below are based on the three factors shown on the left, plus global real-world documentation.

<table>
<thead>
<tr>
<th>Classification of Fungicide Resistance Risk*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH RISK = 6</strong></td>
</tr>
<tr>
<td><strong>Group 11 QoI (Strobilurins)</strong></td>
</tr>
<tr>
<td>Azoxystrobin</td>
</tr>
<tr>
<td>Picoxystrobin</td>
</tr>
<tr>
<td>Pyraclostrobin</td>
</tr>
<tr>
<td>Trifloxystrobin</td>
</tr>
<tr>
<td><strong>Group 1 MBC (Benzimidazoles)</strong></td>
</tr>
<tr>
<td>Thiabendazole</td>
</tr>
<tr>
<td>TPM</td>
</tr>
<tr>
<td><strong>Group 4 (Phenylamides)</strong></td>
</tr>
<tr>
<td>Metalaxyl</td>
</tr>
<tr>
<td><strong>MEDIUM TO HIGH RISK = 3</strong></td>
</tr>
<tr>
<td><strong>Group 7 SDHIs</strong></td>
</tr>
<tr>
<td>Boscalid</td>
</tr>
<tr>
<td>Penflufen</td>
</tr>
<tr>
<td>Fluopyram</td>
</tr>
<tr>
<td>Sefadaxane</td>
</tr>
<tr>
<td>Fluxapyroxad</td>
</tr>
<tr>
<td><strong>Group 2 (Dicarboxamides)</strong></td>
</tr>
<tr>
<td>Iprodione</td>
</tr>
<tr>
<td><strong>MEDIUM RISK = 3</strong></td>
</tr>
<tr>
<td><strong>Group 3 DMIs (Triazoles)</strong></td>
</tr>
<tr>
<td>Metconazole</td>
</tr>
<tr>
<td>Prothioconazole</td>
</tr>
<tr>
<td>Propiconazole</td>
</tr>
<tr>
<td>Tebuconazole</td>
</tr>
<tr>
<td><strong>Group 9 AP (Anilino Pyrimidines)</strong></td>
</tr>
<tr>
<td>Cyprodinil</td>
</tr>
<tr>
<td>Pyrimethanil</td>
</tr>
<tr>
<td><strong>LOW TO MEDIUM RISK = 1</strong></td>
</tr>
<tr>
<td><strong>Group 40 CAA (Carboxylic Acid Amines)</strong></td>
</tr>
<tr>
<td>Dimethomorph</td>
</tr>
<tr>
<td><strong>Group 12 (Phenylpyrroles)</strong></td>
</tr>
<tr>
<td>Fludioxonil</td>
</tr>
<tr>
<td><strong>M3 (Dithiocarbamates)</strong></td>
</tr>
<tr>
<td>Mancozeb</td>
</tr>
<tr>
<td>Maneb</td>
</tr>
<tr>
<td>Thiram</td>
</tr>
<tr>
<td><strong>M1/2 (Inorganics)</strong></td>
</tr>
<tr>
<td>Copper</td>
</tr>
<tr>
<td>Sulfur</td>
</tr>
<tr>
<td><strong>UNKNOWN</strong></td>
</tr>
<tr>
<td>Microbial membrane disruptors</td>
</tr>
</tbody>
</table>

*This is not an exhaustive list, but captures the majority of active ingredients that are relevant in Canada.
Source: www.frac.info
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Resistance MANAGEMENT: Combined Fungicide Resistance Risk

Agronomic Practices

// Climatic conditions favouring disease?
// How many fungicide applications per year?
// How many fungicide applications are targeted on the same pathogen year after year?
// What rates are used (lethal versus sub-lethal)?
// Resistant cultivars available?
// Irrigation potential?
// Sanitary measures (i.e., tillage)?
// Fertilization considerations?

The final step in assessing the overall risk is to evaluate your agronomic risk factors and assign a score of 1 for high-risk and 0.5 for low-risk situations. What this essentially means is that if you do all things correctly from an agronomic standpoint, you can cut your resistance risk in half!

High-risk agronomic practices for developing fungicide resistance include:

// Using the same mode of action against the same pathogen multiple times in the same growing season (in most cases, diseases that are controlled by seed treatments do not cause foliar symptoms in the same year)

// Applying a fungicide after the crop is already heavily infected versus applying it preventively (prior to heavy infection)

// No complementary use of other non-chemical control measures

// Using susceptible cultivars/varieties

// Not burying heavily infected residue (tillage)

// Poor crop rotation – planting the same crop year after year, or planting another crop that is susceptible to the same pathogens as the previous year

Reports of fungicide resistance in canola, cereal, corn, pulse and soybean crops are fairly rare in North America. The main pathogens of concern for Canadian growers are all classified as low risk, including such diseases as fusarium, rusts and sclerotinia. Additionally, agronomic and environmental conditions, which strongly influence resistance risk in Canadian provinces, are regarded as low. This means that while fungicide resistance is something growers should be aware of, the overall risk of fungicide resistance across Canada is quite low relative to the other areas of the world.
IF THERE’S RESISTANCE IN YOUR FIELD, YOU’LL FEEL IT IN YOUR YIELD.

TIME TO TANK MIX.

FOR MORE INFORMATION VISIT MIXITUP.CA
### BUCTRIL M

<table>
<thead>
<tr>
<th>TANK MIXES</th>
<th>REGISTERED OR SUPPORTED</th>
<th>TANK MIX ORDER</th>
<th>CROPS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally®</td>
<td>Registered</td>
<td>Ally® &gt; Buctril M &gt; NIS</td>
<td>Barley and Wheat</td>
<td>Used for hemp-nettle and chickweed as well as labelled weeds.</td>
</tr>
<tr>
<td>Axial®</td>
<td>Registered</td>
<td>Buctril M &gt; Axial® BIA</td>
<td>Spring barley and Spring wheat</td>
<td>Adigor® at 283 mL/ac. Do not apply by aerial application. Only apply this mix to wheat that is not undersowned to legumes.</td>
</tr>
<tr>
<td>Centurion®/Select®</td>
<td>Registered</td>
<td>Buctril M &gt; Centurion® &gt; Amigo®</td>
<td>Flax</td>
<td>Cannot be applied by air.</td>
</tr>
<tr>
<td>Everest®</td>
<td>Registered</td>
<td>Everest® &gt; Buctril M &gt; NIS</td>
<td>Spring wheat</td>
<td>Non-ionic at 0.25% v/v. Do not apply by aerial application.</td>
</tr>
<tr>
<td>Horizon® NG</td>
<td>Registered</td>
<td>Buctril M &gt; Horizon® NG</td>
<td>Wheat</td>
<td>For control of Persian darnel, increase Horizon® rate to 117 mL/ac. and Score® to 1% v/v.</td>
</tr>
<tr>
<td>Liquid Achieve®</td>
<td>Registered</td>
<td>Achiever® &gt; Buctril M &gt; Turbocharge®</td>
<td>Durum and Spring wheat</td>
<td>Do not apply by air. Add Turbocharge® at 0.5% v/v.</td>
</tr>
<tr>
<td>Luxxur</td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxur B &gt; Buctril M &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td>MCPA</td>
<td>Registered</td>
<td>Buctril M &gt; MCPA</td>
<td>Barley, Oats and Wheat</td>
<td>Can add an additional 275 g ai MCPA per hectare.</td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Registered</td>
<td>Buctril M &gt; MCPA</td>
<td>Barley, Oats and Wheat</td>
<td>To increase control of volunteer canola and hemp-nettle, add 2 to 4 oz of MCPA. MCPA K is preferred for hemp-nettle. Do not add more than 4 active ounces, beware of antagonistic effects of mixing a Group 1 and Group 4.</td>
</tr>
<tr>
<td>Poast®</td>
<td>Registered</td>
<td>Buctril M &gt; Poast®</td>
<td>Flax</td>
<td>Do not use on low linolenic varieties. Do not spray when flax is under stress.</td>
</tr>
<tr>
<td>Puma Advance</td>
<td>Registered</td>
<td>Buctril M &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
</tr>
<tr>
<td>Refine® SG</td>
<td>Registered</td>
<td>Refine® &gt; Buctril M &gt; NIS</td>
<td>Barley and Wheat</td>
<td>Usually used when targeting chickweed, hemp-nettle and redroot pigweed.</td>
</tr>
<tr>
<td>Refine® SG + Puma Advance</td>
<td>Registered</td>
<td>Refine® &gt; Buctril M &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
</tr>
<tr>
<td>Select®</td>
<td>Registered</td>
<td>Buctril M &gt; Select® &gt; Merge®</td>
<td>Flax</td>
<td>Cannot be applied by air; otherwise crop damage or poor control may result.</td>
</tr>
<tr>
<td>Sevin® XLR Plus</td>
<td>Bayer supported tank mix</td>
<td>Sevin® XLR Plus &gt; Buctril M</td>
<td>Barley, Oats, Wheat (Durum, Spring and Winter)</td>
<td></td>
</tr>
<tr>
<td>Stratego PRO (ON, QC, NB, NS, NFLD, PEI)</td>
<td>Supported</td>
<td>Stratego PRO &gt; Buctril M</td>
<td>Winter wheat</td>
<td>High water volumes decrease potential injury; especially important in cool temperatures.</td>
</tr>
<tr>
<td>Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Buctril M</td>
<td>Barley, Oats, Wheat (Durum, Spring and Winter)</td>
<td></td>
</tr>
<tr>
<td>Traxos®</td>
<td>Bayer supported tank mix</td>
<td>Buctril M &gt; Traxos®</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Varro</td>
<td>Registered</td>
<td>Varro &gt; Buctril M</td>
<td>Wheat</td>
<td></td>
</tr>
</tbody>
</table>

### CONVERGE XT (CONVERGE 480 AND CONVERGE FLEXX)

<table>
<thead>
<tr>
<th>TANK MIXES</th>
<th>REGISTERED OR SUPPORTED</th>
<th>TANK MIX ORDER</th>
<th>CROPS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrazine</td>
<td>Registered</td>
<td>Converge 480 &gt; Converge Flexx</td>
<td>Corn</td>
<td></td>
</tr>
<tr>
<td>Converge Flex + XtendiMax (dicamba) + Roundup</td>
<td>Supported</td>
<td>Converge Flexx &gt; XtendiMax &gt; Roundup</td>
<td>Corn</td>
<td>Use pre-emerge on corn.</td>
</tr>
<tr>
<td>Roundup</td>
<td>Registered</td>
<td>Converge 480 &gt; Converge Flexx &gt; Roundup</td>
<td>Corn</td>
<td>Converge XT tank mixed with Roundup can be applied up to the 3 leaf stage of Roundup-tolerant (glyphosate) corn at the low rate (30 ac./case) only. If tank mixing Converge XT with Roundup at the high or mid rate, it can only be applied pre-emerge.</td>
</tr>
<tr>
<td>Roundup Xtend</td>
<td>Supported</td>
<td>Converge 480 &gt; Converge Flexx &gt; Roundup Xtdend</td>
<td>Corn</td>
<td>Use pre-emerge on corn.</td>
</tr>
<tr>
<td>XtendiMax (dicamba)</td>
<td>Supported</td>
<td>Converge 480 &gt; Converge Flexx &gt; XtendiMax</td>
<td>Corn</td>
<td>Use pre-emerge on corn.</td>
</tr>
<tr>
<td>XtendiMax (dicamba) + Roundup</td>
<td>Supported</td>
<td>Converge 480 &gt; Converge Flexx &gt; XtendiMax &gt; Roundup</td>
<td>Corn</td>
<td>Use pre-emerge on corn.</td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
## Tank Mixes

### DECIS

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>Registered</td>
<td>Decis &gt; 2,4-D</td>
<td>Barley, Corn, Oats, Pasture and Wheat</td>
<td></td>
</tr>
<tr>
<td>Banvel®</td>
<td>Registered</td>
<td>Banvel® &gt; Decis</td>
<td>Barley, Corn, Oats, Pasture and Wheat</td>
<td></td>
</tr>
<tr>
<td>Buctril M</td>
<td>Registered</td>
<td>Decis &gt; Buctril M</td>
<td>Barley, Flax, Oats and Wheat</td>
<td></td>
</tr>
<tr>
<td>Centurion®</td>
<td>Bayer supported tank mix</td>
<td>Decis &gt; Centurion® &gt; Amtigo® (0.5% v/v)</td>
<td>All crops that both products are registered on</td>
<td></td>
</tr>
<tr>
<td>Centurion® + Liberty®</td>
<td>Bayer supported tank mix</td>
<td>Amtigo® (0.5% v/v) &gt; Liberty® &gt; Centurion® &gt; Decis</td>
<td>LibertyLink® trait canola</td>
<td></td>
</tr>
<tr>
<td>Delaro</td>
<td>Bayer supported tank mix</td>
<td>Delaro &gt; Decis</td>
<td>Lentils</td>
<td></td>
</tr>
<tr>
<td>Headline®</td>
<td>Bayer supported tank mix</td>
<td>Headline® &gt; Decis</td>
<td>All crops that both products are registered on</td>
<td></td>
</tr>
<tr>
<td>Lance®</td>
<td>Bayer supported tank mix</td>
<td>Lance® &gt; Decis</td>
<td>Alfalfa (seed production only), Canola and Lentils</td>
<td></td>
</tr>
<tr>
<td>Liberty®</td>
<td>Bayer supported tank mix</td>
<td>Liberty® &gt; Decis</td>
<td>LibertyLink® trait canola</td>
<td></td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Registered</td>
<td>Decis &gt; MCPA</td>
<td>Barley, Corn, Flax, Oats, Pasture and Wheat</td>
<td></td>
</tr>
<tr>
<td>Odyssey®</td>
<td>Bayer supported tank mix</td>
<td>Odyssey® &gt; Decis &gt; Merge®</td>
<td>Clearfield® Canola, Clearfield® Xceed B. Jannea Canola, Clearfield® Lentils</td>
<td>Merge® must be used with Odyssey® at a rate of 0.5 L/100 L of spray solution.</td>
</tr>
</tbody>
</table>

### INFINITY

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Bayer supported tank mix</td>
<td>Infinity &gt; 2,4-D Ester</td>
<td>Barley, Durum, Spring and Winter wheat</td>
<td>Add 2,4-D Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). When mixing with a graminicide, the addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td>2,4-D Ester + AMS</td>
<td>Registered for control of stork's-bill</td>
<td>AMS &gt; Infinity &gt; 2,4-D Ester</td>
<td>Barley, Durum, Spring and Winter wheat</td>
<td>Add 2,4-D Ester at 280 g ai/ha (4 active oz./ac.). When mixing with a graminicide, the addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td>Axial®</td>
<td>Registered</td>
<td>Infinity &gt; Axial®</td>
<td>Barley and Spring wheat</td>
<td>Apply when the annual grass weeds are at the 1 to 6 leaf, prior to 4th tiller, stage of growth.</td>
</tr>
<tr>
<td>Axial® + Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Infinity &gt; Axial® &gt; Adgor®</td>
<td>Barley and Spring wheat</td>
<td>Temporary crop injury may be observed when AMS is included for enhanced broadleaf weed control.</td>
</tr>
<tr>
<td>Decis</td>
<td>Bayer supported tank mix</td>
<td>Decis &gt; Infinity</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Horizon® NG</td>
<td>Registered</td>
<td>AMS &gt; Infinity &gt; Horizon® NG</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Liquid Achieve®</td>
<td>Registered</td>
<td>AMS &gt; Achieve® &gt; Infinity &gt; Turbocharge®</td>
<td>Barley, Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td>Lontrel®</td>
<td>Bayer supported tank mix</td>
<td>Infinity &gt; Lontrel®</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Luxxur</td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Infinity &gt; NIS (0.25% v/v in Durum wheat)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary target weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these specific weeds.</td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Bayer supported tank mix</td>
<td>Infinity &gt; MCPA Ester</td>
<td>Barley, Durum, Spring and Winter wheat</td>
<td>Add MCPA Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). When mixing with a graminicide, the addition of MCPA Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of MCPA, minimum crop growth stage is 3 leaf.</td>
</tr>
<tr>
<td>Puma Advance</td>
<td>Registered</td>
<td>AMS &gt; Infinity &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Puma Advance + Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Infinity &gt; Puma Advance</td>
<td>Barley and Spring wheat</td>
<td>Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.</td>
</tr>
<tr>
<td>Sevin® XLR Plus</td>
<td>Bayer supported tank mix</td>
<td>Sevin® XLR Plus &gt; Infinity</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Stratego PRO (ON, QC, NB, NS, Nfld, PEI)</td>
<td>Bayer supported tank mix</td>
<td>Stratego PRO &gt; Infinity</td>
<td>Winter wheat</td>
<td>High water volumes decrease potential injury; especially important in cool temperatures. Do not tank mix in durum wheat.</td>
</tr>
<tr>
<td>Traxos®</td>
<td>Bayer supported tank mix</td>
<td>Infinity &gt; Traxos®</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Traxos® + Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Infinity &gt; Traxos®</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Varro</td>
<td>Registered</td>
<td>Varro &gt; Infinity</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
<table>
<thead>
<tr>
<th>TANK MIXES</th>
<th>REGISTERED OR SUPPORTED</th>
<th>TANK MIX ORDER</th>
<th>CROPS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Bayer supported tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; 2,4-D Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add 2,4-D Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). When mixing with a graminicide, the addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td>2,4-D Ester + AMS</td>
<td>Registered for control of stork's-bill</td>
<td>AMS &gt; FX Herbicide &gt; Infinity &gt; 2,4-D Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add 2,4-D Ester at 280 g ai/ha (4 active oz./ac.). When mixing with a graminicide, the addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td>Axial® BIA</td>
<td>Registered tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; Axial® BIA</td>
<td>Barley and Spring wheat</td>
<td>Apply when the annual grass weeds are at the 1 to 6 leaf, prior to 4th tiller stage of growth.</td>
</tr>
<tr>
<td>Decis</td>
<td>Registered tank mix</td>
<td>Decis &gt; FX Herbicide &gt; Infinity</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Horizon® NG</td>
<td>Bayer supported tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; Horizon® NG</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Liquid Achieve®</td>
<td>Registered tank mix</td>
<td>Achiever &gt; FX Herbicide &gt; Infinity &gt; Turbocharge®</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Lontrel®</td>
<td>Bayer supported tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; Lontrel®</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Luxxur</td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Infinity &gt; FX Herbicide &gt; NIS (0.25% v/v in Durum wheat)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Bayer supported tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; MCPA Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add MCPA Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). When mixing with a graminicide, the addition of MCPA Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of MCPA, minimum crop growth stage is 3 leaf.</td>
</tr>
<tr>
<td>Puma Advance</td>
<td>Registered tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Sevin® XLR Plus</td>
<td>Bayer supported tank mix</td>
<td>Sevin® XLR Plus &gt; FX Herbicide &gt; Infinity</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; FX Herbicide &gt; Infinity</td>
<td>Barley, Durum, and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Traxos®</td>
<td>Bayer supported tank mix</td>
<td>FX Herbicide &gt; Infinity &gt; Traxos®</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Varro</td>
<td>Registered tank mix</td>
<td>AMS &gt; Varro &gt; FX Herbicide &gt; Infinity</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
</tbody>
</table>

Ammonium sulfate at 500 g/ha (99%) or 1 L/ha (49% solution) or 1.25 L/ha (40% solution) may be added for improved broadleaf weed control. If using an ammonium sulfate product with a different concentration, adjust the rate accordingly.

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
### Tank Mixes

#### Luxxur

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2,4-D Ester</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; 2,4-D &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>Unless otherwise noted for all Luxxur tank mixes, add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control. 2,4-D for improved stork’s bill control. Minimum of 4 leaf crop stage.</td>
</tr>
<tr>
<td><strong>Buctril M</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Thumper M &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td><strong>Curtail™ M</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac.) &gt; Luxxur B &gt; Curtail™ M &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Frontline™ XL</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac.) &gt; Frontline™ XL &gt; Luxxur B &gt; Infinity &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Infinity</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Infinity &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td><strong>Infinity FX</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Infinity &gt; FX Herbicide &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td><strong>MCPA Ester</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Infinity &gt; MCPA &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td><strong>OcTTain™</strong></td>
<td>Bayer supported tank mix</td>
<td>Paradigm™ &gt; Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; OcTTain™ &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>Minimum of 4 leaf crop stage as per OcTTain™ label.</td>
</tr>
<tr>
<td><strong>Paradigm™</strong></td>
<td>Bayer supported tank mix</td>
<td>Paradigm™ &gt; Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Prestige™ &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Pixxaro™</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Pixxaro™ &gt; Pixxaro™ B &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td>When Luxxur is tank mixed with Pixxaro™, NIS is not required for broadleaf control.</td>
</tr>
<tr>
<td><strong>Prestige™</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac.) &gt; Luxxur B &gt; Prestige™ &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Stellar™</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac.) &gt; Luxxur B &gt; Stellar™ &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td>Minimum of 4 leaf crop stage. If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td><strong>Thumper</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Thumper &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Trophy®</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Trophy® A &gt; Trophy® B &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
## Tank Mixes

### Registered or Supported

<table>
<thead>
<tr>
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<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester + Roundup</td>
<td>Registered Olympus &gt; 2,4-D Ester &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only. 294 g ae/ac. before the emergence of cereals to control weeds greater than 8 cm tall or harder to control weeds. Use Nufarm 2,4-D Ester 700 only prior to seeding or after seeding but prior to emergence of the crop. For pre-seed or pre-emergent application of Nufarm 2,4-D Ester 700 only, apply 134 to 213 g ae/ac. to control weeds less than 8 cm.</td>
</tr>
<tr>
<td>AIM + Roundup</td>
<td>Registered Olympus &gt; AIM &gt; Roundup</td>
<td>Wheat</td>
<td>Potential MRL issue that grain from crops treated with this product prior to harvest may have market access concerns. To avoid potential trade issues, follow product labels and consult your commodity buyer before applying this product.</td>
</tr>
<tr>
<td>Avadex Liquid EC</td>
<td>Registered Olympus &gt; Avadex</td>
<td>Wheat</td>
<td>Do not apply this product before seedling wheat in soils with 4% or less organic matter (brown, dark brown or grey wooded soils) where discs are to be used for seeding. If an air seeder is to be used, it must be equipped with a depth control device to ensure accurate seed placement, otherwise crop injury may occur.</td>
</tr>
<tr>
<td>BlackHawk (with carfentrazone) + Roundup</td>
<td>Registered Olympus &gt; BlackHawk &gt; Roundup</td>
<td>Wheat</td>
<td>Potential MRL issue that grain from crops treated with this product prior to harvest may have market access concerns. To avoid potential trade issues, follow product labels and consult your commodity buyer before applying this product.</td>
</tr>
<tr>
<td>BlackHawk (with pyraflufen) + Roundup</td>
<td>Registered Olympus &gt; BlackHawk &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only. Pre-seed or a maximum of 3 days after seeding.</td>
</tr>
<tr>
<td>Buctril M + Roundup</td>
<td>Registered Olympus &gt; Buctril M &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only.</td>
</tr>
<tr>
<td>CleanStart</td>
<td>Registered Olympus &gt; CleanStart</td>
<td>Wheat</td>
<td>Potential MRL issue that grain from crops treated with this product prior to harvest may have market access concerns. To avoid potential trade issues, follow product labels and consult your commodity buyer before applying this product.</td>
</tr>
<tr>
<td>Glykamba</td>
<td>Registered Olympus &gt; Glykamba</td>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>Goldwing + Roundup</td>
<td>Registered Olympus &gt; Goldwing &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only.</td>
</tr>
<tr>
<td>Heat LQ + Roundup</td>
<td>Registered Olympus &gt; Heat LQ &gt; Roundup</td>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>MCPA Ester + Roundup</td>
<td>Registered Olympus &gt; MCPA Ester &gt; Roundup</td>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>Pardner + Roundup</td>
<td>Registered Olympus &gt; Pardner &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only.</td>
</tr>
<tr>
<td>Roundup</td>
<td>Registered Olympus &gt; Roundup</td>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>XtendiMax (dicamba) + Roundup</td>
<td>Registered Olympus &gt; XtendiMax &gt; Roundup</td>
<td>Wheat</td>
<td>For minimum or zero till operations only. Bander II is no longer manufactured, but product still remains in the distribution system.</td>
</tr>
</tbody>
</table>

### Option Liquid

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrazine + UAN</td>
<td>Registered Option &gt; Atrazine &gt; UAN</td>
<td>Corn</td>
<td>Possible antagonism affecting yellow foxtail activity.</td>
</tr>
<tr>
<td>Distinct + UAN</td>
<td>Registered Distinct &gt; Option &gt; UAN</td>
<td>Corn</td>
<td></td>
</tr>
<tr>
<td>Roundup</td>
<td>Supported Option &gt; Roundup</td>
<td>Corn</td>
<td>Roundup-tolerant (glyphosate) corn only.</td>
</tr>
<tr>
<td>UAN</td>
<td>Registered Option &gt; UAN</td>
<td>Corn</td>
<td>If used alone, must be used with UAN.</td>
</tr>
<tr>
<td>XtendiMax (dicamba) + UAN</td>
<td>Registered Option &gt; XtendiMax &gt; UAN</td>
<td>Corn</td>
<td>Can be applied up to the B leaf stage of corn.</td>
</tr>
</tbody>
</table>

## Pardner

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Registered 2,4-D Ester &gt; Pardner</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accent + NIS</td>
<td>Registered Accent &gt; Pardner &gt; NIS</td>
<td>Field corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banvel</td>
<td>Registered Banvel &gt; Pardner</td>
<td>Field corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizon NG</td>
<td>Registered Horizon &gt; Pardner</td>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid Achieve</td>
<td>Registered Achieve &gt; Pardner</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Registered MCPA Ester &gt; Pardner</td>
<td>Barley, Canary seed, Fall rye, Flax, Oats, Seedling grasses and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sevin XLR Plus</td>
<td>Bayer supported tank mix Sevin XLR Plus &gt; Pardner</td>
<td>All crops that both products are registered on</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
## Tank Mixes

### Puma Advance

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Registered 2,4-D Ester &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ally®</td>
<td>Registered Ally® &gt; Puma Advance</td>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attain™ XC</td>
<td>Registered Attain™ XC &gt; Puma Advance</td>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barricade®</td>
<td>Bayer supported tank mix Barricade® &gt; Puma Advance</td>
<td>Barley, Durum, Spring and Winter wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buctril M</td>
<td>Registered Buctril M &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curtail™ M</td>
<td>Registered Curtail™ M &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decis</td>
<td>Bayer supported tank mix Decis &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dichlorprop-D</td>
<td>Registered Dichlorprop-D &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyvel®</td>
<td>Registered Dyvel® &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
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</tr>
<tr>
<td>Dyvel® DS</td>
<td>Registered Dyvel® DS &gt; Puma Advance</td>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estaprop®</td>
<td>Registered Estaprop® &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Express Pack®</td>
<td>Registered Express Pack® &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td>Registered for foxtail only. Will not perform on wild oats.</td>
<td></td>
</tr>
<tr>
<td>Frontline™</td>
<td>Registered Frontline™ &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td>Registered for foxtail only. Will not perform on wild oats.</td>
<td></td>
</tr>
<tr>
<td>Grow TTF®</td>
<td>Bayer supported tank mix Grow TTF® &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infinity</td>
<td>Registered Infinity &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infinity FX</td>
<td>Registered FX Herbicide &gt; Infinity &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
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</tr>
<tr>
<td>Lontrel® 360</td>
<td>Registered Lontrel® 360 &gt; Puma Advance</td>
<td>Wheat</td>
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</tr>
<tr>
<td>MCPA Amine</td>
<td>Registered MCPA Amine &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
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</tr>
<tr>
<td>MCPA Ester</td>
<td>Registered MCPA Ester &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mecoprop</td>
<td>Registered Mecoprop &gt; Puma Advance</td>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Momentum®</td>
<td>Bayer supported tank mix Momentum® &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
<td></td>
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<tr>
<td>OcTtain™</td>
<td>Bayer supported tank mix OcTtain™ &gt; Puma Advance</td>
<td>Durum and Spring wheat</td>
<td>Minimum of 4 leaf crop stage as per OcTtain™ label.</td>
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<tr>
<td>Pixxaro™</td>
<td>Bayer supported tank mix Pixxaro™ &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prestige™</td>
<td>Registered Prestige™ &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prestige™ XC</td>
<td>Registered Prestige™ XC &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refine® SG</td>
<td>Registered Refine® SG &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sevin® XLR Plus</td>
<td>Bayer supported tank mix Sevin® XLR Plus &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectrum™</td>
<td>Registered Spectrum™ &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td>Registered for foxtail only. Will not perform on wild oats.</td>
<td></td>
</tr>
<tr>
<td>Thumper</td>
<td>Registered Thumper &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tilt®</td>
<td>Bayer supported tank mix Tilt® &gt; Puma Advance</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triton® C</td>
<td>Registered Triton® C &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trophy®</td>
<td>Registered Trophy® &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turboprop® 600</td>
<td>Registered Turboprop® 600 &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unity®</td>
<td>Registered Unity® &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
<table>
<thead>
<tr>
<th>TANK MIXES</th>
<th>REGISTERED OR SUPPORTED</th>
<th>TANK MIX ORDER</th>
<th>CROPS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Magnum® II</td>
<td>Registered</td>
<td>Sencor DF &gt; Dual Magnum® II</td>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Eragon® + Merge®</td>
<td>Supported</td>
<td>Sencor DF &gt; Eragon® &gt; Merge®</td>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Frontier®</td>
<td>Registered</td>
<td>Sencor DF &gt; Frontier®</td>
<td>Soybeans</td>
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</tr>
<tr>
<td>Lorox®</td>
<td>Registered</td>
<td>Sencor DF &gt; Lorox®</td>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Pursuit®</td>
<td>Registered</td>
<td>Sencor DF &gt; Pursuit®</td>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Roundup</td>
<td>Registered</td>
<td>Sencor DF &gt; Roundup</td>
<td>Soybeans</td>
<td>Roundup-tolerant (glyphosate) soybeans only.</td>
</tr>
<tr>
<td>Roundup Xtend</td>
<td>Registered</td>
<td>Sencor DF &gt; Roundup Xtend</td>
<td>Soybeans</td>
<td>Roundup Ready 2 Xtend soybeans only.</td>
</tr>
<tr>
<td>Treflan®</td>
<td>Registered</td>
<td>Sencor DF &gt; Treflan® EC</td>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>XtendiMax (dicamba) + Roundup</td>
<td>Registered</td>
<td>Sencor DF &gt; XtendiMax &gt; Roundup</td>
<td>Soybeans</td>
<td>Roundup Ready 2 Xtend soybeans only.</td>
</tr>
</tbody>
</table>

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# Tank Mixes

## THUMPER

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2,4-D Ester</strong></td>
<td>Bayer supported tank mix</td>
<td>Thumper &gt; 2,4-D</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add 2,4-D Ester at 140 g ai/ha (2 active oz./ac.) for enhanced broadleaf control. When mixing with a grassicide, the addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages.</td>
</tr>
<tr>
<td><strong>Decis</strong></td>
<td>Bayer supported tank mix</td>
<td>Decis &gt; Thumper</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Horizon® NG</strong></td>
<td>Registered</td>
<td>Thumper &gt; Horizon® NG</td>
<td>Durum and Spring wheat</td>
<td>Used for Persian darnel.</td>
</tr>
<tr>
<td><strong>Liquid Achieve®</strong></td>
<td>Registered</td>
<td>Achieve® &gt; Thumper &gt; Turbocharge®</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Luxxur</strong></td>
<td>Bayer supported tank mix</td>
<td>Luxxur A &gt; AMS (0.5 L/ac. in Wheat) &gt; Luxxur B &gt; Thumper &gt; NIS (0.25% v/v in Durum wheat)</td>
<td>Durum, Spring and Winter wheat</td>
<td>Minimum of 4 leaf crop stage. If Canada thistle or dandelions are the primary targeted weeds, we would not recommend this tank-mix partner as under certain environmental conditions, reduced activity can occur on these weeds.</td>
</tr>
<tr>
<td><strong>Puma Advance</strong></td>
<td>Registered</td>
<td>Thumper &gt; Puma Advance</td>
<td>Barley and Wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Sevin® XLR Plus</strong></td>
<td>Bayer supported tank mix</td>
<td>Sevin® XLR Plus &gt; Thumper</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Tilt®</strong></td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Thumper</td>
<td>Barley, Durum and Spring wheat</td>
<td>Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.</td>
</tr>
</tbody>
</table>

## TUNDRA

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2,4-D Ester</strong></td>
<td>Bayer supported tank mix</td>
<td>Tundra &gt; 2,4-D Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add 2,4-D Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). The addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td><strong>2,4-D Ester + AMS</strong></td>
<td>Registered</td>
<td>AMS &gt; Tundra &gt; 2,4-D Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Decis</strong></td>
<td>Bayer supported tank mix</td>
<td>Decis &gt; Tundra</td>
<td>Barley, Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td><strong>Lontrel®</strong></td>
<td>Bayer supported tank mix</td>
<td>Lontrel® &gt; Tundra</td>
<td>Barley, Durum and Spring wheat</td>
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</tr>
<tr>
<td><strong>MCPA Ester</strong></td>
<td>Bayer supported tank mix</td>
<td>Tundra &gt; MCPA Ester</td>
<td>Barley, Durum and Spring wheat</td>
<td>Add MCPA Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). The addition of MCPA Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages.</td>
</tr>
<tr>
<td><strong>Sevin® XLR Plus</strong></td>
<td>Bayer supported tank mix</td>
<td>Sevin® XLR Plus &gt; Tundra</td>
<td>Barley, Durum and Spring wheat</td>
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</tr>
<tr>
<td><strong>Tilt®</strong></td>
<td>Bayer supported tank mix</td>
<td>Tilt® &gt; Tundra</td>
<td>Barley and Spring wheat</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>TANK MIXES</th>
<th>REGISTERED OR SUPPORTED</th>
<th>TANK MIX ORDER</th>
<th>CROPS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Registered</td>
<td>AMS (0.5 L/ac. in Wheat) &gt; Varro &gt; 2,4-D &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td>2,4-D for improved stalk’s-bill control.</td>
</tr>
<tr>
<td>Attain™ XC</td>
<td>Registered</td>
<td>Varro &gt; Attain™ XC</td>
<td>Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Attain™ XC</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Attain™ XC</td>
<td>Durum wheat</td>
<td></td>
</tr>
<tr>
<td>Barricade®/</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Barricade®</td>
<td>Durum and Spring wheat</td>
<td>Add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control. Add MCPA (4 active oz/ac.) for volunteer Clearfield canola or Group 2 resistant weeds.</td>
</tr>
<tr>
<td>Barricade® M</td>
<td>Bayer supported tank mix</td>
<td>Barricade® M &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td>Add AMS (spring wheat) or NIS (durum wheat) for enhanced grass control.</td>
</tr>
<tr>
<td>Buctril M</td>
<td>Registered</td>
<td>Varro &gt; Buctril M</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Buctril M</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Buctril M</td>
<td>Winter wheat</td>
<td></td>
</tr>
<tr>
<td>Curtail™ M</td>
<td>Registered</td>
<td>AMS &gt; Varro &gt; Curtail™ M</td>
<td>Spring wheat</td>
<td>In spring wheat add AMS adjuvant when tank mixing with Momentum™ herbicide. Use NIS adjuvant in durum wheat.</td>
</tr>
<tr>
<td>Frontline™ XL</td>
<td>Registered</td>
<td>Varro &gt; Frontline™ XL</td>
<td>Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Grow TTF®</td>
<td>Bayer supported tank mix</td>
<td>Grow TTF® &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Infinity</td>
<td>Registered</td>
<td>Varro &gt; Infinity</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td>Infinity FX</td>
<td>Registered</td>
<td>AMS &gt; Varro &gt; FX Herbicide &gt; Infinity</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Registered</td>
<td>AMS (0.5 L/ac. in Wheat) &gt; Varro &gt; MCPA &gt; NIS (0.25% v/v in Durum)</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Momentum®</td>
<td>Bayer supported tank mix</td>
<td>AMS &gt; Varro &gt; Momentum® &gt; NIS (in Durum wheat)</td>
<td>Durum and Spring wheat</td>
<td>In spring wheat add AMS adjuvant when tank mixing with Momentum™ herbicide. Use NIS adjuvant in durum wheat. Minimum of 4 leaf crop stage as per OcTTain™ label.</td>
</tr>
<tr>
<td>OcTTain™</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; OcTTain™</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Paradigm™</td>
<td>Bayer supported tank mix</td>
<td>AMS &gt; Paradigm™ &gt; Varro</td>
<td>Durum, Spring and Winter wheat</td>
<td>When Varro is tank mixed with Paradigm™, non-ionic surfactant (NIS) is not required for broadleaf control if MCPA or AMS is added in the tank mixture.</td>
</tr>
<tr>
<td>Pixxaro™</td>
<td>Bayer supported tank mix</td>
<td>AMS &gt; Varro &gt; Pixxaro® B</td>
<td>Durum, Spring and Winter wheat</td>
<td>When Varro is tank mixed with Pixxaro®, NIS is not required for broadleaf control.</td>
</tr>
<tr>
<td>PP-23235</td>
<td>Bayer supported tank mix</td>
<td>PP-23235 &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td>Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.</td>
</tr>
<tr>
<td>PP-2525</td>
<td>Bayer supported tank mix</td>
<td>PP-2525 &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td>Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.</td>
</tr>
<tr>
<td>PP-31155</td>
<td>Bayer supported tank mix</td>
<td>PP-31155 &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td>Add MCPA Ester at 280 g ai/ha (4 active oz/ac.) if required.</td>
</tr>
<tr>
<td>Prestige®</td>
<td>Bayer supported tank mix</td>
<td>AMS &gt; Varro &gt; Prestige® &gt; NIS (in Durum wheat)</td>
<td>Durum and Spring wheat</td>
<td>In spring wheat add AMS adjuvant when tank mixing with Prestige® herbicide. Use NIS adjuvant in durum wheat.</td>
</tr>
<tr>
<td>Refine® M/Broadside®</td>
<td>Bayer supported tank mix</td>
<td>Refiner® &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Refine® SG</td>
<td>Registered</td>
<td>Refiner® &gt; Varro</td>
<td>Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Refine® SG + 2,4-D Ester</td>
<td>Registered</td>
<td>Refiner® &gt; Varro &gt; 2,4-D</td>
<td>Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Refine® SQ + MCPA Ester</td>
<td>Registered</td>
<td>Refiner® &gt; Varro &gt; MCPA</td>
<td>Spring wheat</td>
<td>Improved Canada thistle control.</td>
</tr>
<tr>
<td>Retain® SG</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Retain®</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Stellar™</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Stellar™</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Thumper</td>
<td>Registered</td>
<td>Varro &gt; Thumper</td>
<td>Durum, Spring and Winter wheat</td>
<td></td>
</tr>
<tr>
<td>Tilt®</td>
<td>Bayer supported tank mix</td>
<td>Varro &gt; Tilt®</td>
<td>Spring and Winter wheat</td>
<td>Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control. Studies show that greatest return on investment using a foliar fungicide occurs when applied at the head and flag leaf timings.</td>
</tr>
<tr>
<td>Travallas®</td>
<td>Bayer supported tank mix</td>
<td>Travallas® &gt; Varro</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
### Velocity M3

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Ester</td>
<td>Bayer supported tank mix</td>
<td>Velocity m3 &gt; 2,4-D Ester</td>
<td>Durum, Spring and Winter wheat</td>
<td>Add 2,4-D Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). The addition of 2,4-D Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. In Spring and Winter wheat include AMS adjuvant when adding 2,4-D Ester. With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
</tr>
<tr>
<td>2,4-D Ester + AMS</td>
<td>Registered AMS &gt; Velocity m3 &gt; 2,4-D Ester</td>
<td>Spring wheat</td>
<td>For control of Stork’s-bill. Add 2,4-D Ester at 280 g ai/ha (4 active oz./ac.). With the addition of 2,4-D, minimum crop growth stage is 4 leaf.</td>
<td></td>
</tr>
<tr>
<td>Decis</td>
<td>Bayer supported tank mix</td>
<td>Velocity m3 &gt; Decis</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Lontrel&lt;sup&gt;™&lt;/sup&gt;</td>
<td>Bayer supported tank mix</td>
<td>Lontrel&lt;sup&gt;™&lt;/sup&gt; &gt; Velocity m3</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>MCPA Ester</td>
<td>Bayer supported tank mix</td>
<td>Velocity m3 &gt; MCPA Ester</td>
<td>Durum, Spring and Winter wheat</td>
<td>Add MCPA Ester at 140 to 280 g ai/ha (2 to 4 active oz./ac.). The addition of MCPA Ester may result in reduced grass control under drought conditions, heavy grass populations or advanced grass stages. In Spring and Winter wheat include AMS adjuvant when adding MCPA Ester.</td>
</tr>
<tr>
<td>Sevin&lt;sup&gt;®&lt;/sup&gt; XLR Plus</td>
<td>Bayer supported tank mix</td>
<td>Sevin&lt;sup&gt;®&lt;/sup&gt; XLR Plus &gt; Velocity m3</td>
<td>Durum and Spring wheat</td>
<td></td>
</tr>
<tr>
<td>Tilt&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Bayer supported tank mix</td>
<td>Tilt&lt;sup&gt;®&lt;/sup&gt; &gt; Velocity m3</td>
<td>Spring and Winter wheat</td>
<td>Temporary crop injury may be observed when AMS adjuvant is included for enhanced weed control.</td>
</tr>
</tbody>
</table>

### ViOS G3

<table>
<thead>
<tr>
<th>Tank Mixes</th>
<th>Registered or Supported</th>
<th>Tank Mix Order</th>
<th>Crops</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrazine + Roundup</td>
<td>Supported</td>
<td>Atrazine &gt; ViOS &gt; Roundup</td>
<td>Corn</td>
<td>Roundup-tolerant (glyphosate) corn only.</td>
</tr>
<tr>
<td>Liberty&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Registered</td>
<td>ViOS &gt; Liberty&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Corn</td>
<td>Liberty&lt;sup&gt;®&lt;/sup&gt; tolerant corn only.</td>
</tr>
<tr>
<td>Roundup</td>
<td>Registered</td>
<td>ViOS &gt; Roundup</td>
<td>Corn</td>
<td>Roundup-tolerant (glyphosate) corn only.</td>
</tr>
<tr>
<td>XtendiMax + Roundup</td>
<td>Supported</td>
<td>ViOS &gt; XtendiMax &gt; Roundup</td>
<td>Corn</td>
<td>Only use up to the 5 leaf stage of corn.</td>
</tr>
</tbody>
</table>

Note: Please consult the individual product labels to ensure that your specific pest is controlled/suppressed in the appropriate crop.
Temperature Consideration and Herbicide Application

Herbicides, their activity and weed control ability, as well as their crop safety characteristics, can be affected by temperature. Below are application guidelines based on overnight temperatures that when followed, will help you get the most from your herbicide application.

These guidelines are based on temperatures taken within 12 in. of ground level. If temperatures are taken 4 ft. above this, add 1°C to each of the temperatures.

<table>
<thead>
<tr>
<th>OVERNIGHT TEMPERATURE</th>
<th>GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1°C to -3°C (after a frost)</td>
<td>Wait for at least 72 hours of good growing weather before applying herbicides. Good growing conditions typically occur when the minimum daytime temperature is at least +18°C with overnight lows no lower than +3°C.</td>
</tr>
<tr>
<td>0°C</td>
<td>Wait for at least 48 to 72 hours of good growing weather before applying herbicides.</td>
</tr>
<tr>
<td>+1°C</td>
<td>Wait for at least 24 to 48 hours of good growing weather before applying herbicides.</td>
</tr>
<tr>
<td>+2°C</td>
<td>Wait for at least 24 hours of good growing weather before applying herbicides.</td>
</tr>
<tr>
<td>+3°C</td>
<td>Wait until temperatures warm up to at least +15°C that day before applying herbicides.</td>
</tr>
<tr>
<td>+4°C</td>
<td>Spray herbicides early that morning.</td>
</tr>
</tbody>
</table>

Note: Please consult product labels for specific temperature related usage instructions.
Remember W.A.M.L.E.G.S. for the Proper Tank-Mix Order

Similar to W.A.L.E.S., W.A.M.L.E.G.S. describes the order in which tank-mix partners are added to the sprayer tank. The order is important to reduce the likelihood of chemical incompatibility.

Steps for Successful Tank Mixing

Follow these best practices to ensure proper tank mixing and the reduced possibility of product incompatibility. There are two types of incompatibility problems - physical and chemical.

Physical Incompatibility

Tank mixes with physical incompatibility problems may separate into layers (that is, oil and water), and solids may settle faster than normal. In severe cases, physical incompatibility may cause the solution to gel or cause solids to clump. When this happens, tanks will have to be drained and flushed and all filters, screens, and nozzles removed and cleaned.

Examples of physical incompatibility include:

- Dry products fail to disperse or suspend properly in the solution. When this happens, sediment can form a cake-like layer that accumulates on the bottom of the tank or form particles that can clog screens and filters.
- Liquid solutions can curdle and thicken into a paste or gel, making it difficult to clean the tank.
- Undissolved materials can clog screens and nozzles.
- Oil residue coatings or films can collect on tank walls and rubber hoses.
- Active ingredients separate into distinct layers in the spray tank.
- Excess foaming can arise from trapped air in the tank mixture.

Chemical Incompatibility

Chemical incompatibility can negatively affect spray quality, product uptake, and plant surface retention of the application. The effect of a chemically incompatible tank mixture may not always be obvious. Visible crop injury (phytotoxicity) may occur a few hours to several days following an application. Sometimes, reduced efficacy is the only observable effect of a chemically incompatible solution. Solving the problem may require additional applications that can decrease yield, harm crop quality, or both.
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